XX International Workshop on Deep-Inelastic Scattering and Related Subjects

Report of Contributions

https://indico.cern.ch/e/dis2012

Contribution ID: **0** Type: **not specified**

Medium-induced soft gluon radiation in the quark scattering process without color transfer in t-channel

Wednesday, 28 March 2012 16:45 (20 minutes)

We study coherence effects on the medium-induced soft gluon radiation off an ‘’asymptotic quark “ traversing a hot and dense QCD medium. The transverse momentum spectrum of the emitted gluon is computed at first order in opacity expansion. The interference effects between the initial and final state radiation modify the soft gluon radiation when a finite angle between the initial and final quarks is considered. The spectrum presents a soft divergence. We comment on possible implications on observables in heavy ion collisions which are sensitive to the initial state radiation.

Primary author: MA, Hao

Co-authors: SALGADO LOPEZ, Carlos Albert (Universidade de Santiago de Compostela (ES)); MARTINEZ GUERRERO, Mauricio (FIAS); ARMESTO PEREZ, Nestor (Universidade de Santiago de Compostela (ES)); MEHTAR-TANI, Yacine

Presenter: MA, Hao

Session Classification: Future of DIS

Track Classification: Future of DIS

Contribution ID: **1** Type: **not specified**

Towards parton shower to 2 to 2 matrix element matching in kt-factorisation

Tuesday, 27 March 2012 16:30 (20 minutes)

We present a subtraction method for including next to leading order corrections to a 2 to 2 jet production process in kt-factorisation equivalent to a jet matching procedure in Monte Carlo generators. We study the improvement in soft cut dependance.

Primary authors: Dr HAUTMANN, Francesco (University of Oxford); JUNG, Hannes (Deutsches Elektronen-Synchrotron (DE)); Dr KUTAK, Krzysztof (Instytut Fizyki Jadrowej im. H. Niewodniczanskiego, Krakow); Dr DEAK, Michal (Universidade de Santiago de Compostela)

Presenter: Dr DEAK, Michal (Universidade de Santiago de Compostela)

Session Classification: Hadronic final states

Track Classification: Hadronic final states

Contribution ID: **2** Type: **not specified**

A comparative study of small x Monte Carlos with and without QCD coherence effects

Thursday, 29 March 2012 12:20 (20 minutes)

We compare two Monte Carlo implementations of resummation schemes for the description of parton evolution at small values of Bjorken x. One of them if based on the BFKL evolution equation. The other one is based on the CCFM partonic kernel where QCD coherence effects are introduced. It has been argued that both approaches agree with each other in the x to 0 limit. We show that this is not the case for azimuthal angle dependent quantities since at high energies the BFKL approach is dominated by its zero conformal spin component while the CCFM gluon Green function receives contributions from all conformal spins even at very small x.

Primary authors: SABIO VERA, Agustin (CERN); CHACHAMIS, Grigorios (Paul Scherrer Institut); Dr DEAK, Michal (Universidade de Santiago de Compostela); STEPHENS, Philip (Lancaster University)

Presenter: Dr DEAK, Michal (Universidade de Santiago de Compostela)

Session Classification: Diffraction and vector mesons

Track Classification: Diffraction and vector mesons

Contribution ID: **3** Type: **not specified**

Drell-Yan lepton pair production in the kt-factorization approach

Tuesday, 27 March 2012 16:50 (20 minutes)

In the framework of the kt-factorization approach, the production of unpolarized Drell-Yan lepton pair at high energies is studied. The consideration is based on the O(alpha) and $O(alpha alpha_s) off-shell partonic matrix elements with virtual photon and Z boson exchange. The calculations include leptonic decays of Z bosons with full spin correlations as well as gamma - Z interference. The unintegrated parton densities in a proton are determined by the Kimber-Martin-Ryskin prescription. Our numerical predictions are compared with the data taken by the D0, CDF and CMS collaborations at the Tevatron and LHC energies. Special attention is put on the specific angular distributions measured very recently by the CDF collaboration for the first time.

Primary authors: Dr LIPATOV, Artem (SINP MSU); Mr MALYSHEV, Maxim (SINP MSU); ZOTOV, Nikolay (SINP, Moscow State University)

Presenter: Mr MALYSHEV, Maxim (SINP MSU)

Session Classification: Hadronic final states

Track Classification: Hadronic final states

Contribution ID: **4** Type: **not specified**

Overview of Deeply Virtual Compton Scattering at HERMES

Wednesday, 28 March 2012 14:35 (20 minutes)

Deeply Virtual Compton Scattering represents the best experimental channel through which to understand Generalised Parton Distributions. The HERMES experiment measured the most diverse set of DVCS results of any experiment; this talk discusses the most recent sets of DVCS results released by HERMES and the unique experimental conditions found at HERMES that facilitated the measurements. We also examine the various ways in which the HERMES experimental measurements are being used to constrain GPDs and how future experiments can learn from the HERMES program.

Primary author: MURRAY, Morgan (U)

Presenter: MURRAY, Morgan (U)

Session Classification: Combined: Diffraction and vector mesons/spin physics

Track Classification: Diffraction and vector mesons/spin physics

Contribution ID: **5** Type: **not specified**

Introduction

Monday, 26 March 2012 09:00 (10 minutes)

Presenter: BROCK, Ian (Universitaet Bonn (DE))

Session Classification: Plenary

Contribution ID: **6** Type: **not specified**

Introduction to deep inelastic scattering: past and present

Monday, 26 March 2012 09:10 (40 minutes)

Presenter: FELTESSE, Joel (DAPNIA)

Session Classification: Plenary

Contribution ID: **7** Type: **not specified**

Precision measurements of the proton structure

Monday, 26 March 2012 09:50 (40 minutes)

Presenter: ABT, Iris (Werner-Heisenberg-Institut)

Session Classification: Plenary

Contribution ID: **8** Type: **not specified**

alpha_s status

Presenter: HOANG, Andre

Contribution ID: **9** Type: **not specified**

Status of polarised structure functions

Contribution ID: **10** Type: **not specified**

Electroweak physics and precision measurements of m_W and m_t

Contribution ID: **11** Type: **not specified**

QCD and the production of heavy bosons at the Tevatron

Contribution ID: **12** Type: **not specified**

Diffraction from HERA to the LHC

Contribution ID: **13** Type: **not specified**

Theory developments in QCD

Presenter: DE FLORIAN, Daniel (Laboratorio de Fisica Teorica Departamento de Fisica)

Contribution ID: **14** Type: **not specified**

Status of Higgs searches at ATLAS; Jets+W/Z + top quark production at the LHC

Presenter: KORTNER, Oliver (Max-Planck-Institut fuer Physik (Werner-Heisenberg-Institut) (D)

Contribution ID: **15** Type: **not specified**

Quarks and gluons in heavy ion collisions

Presenter: REYGERS, Klaus Johannes (Ruprecht-Karls-Universitaet Heidelberg (DE))

Contribution ID: **16** Type: **not specified**

Status of Higgs searches at CMS; New physics searches at the LHC

Contribution ID: **17** Type: **not specified**

On the pair correlations of neutral K, D, B and B_s mesons with close momenta produced in inclusive multiparticle processes

Wednesday, 28 March 2012 15:10 (20 minutes)

The phenomenological structure of inclusive cross sections of the
production of two neutral K mesons in hadron-hadron, hadron-nucleus and nucleus-nucleus collisions is investigated taking into account the strangeness conservation in strong and electromagnetic
interactions. Relations describing the dependence of the correlations of two short-lived and two long-lived neutral kaons
$K^0_S K^0_S$, $K^0_L K^0_L$ and the correlations of "mixed" pairs
$K^0_S K^0_L$ at small relative momenta upon the space-time parameters of the generation region of K^0 and $\bar{K}^0$ mesons
have been obtained. These relations involve the contributions
of Bose-statistics and S-wave strong final-state interaction of two
K^0 ($\bar{K}^0$) mesons as well as of a K^0 meson with
a $\bar{K}^0$ meson, and also the contribution of transitions
$K^+K^- - - > K^0\bar{K}^0$, and they depend upon the
relative fractions of produced pairs K^0K^0, $\bar{K}^0\bar{K}^0$ and $K^0\bar{K}^0$. It is shown that under the strangeness conservation the correlation functions of the pairs $K^0_S K^0_S$ and $K^0_L K^0_L$, produced in the same inclusive process, coincide, and the difference between the correlation functions of the pairs $K^0_S K^0_S$ and $K^0_S K^0_L$ is conditioned by the production of the pairs of non-identical neutral kaons
$K^0\bar{K}^0$.

Analogous correlations for the pairs of neutral heavy mesons
D^0, B^0 and B^0_s, generated in multiple processes with the charm (beauty) conservation, are analyzed, and differences from the case of neutral K mesons are discussed .

Primary author: Dr LYUBOSHITZ, Valery (Joint Institute for Nuclear Research, Dubna, Russia)

Co-author: Dr LYUBOSHITZ, Vladimir (Joint Institute for Nuclear Research, Dubna, Russia)

Presenter: Dr LYUBOSHITZ, Valery (Joint Institute for Nuclear Research, Dubna, Russia)

Session Classification: Hadronic final states

Track Classification: Hadronic final states

Contribution ID: **18** Type: **not specified**

Spin structure of the ”forward” nucleon charge-exchange reaction n + p —> p + n and the deuteron charge-exchange breakup

Wednesday, 28 March 2012 14:15 (20 minutes)

The structure of the nucleon charge-exchange process
n + p –> p + n is investigated basing on the isotopic
invariance of the nucleon-nucleon scattering. Using the operator
of permutation of the spin projections of the neutron and proton,
the connection between the spin matrices, describing the amplitude
of the nucleon charge-exchange process at zero angle and the
amplitude of neutron elastic scattering on the proton
in the “backward” direction, has been considered. Due to the
optical theorem, the spin-independent part of the differential
cross-section of the process n + p –> p + n at zero
angle for unpolarized particles is expressed through the difference
of total cross-sections of unpolarized proton-proton
and neutron-proton scattering. Meantime, the
spin-dependent part of this cross-section is proportional to the
differential cross-section of the deuteron charge-exchange breakup
d + p –> (pp) + n at zero angle at the deuteron
momentum {\bf k}_d = 2{\bf k}_n ({\bf k}_n is the initial
neutron momentum). Analysis shows that, assuming the real part
of the spin-independent term of the “forward” amplitude of the
process n + p –> p + n to be smaller or of the same
order as compared with the imaginary part, in the wide range of
neutron laboratory momenta k_n > 700 MeV/c the main contribution
into the differential cross-section of the process n + p –> p + n
at zero angle is provided namely by the spin-dependent term .

Primary author: Dr LYUBOSHITZ, Valery (Joint Institute for Nuclear Research, Dubna, Russia)

Co-author: Dr LYUBOSHITZ, Vladimir (Joint Institute for Nuclear Research, Dubna, Russia)

Presenter: Dr LYUBOSHITZ, Valery (Joint Institute for Nuclear Research, Dubna, Russia)

Session Classification: Combined: Diffraction and vector mesons/spin physics

Track Classification: Diffraction and vector mesons/spin physics

Contribution ID: **19** Type: **not specified**

alphas_s status

Monday, 26 March 2012 11:00 (40 minutes)

Presenter: HOANG, Andre

Session Classification: Plenary

Contribution ID: **20** Type: **not specified**

Status of polarised structure functions

Monday, 26 March 2012 11:40 (40 minutes)

Presenter: MARCHAND, Claude (CEA - Centre d'Etudes de Saclay (FR))

Session Classification: Plenary

Contribution ID: **21** Type: **not specified**

Electroweak Precision Measurements and Direct Higgs Searches at the Tevatron

Monday, 26 March 2012 12:20 (40 minutes)

Presenter: WATERS, David (University College London)

Session Classification: Plenary

Contribution ID: **22** Type: **not specified**

QCD and the production of heavy bosons at the Tevatron

Monday, 26 March 2012 14:35 (40 minutes)

Presenter: WOBISCH, Markus (Louisiana Technical University (US))

Session Classification: Plenary

Contribution ID: **23** Type: **not specified**

Precise QCD measurements at HERA

Monday, 26 March 2012 15:15 (40 minutes)

Presenter: DAUM, Karin (University of Wuppertal/DESY)

Session Classification: Plenary

Contribution ID: **24** Type: **not specified**

Theory developments in QCD

Monday, 26 March 2012 15:55 (40 minutes)

Presenter: DE FLORIAN, Daniel (Laboratorio de Fisica Teorica Departamento de Fisica)

Session Classification: Plenary

Contribution ID: **25** Type: **not specified**

Status of Higgs searches at ATLAS; jets+W/Z+top quark production at the LHC

Monday, 26 March 2012 17:00 (40 minutes)

Presenter: KORTNER, Oliver (Max-Planck-Institut fuer Physik (Werner-Heisenberg-Institut) (D)

Session Classification: Plenary

Contribution ID: **26** Type: **not specified**

Quarks and gluons in heavy ion collisions

Monday, 26 March 2012 17:40 (40 minutes)

Presenter: REYGERS, Klaus Johannes (Ruprecht-Karls-Universitaet Heidelberg (DE))

Session Classification: Plenary

Contribution ID: **27** Type: **not specified**

Status of Higgs searches at CMS; new physics searches at the LHC

Monday, 26 March 2012 18:20 (40 minutes)

Presenter: CLERBAUX, Barbara (Universite Libre de Bruxelles (ULB)-Inter-University Institute f)

Session Classification: Plenary

Contribution ID: **28** Type: **not specified**

Single-pion production in neutrino-matter collisions

Thursday, 29 March 2012 11:20 (20 minutes)

In this talk we present the results of the diffractive single-pion production on the protons and nuclei (both for the coherent and incoherent cases). We demonstrate that all the evaluations which are based on Adler relation (AR) are valid only in the region up to 10 GeV, in the regime of short lifetime of heavy hadronic fluctuations. At higher energies, when all the relevant time scales considerably exceed the size of the target, the AR explicitly breaks down on an absorptive target, such as a heavy nucleus. In this regime, close to the black disc limit, the off-diagonal diffractive amplitudes vanish, while the diagonal one, \pi->\pi, which enters the AR, maximizes and saturates the unitarity bound.

Primary author: Dr SIDDIKOV, Marat (UTFSM)

Co-authors: Prof. KOPELIOVICH, Boris (UTFSM); Prof. SCHMIDT, Ivan (UTFSM)

Presenter: Dr SIDDIKOV, Marat (UTFSM)

Session Classification: Diffraction and vector mesons

Track Classification: Diffraction and vector mesons

Contribution ID: **29** Type: **not specified**

Determination of CCFM uPDF with combined HERA data

Tuesday, 27 March 2012 15:25 (20 minutes)

We present a new determination of the un-integrated PDF using
the combined HERA data. We obtain acceptable chi*2/ndf.
We find that for a good description of HERA data the gluon splitting
function including non-singular terms as well as kinematic constraints
and NLO alphas are necessary. We determine for the first time a
full set of uncertainty uPDFs which allow to study the uPDF uncertainty
for processes at HERA and the LHC.
We also show a comparison of predictions using the new uPDFs with
measurements from HERA and the LHC.

Primary author: JUNG, Hannes (Deutsches Elektronen-Synchrotron (DE))

Co-author: HAUTMANN, Francesco (Institute of Theoretical Physics)

Presenter: JUNG, Hannes (Deutsches Elektronen-Synchrotron (DE))

Session Classification: Structure functions

Track Classification: Structure functions

Contribution ID: **30** Type: **not specified**

Transverse single spin asymmetries

Wednesday, 28 March 2012 10:30 (35 minutes)

Large transverse single spin asymmetries (SSAs) of cross sections with a large momentum transfer in high energy collisions were once thought impossible in QCD. With over 30 years of experimental as well as theoretical efforts, large SSAs are not only possible in QCD, but also carry extremely valuable information on the motion and structure of quarks and gluons inside a polarized hadron. In this talk, I will review the physics behind the measured SSAs and the twist-3 mechanism to generate the SSAs. I will also discuss the transition between TMD factorization approach to twist-3 collinear factorization approach to SSAs.

Primary author: Dr QIU, Jian-Wei (Brookhaven National Lab)

Presenter: Dr QIU, Jian-Wei (Brookhaven National Lab)

Session Classification: Spin physics

Track Classification: Spin physics

Contribution ID: **31** Type: **not specified**

Nonlinear equation for coherent gluon emissions

Tuesday, 27 March 2012 17:20 (15 minutes)

Motivated by the explored nowadays at LHC the regime of QCD where both the total energy of collision and momenta transfers are high, we investigate evolution equations of high energy factorization. In order to study such effects like parton saturation in final states one is inevitably lead to investigate how to combine physics of the BK and CCFM evolution equations. In this letter we obtain a new exclusive form of the BK equation which suggests a possible form of the nonlinear extension of the CCFM equation.

Primary author: KUTAK, Krzysztof (I)

Presenter: KUTAK, Krzysztof (I)

Session Classification: Structure functions

Track Classification: Structure functions

Contribution ID: **33** Type: **not specified**

Global Analysis of Nuclear Parton Distributions

Tuesday, 27 March 2012 14:25 (20 minutes)

We present a new global QCD analysis of nuclear parton distribution functions
and their uncertainties. In addition to the most commonly analyzed data sets
for deep inelastic scattering of charged leptons off nuclei and Drell-Yan di-lepton production, we include also measurements for neutrino nuclei scattering as well as inclusive pion production in deuteron gold collisions.
The analysis is performed at next-to-leading order accuracy in perturbative QCD in
a general mass variable flavor number scheme, adopting a current set of free nucleon parton distribution functions, defined accordingly, as reference. The emerging picture is one of consistency, where universal nuclear modification factors for each parton flavor reproduce the main features of all data without any significant tension among the different sets.
We use the Hessian method to estimate the uncertainties of the obtained nuclear modification factors and examine critically their range of validity in view of the sparse kinematic coverage of the present data.
We briefly present several applications of our nuclear parton densities in
hard nuclear reactions at BNL-RHIC, CERN-LHC, and a future electron ion collider.

Primary author: SASSOT, Rodolfo (Universidad de Buenos Aires)

Co-authors: DE FLORIAN, Daniel (Universidad de Buenos Aires); STRATMANN, Marco (Univ. Regensburg/Univ. Wuerzburg); ZURITA, Maria (Buenos Aires University)

Presenter: SASSOT, Rodolfo (Universidad de Buenos Aires)

Session Classification: Structure functions

Track Classification: Structure functions

Contribution ID: **34** Type: **not specified**

Measurement of high-Q2 e+p neutral current cross sections at HERA and determination of the structure function xF3

Tuesday, 27 March 2012 09:00 (20 minutes)

The cross sections for neutral current deep inelastic scattering in e+p collisions with a longitudinally polarised positron beam have been measured using the ZEUS detector at HERA. The single-differential cross-sections dsigma/dQ2, dsigma/dx and dsigma/dy and the double-differential cross sections in Q2 and x are measured in the kinematic region Q2 > 185 GeV2 for both positively and negatively polarised electron beams and for each polarisation state separately. The measurements are based on an integrated luminosity of 136 pb-1 taken in 2006 and 2007 at a centre-of-mass energy of 318 GeV. The structure functions xF_3 and xF_3^{\gammaZ} are determined by combining the e+p results presented in this analysis with previously measured e-p neutral current data. The measured cross sections are compared to the predictions.

Primary author: BEHNKE, Olaf (DESY)

Presenter: JANUSCHEK, Friederike (DESY)

Session Classification: Structure functions

Track Classification: Structure functions

Contribution ID: **35** Type: **not specified**

QCD NLO analysis of inclusive, charm and jet data (HERAPDF 1.7)

Tuesday, 27 March 2012 10:10 (25 minutes)

A preliminary global NLO QCD analysis of the HERA data is presented.
The following data sets are used in this analysis:
the NC and CC inclusive DIS cross sections obtained from the combination of the measurements from H1 and ZEUS based on HERA I and HERA II data at the nominal proton beam energy, the preliminary combined inclusive NC DIS cross sections at reduced proton beam energies,the inclusive jet cross sections from H1 and ZEUS and the preliminary combined HERA results on the structure function F2(charm).

Primary author: BEHNKE, Olaf (DESY)

Presenter: NOWAK, Krzysztof (Deutsches Elektronen-Synchrotron (DE))

Session Classification: Structure functions

Track Classification: Structure functions

Contribution ID: **36** Type: **not specified**

Combined inclusive diffractive cross sections measured with forward proton spectrometers at HERA

Tuesday, 27 March 2012 09:00 (20 minutes)

A combination of the inclusive diffractive cross section measurements made by the H1 and ZEUS Collaborations at
HERA is presented. The analysis uses diffractive deep inelastic scattering data measured by means of proton spectrometers.
Correlations of systematic uncertainties are taken into account by the combination method,resulting in improved precision.
The combined data cover the range 2.5 < Q2 < 200 GeV2 in photon virtualities, 0.00035 < xIP < 0.09 in fractional momentum losses, 0.09 < |t| < 0.55 GeV2 in four momentum transfer at the proton vertex
and 0.0018 < beta < 0.56 in beta = x/xIP, where x is the Bjorken scaling variable.

Presenter: SOLA, Valentina (Universita e INFN (IT))

Session Classification: Diffraction and vector mesons

Track Classification: Diffraction and vector mesons

Contribution ID: **37** Type: **not specified**

Measurement of the t dependence in exclusive photoproduction of Upsilon (1S) mesons at HERA

Wednesday, 28 March 2012 16:00 (20 minutes)

The exclusive photoproduction reaction gamma p -> Upsilon(1S) p has been studied with the ZEUS detector in ep collisions
at HERA using an integrated luminosity of 468pb-1.
The measurement covers the kinematic range 60 < W < 220 GeV and
Q2 < 1 GeV2, where W is the photon–proton centre-of-mass energy
and Q2 is the photon virtuality. The exponential slope, b, of the t dependence of the cross section, where t is the squared four-momentum transfer at the proton vertex, has been measured, yielding b=4.3 +2.0-1.3 (stat.) +0.5-0.6 (syst.) GeV2. This constitutes the first measurement of the t dependence of the gamma p -> Upsilon(1S) p cross section.

Primary author: BEHNKE, Olaf (DESY)

Presenter: CIBOROWSKI, Jacek (University of Warsaw)

Session Classification: Diffraction and vector mesons

Track Classification: Diffraction and vector mesons

Contribution ID: **38** Type: **not specified**

Exclusive Electroproduction of two Pions at HERA

Wednesday, 28 March 2012 16:20 (20 minutes)

The exclusive electroproduction of two pions in the mass range 0.4 < M(pipi) < 2.5 GeV has been studied with the ZEUS detector at HERA using an integrated luminosity of 82 pb-1. The analysis was carried out in the kinematic range of 2 < Q2 < 80 GeV2, 32 < W <180 GeV and |t|<0.6 GeV, where Q2 is the photon virtuality, W is the photon-proton centre-of-mass energy and t is the squared four-momentum transfer at the proton vertex. The two-pion invariant-mass distribution is interpreted in terms of the pion electromagnetic form factor, |F(M(pipi)|, assuming that the studied mass range includes the contributions of the rho, rho' and rho" vector-meson states. The masses and widths of the resonances were obtained and the Q2 dependence of the cross-section ratios sigma(rho'->pipi)\sigma(rho) and sigma(rho"->pipi)/sigma(rho) was extracted. The pion form factor obtained in the present analysis is compared to that obtained in e+e- -> pipi.

Primary author: BEHNKE, Olaf (DESY)

Presenter: Dr TOMASZEWSKA, Justyna (DESY)

Session Classification: Diffraction and vector mesons

Track Classification: Diffraction and vector mesons

Contribution ID: **41** Type: **not specified**

Elastic Z0 production at HERA

Wednesday, 28 March 2012 15:00 (18 minutes)

A search for events ep-> ep Z0 has been performed in ep collisions
at HERA using the ZEUS detector. The search is based on the entire HERA-I and HERA-II data set, amounting to 0.49 fb-1 of integrated luminosity. The Z0 was searched in the di-jet decay mode with elastic condition defined by etamax < 3, where etamax is defined as the pseudorapidity of the energy deposit in the calorimeter closest to the proton beam direction. A di-jet mass peak is observed at the Z0 mass and the number of signal events is extracted from a fit to the mass spectrum. The elastic Z0 production cross section is determined and compared to the SM prediction.

Primary author: NOBE, Takuya (Tokyo Institute of Technology (JP))

Presenter: NOBE, Takuya (Tokyo Institute of Technology (JP))

Session Classification: Combined: Electroweak and searches/structure functions

Track Classification: Electroweak and searches/structure functions

Contribution ID: **42** Type: **not specified**

Scaled Momentum Distributions for K^0_s and Lambda/anti-Lambda in DIS at HER

Wednesday, 28 March 2012 14:50 (20 minutes)

Scaled momentum distributions for the strange hadrons K0s and
Lambda/Lambdabar were measured in deep inelastic ep scattering
with the ZEUS detector at HERA using an integrated luminosity of 330 pb-1. The evolution of these distributions with the photon virtuality,
Q2, was studied in the kinematic region 10 < Q2 < 40000 GeV2 and
0.001 < x < 0.75, where x is the Bjorken scaling variable. Clear
scaling violations are observed. Predictions based on different
approaches to fragmentation were compared to the measurements. Tuned leading-logarithm parton-shower Monte Carlo calculations
interfaced to the Lund string fragmentation model describe the data reasonably well in the whole range measured. Next-to-leading-order QCD calculations based on fragmentation functions, FFs, extracted from e+e- data alone, fail to describe the measurements. The calculations based on FFs extracted from a global analysis including e+e-, ep and pp data give an improved description. The measurements presented in this paper have the potential to further constrain the FFs of quarks, anti-quarks and gluons yielding K0s and Lambda/Lambdabar strange hadrons.

Primary author: ABT, Iris (Werner-Heisenberg-Institut)

Presenter: ABT, Iris (Werner-Heisenberg-Institut)

Session Classification: Hadronic final states

Track Classification: Hadronic final states

Contribution ID: **43** Type: **not specified**

Inclusive-Jet Photoproduction at HERA

Tuesday, 27 March 2012 18:10 (20 minutes)

Differential inclusive-jet cross sections have been measured in photoproduction for boson virtualities Q2 < 1 GeV2 with the ZEUS detector at HERA using an integrated luminosity of 300 pb-1. Jets were identified in the laboratory using the kt cluster algorithm in the longitudinally inclusive mode. Cross sections are presented as functions of the jet pseudorapidity, etajet,and the jet transverse energy, Etjet. In addition, measurements of double-differential
inclusive-jet cross sections are presented as functions of Etjet in different regions of etajet. These cross sections have the potential to constrain the gluon density in the proton and the photon when included as input to fits to extract the proton parton distribution functions. Next-to-leading-order QCD calculations give a good description of the measurements. A value of alphas(Mz) has been extracted from the measurements. The energy-scale dependence of the coupling has also been determined.

Primary author: BEHNKE, Olaf (DESY)

Presenter: PAUL, ewald (P)

Session Classification: Hadronic final states

Track Classification: Hadronic final states

Contribution ID: **44** Type: **not specified**

Isolated photons+jet in DIS

Tuesday, 27 March 2012 09:00 (20 minutes)

Isolated-photon+jet production in ep collisions at a centre-of-mass energy of 318 GeV has been measured with the ZEUS detector at HERA using an integrated luminosity of up to 300 pb-1. Measurements of prompt-photon+jet cross sections are presented as functions of the photon transverse energy and pseudorapidity in a wide range of exchanged-photon virtuality. In addition, differential gamma+jet cross sections are presented as functions of the jet transverse energy and pseudorapidity. Leading-logarithm parton-shower Monte Carlo predictions and perturbative QCD calculations were compared to the data.

Primary author: KUPRASH, Oleg (DESY)

Presenter: KUPRASH, Oleg (DESY)

Session Classification: Hadronic final states

Track Classification: Hadronic final states

Contribution ID: **45** Type: **not specified**

Measurement of charm production in DIS with D* mesons and extraction of F2cc

Wednesday, 28 March 2012 10:30 (18 minutes)

Charm production has been measured with the ZEUS detector
in deep inelastic ep scattering at HERA.
The measurement is based on the full reconstruction of the decay chain
D->*D0pis, D0->Kpi and exploits the full HERA II statistics.*
Differential cross sections have been measured.
The kinematic range is 1.5 GeV < pT(D) < 10GeV, |eta(D*)| < 1.5,*
5 < Q2 < 1000GeV2 and 0.02 < y < 0.7.
The observed cross sections is extrapolated to the full pt(D)
and eta(D*) range in order to determine the open-charm contribution,
F2cc(x,Q2) to the proton structure function, F2.

Primary author: BEHNKE, Olaf (DESY)

Presenter: GIZHKO, Andrii (Kiev University + DESY)

Session Classification: Combined: Heavy flavours/structure functions

Track Classification: Heavy flavours/structure functions

Contribution ID: **46** Type: **not specified**

Charm production in DIS using inclusive secondary vertices and extraction of F2cc

Wednesday, 28 March 2012 10:48 (18 minutes)

Charm production in deep inelastic scattering has been measured with
the ZEUS detector using the full HERA II data set. The charm content in events with a jet has been extracted using the decay length significance and invariant mass of secondary vertices. Differential cross sections as a function of Q2, Bjoerken x, ET(jet) and eta(jet) were measured and compared to theoretical predictions. The open charm contribution to the proton structure function F2 was extracted from double differential cross sections.

Primary author: BEHNKE, Olaf (DESY)

Presenter: LIBOV, Vladislav (DESY)

Session Classification: Combined: Heavy flavours/structure functions

Track Classification: Heavy flavours/structure functions

Contribution ID: **47** Type: **not specified**

Charm fragmentation fractions in Photoproduction

Tuesday, 27 March 2012 14:00 (18 minutes)

The production of D*, D+, D0, Ds and Lambda_c charm hadrons and their antiparticles in ep scattering at HERA was studied with the ZEUS detector using the full HERA II data set. The measurement has been performed in the photoproduction regime. The fractions of c quarks hadronising as a particular charm hadron, f(c -> D, Lambda_c), were derived in the visible kinematic range. The obtained fractions can be compared to previous results from HERA and to measurements from e+e- experiments.

Primary author: BEHNKE, Olaf (DESY)

Presenter: DOLINSKA, Ganna (Kiev University)

Session Classification: Heavy flavours

Track Classification: Heavy flavours

Contribution ID: **49** Type: **not specified**

Transverse Single Spin Asymmetry in ep^\up -> e+J/\psi +X$

Wednesday, 28 March 2012 17:10 (20 minutes)

We discuss the possibility of using electroproduction of J/ψ as a probe of gluon Sivers function by measuring single spin asymmetry in experiments with transversely polarized protons and electron beams.
We estimate SSA for JLab, HERMES, COMPASS and eRHIC energies using color evaporation model of charmonium production and find asymmetry up to 25 % for certain
choices of model parameters which have been
used earlier for estimating SSA in SIDIS and Drell Yan process.

Primary author: Dr MUKHERJEE, Asmita (IIT Bombay)

Co-authors: Dr MISRA, Anuradha (Mumbai University); Dr GODBOLE, Rohini (IISc Bangalore); Mr RAWOOT, Vaibhav (Mumbai University)

Presenter: Dr MUKHERJEE, Asmita (IIT Bombay)

Session Classification: Spin physics

Track Classification: Spin physics

Contribution ID: **50** Type: **not specified**

Constraining quark angular momentum with the Sivers function

Wednesday, 28 March 2012 16:30 (20 minutes)

The determination of quark angular momentum requires the knowledge of the generalized parton distribution E in the forward limit. We assume a connection between this function and the Sivers transverse-momentum distribution, based on model calculations and theoretical considerations. Using this assumption, we show that it is possible to fit at the same time nucleon magnetic moments and semi-inclusive single-spin asymmetries. This imposes additional constraints on the Sivers function and opens a plausible way to quantifying quark angular momentum.

Primary author: BACCHETTA, Alessandro (University of Pavia)

Co-author: RADICI, Marco (INFN)

Presenter: BACCHETTA, Alessandro (University of Pavia)

Session Classification: Spin physics

Track Classification: Spin physics

Contribution ID: **51** Type: **not specified**

Linearly Polarized Gluons and the Higgs Transverse Momentum Distribution

Thursday, 29 March 2012 11:00 (20 minutes)

We investigate the possible role of linearly polarized gluons in Higgs production from unpolarized pp collisions. The angular independent transverse momentum distribution of the produced Higgs boson is found to exhibit a modulation (max 30%) with respect to the naive, unpolarized expectation, with the sign depending on the CP nature of the Higgs boson. The transverse momentum distribution of a scalar Higgs will, therefore, have a shape clearly different from a pseudo-scalar Higgs. We suggest that this effect can be used to determine the parity of the Higgs at the LHC, without the need to use challenging angular distributions of final state particles.

Primary author: Mr DEN DUNNEN, Wilco (VU University Amsterdam)

Co-authors: Dr PISANO, Cristian (Dipartimento di Fisica, Università di Cagliari, and INFN, Sezione di Cagliari); Prof. BOER, Daniel (KVI, University of Groningen); Dr SCHLEGEL, Marc (Universität Tübingen); Prof. VOGELSANG, Werner (Universität Tübingen)

Presenter: Mr DEN DUNNEN, Wilco (VU University Amsterdam)

Session Classification: Spin physics

Track Classification: Spin physics

Contribution ID: **52** Type: **not specified**

A global analysis of diffractive events at HERA

Tuesday, 27 March 2012 11:20 (20 minutes)

We extract diffractive parton distribution functions (DPDFs) and diffractive structure functions from the most recent H1 and ZEUS diffractive DIS data obtained by various methods. We consider Pomeron as an object with parton distribution function, evolving according to the next-to-leading order (NLO) DGLAP equations within the framework of the 'Fixed Flavour Number Scheme' (FFNS). Having performed a global fit analysis, we achieve a very good description of all available measurements by introducing a new set of quark distribution form for the Pomeron. We predict longitudinal and charm proton diffractive structure function as well. Our results are compared with other analysis from the literature.

Primary author: Mrs TAHERI MONFARED, Sara (Semnan university and IPM)

Co-author: Prof. KHORRAMIAN, Ali (Semnan university and IPM)

Presenter: Mrs TAHERI MONFARED, Sara (Semnan university and IPM)

Session Classification: Diffraction and vector mesons

Track Classification: Diffraction and vector mesons

Contribution ID: **53** Type: **not specified**

NLO BFKL jet phenomenology with Lipatov's high energy effective action

Wednesday, 28 March 2012 11:10 (20 minutes)

We report on recent progress in the evaluation of next-to-leading order (NLO) corrections to forward-backward jet observables, using Lipatov's QCD high energy effective action. We calculate both real and virtual corrections to the quark induced forward jet vertex at NLO, making use of a new regularization method and a subtraction mechanism. We also present the real NLO corrections to the quark induced Mueller-Tang jet vertex. Together with the already know virtual corrections it will allow for the construction of the complete NLO Mueller-Tang jet impact factor which is the only missing element for a complete NLO BFKL description of jet events with rapidity gap.

Primary author: Dr HENTSCHINSKI, Martin (IFT UAM/CSIC Madrid)

Presenter: Dr HENTSCHINSKI, Martin (IFT UAM/CSIC Madrid)

Session Classification: Combined: Hadronic final states/diffraction and vector mesons

Track Classification: Hadronic final states/diffraction and vector mesons

Contribution ID: **54** Type: **not specified**

Nonlinear equation for coherent gluon emission

Thursday, 29 March 2012 12:00 (20 minutes)

Motivated by the regime of QCD explored nowadays at LHC where both the total energy of collision and momenta transfers are high, evolution equations of high energy factorization are investigated.
Briefly we overview results obtained so far for proton proton collisions within high energy factorization approach for jet related observables and we give some predictions for proton lead. This results motivate us to study such effects like parton saturation in final states where one is inevitably led to investigate how to combine physics of the BK and CCFM evolution equations. As a result of this study new equations are obtained. A new exclusive form of the BK equation is presented and also an extension of the CCFM equation to account for nonlinearity.

Primary author: Dr KUTAK, Krzysztof (Instytut Fizyki Jadrowej Polskiej Akademii Nauk)

Presenter: Dr KUTAK, Krzysztof (Instytut Fizyki Jadrowej Polskiej Akademii Nauk)

Session Classification: Diffraction and vector mesons

Track Classification: Diffraction and vector mesons

Contribution ID: **55** Type: **not specified**

Interference Fragmentation Functions and Transverse Spin Studies.

Thursday, 29 March 2012 11:40 (20 minutes)

We report on the first extraction of interference fragmentation functions from the semi-inclusive production of two hadron pairs in back-to-back jets in e^+e^- annihilation. A nonzero asymmetry in the correlation of azimuthal orientations of opposite $\pi^+\pi^-$ pairs is related to the transverse polarization of fragmenting quarks through a significant polarized dihadron fragmentation function. A combined analysis of this asymmetry and the spin asymmetry in the SIDIS process $ep^\uparrow \to e'(\pi^+\pi^-)X$ has led to the first extraction of the transversity parton distribution function in the framework of collinear factorization. This result is presented as well.

Primary author: COURTOY, Aurore (IFPA, AGO Dpt., Universite de Liege)

Co-authors: BACCHETTA, Alessandro (University of Pavia); RADICI, Marco (INFN, Sezione di Pavia)

Presenter: COURTOY, Aurore (IFPA, AGO Dpt., Universite de Liege)

Session Classification: Spin physics

Track Classification: Spin physics

Contribution ID: **56** Type: **not specified**

Multidimensional Hadron Attenuation

Wednesday, 28 March 2012 14:30 (20 minutes)

Hadron multiplicity ratios in semi-inclusive deep-inelastic scattering have been measured on neon, krypton and xenon targets relative to deuterium using the 27.6 GeV beam of HERA at the HERMES experiment. They are presented for pions (π+, π-), kaons (K+, K-), protons and anti-protons as a function of the virtual photon energy ν, its virtuality Q2, the fractional hadron energy z and the transverse hadron momentum pt with respect to the direction of the virtual photon. Dependences are presented in a two-dimensional representation, in the form of detailed binning over one variable and three slices over the other variable. These results may help to understand some aspects of the hadronization process.

Primary author: Mr KARYAN, Gevorg (A.I. Alikhanyan National Science Laboratory)

Presenter: Mr KARYAN, Gevorg (A.I. Alikhanyan National Science Laboratory)

Session Classification: Hadronic final states

Track Classification: Hadronic final states

Contribution ID: **58** Type: **not specified**

Measurement of Photon Production in the Very Forward Direction in Deep-Inelastic Scattering at HERA [H1]

Wednesday, 28 March 2012 08:50 (20 minutes)

The production of photons at very small angles with respect to the proton beam direction is studied in deep-inelastic positron-proton scattering at HERA. The data are taken with the H1 detector in the years 2006 and 2007 and correspond to an integrated luminosity of $126\mathrm{pb}^{-1}$. The analysis covers the range of negative four momentum transfer squared at the positron vertex $6 < Q^2 < 100$ GeV^2 and inelasticity $0.05 < y < 0.6$. Cross sections are measured for the most energetic photon with pseudorapidity $\eta > 7.9$ as a function of its transverse momentum p_T^{lead} and longitudinal momentum fraction of the incoming proton x_L^{lead}. In addition, the cross sections are studied as a function of the sum of the longitudinal momentum fraction x_L^{sum} of all photons in the pseudorapidity range $\eta > 7.9$. The cross sections are normalised to the inclusive deep-inelastic scattering cross section and compared to the predictions of models of deep-inelastic scattering and models of the hadronic interactions of high energy cosmic rays.

Presenter: ZOHRABIAN, Hamlet

Session Classification: Combined: Hadronic final states/diffraction and vector mesons

Track Classification: Hadronic final states/diffraction and vector mesons

Contribution ID: **59** Type: **not specified**

Measurement of the Azimuthal Correlation between the most Forward Jet and the Scattered Positron in Deep-Inelastic Scattering at HERA [H1]

Wednesday, 28 March 2012 09:10 (20 minutes)

Deep-inelastic positron-proton scattering events at low photon virtuality Q^2 with a forward jet, produced at small angles with respect to the proton beam, are measured with the H1 detector at HERA. A subsample of events with an additional jet in the central region is also studied. For both samples differential cross sections and normalised distributions are measured as a function of the azimuthal angle difference, Delta phi, between the forward jet and the scattered positron. The sensitivity to QCD evolution mechanisms is tested by comparing the data to predictions of Monte Carlo generators based on different evolution approaches as well as to next-to-leading order calculations.

Primary author: GOERLICH, Lidia (High Energy Department-Henryk Niewodniczanski Inst. Nucl. Physic)

Presenter: GOERLICH, Lidia (High Energy Department-Henryk Niewodniczanski Inst. Nucl. Physic)

Session Classification: Combined: Hadronic final states/diffraction and vector mesons

Track Classification: Hadronic final states/diffraction and vector mesons

Contribution ID: **63** Type: **not specified**

High energy exclusive leptoproduction of the rho-meson: theory and phenomenology

Tuesday, 27 March 2012 15:20 (20 minutes)

Exclusive leptoproduction of vector mesons has been the subject of recent significant progress, both theoretically and experimentally. In particular, the hard regime with a highly virtual photon exchange allows to separate a short distance dominated amplitude of hard subprocess from suitably defined hadronic objects. However, a consistent picture is still missing, in particular for contributions to the scattering amplitude beyond the leading power in the photon virtuality.

We recently described the hard production of transversally polarized rho-meson, up to twist 3 accuracy, including 2- and 3- particles Fock-states, in the HERA kinematics of high center-of-mass energy. Furthermore, we
here show how saturation effects could be included in our model. This is based on the dipole representation of the scattering amplitude in coordinate space, which we extend up to twist 3, based on our previous studies of the scattering amplitude in momentum space.
We compare our model with H1 and ZEUS data for the ratios of helicity amplitudes T(gamma*T* -> *rhoT)/T(gamma*L -> rhoL) and
T(gamma*T* -> *rhoL)/T(gamma*L -> rhoL) and get a good description of the data.

Primary author: BESSE, Adrien (L)

Co-authors: SZYMANOWSKI, Lech (Soltan Institute for Nuclear Studies); Dr WALLON, Samuel (LPT and UPMC)

Presenter: BESSE, Adrien (L)

Session Classification: Diffraction and vector mesons

Track Classification: Diffraction and vector mesons

Contribution ID: **64** Type: **not specified**

Fragmentation functions at Belle

Wednesday, 28 March 2012 09:30 (25 minutes)

Fragmentation functions (FFs) describe the formation of final state particles from a partonic initial state. Precise knowledge of these functions is a key ingredient in accessing quantities such as the nucleon spin structure in semi-inclusive deep inelastic scattering and proton proton collisions. However, fragmentation functions can currently not be determined from first principles Quantum Chromodynamics and have to be extracted from experimental data. The Belle experiment at KEK, Japan, provides a large data sample for high precision measurements of quantities allowing for first-time or more precise extractions of fragmentation functions. Completed and ongoing analyses for extractions of spin-independent (unpolarized FFs) as well as spin-dependent fragmentation functions (Collins and Interference FFs) at Belle will be presented.

Primary author: Mr LEITGAB, Martin (University of Illinois at Urbana-Champaign)

Co-authors: Mr OGAWA, Akio (BNL); Mr VOSSEN, Anselm (Indiana University Bloomington); Mrs HULSE, Charlotte (The University of the Basque Country); Mrs GIORDANO, Francesca (University of Illinois at Urbana-Champaign); Mr SCHNELL, Gunar (The University of the Basque Country); Mr GROSSE PERDEKAMP, Matthias (University of Illinois at Urbana-Champaign); Mr KOBAYASHI, Noriaki (Tokyo Institute of Technology); Mr SEIDL, Ralf (RIKEN); Mr SHIBATA, Toshi-Aki (Tokyo Institute of Technology); Mr MIYACHI, Yoshiyuki (Tokyo Institute of Technology)

Presenter: Mr LEITGAB, Martin (University of Illinois at Urbana-Champaign)

Session Classification: Spin physics

Track Classification: Spin physics

Contribution ID: **65** Type: **not specified**

Charmonium results at Belle

Wednesday, 28 March 2012 15:00 (18 minutes)

We present recent results on charmonium and charmonium-like states studied by the Belle experiment at the KEK-B e+e- collider.
After years of interesting discoveries in the field of hadron spectroscopy, Belle continues the research by measuring new final states produced in various processes accessible at the B-Factories.
Main motivation is to complete the spectrum of charmonia predicted by QCD and to investigate the nature of so called X,Y,Z states.

Primary author: BRODZICKA, Jolanta (INP Krakow)

Presenter: BRODZICKA, Jolanta (INP Krakow)

Session Classification: Heavy flavours

Track Classification: Heavy flavours

Contribution ID: **66** Type: **not specified**

Bottomonium(-like) states at Belle

Wednesday, 28 March 2012 16:00 (18 minutes)

The Belle collaboration recently reported the discovery of the p-wave
Bottomonium singlets, hb(1P) and hb(2P), the surprising observation of
resonant substructure in Y(5S) −> pi+pi-Y(nS), hb(mP) (n=1-3, m=1,2), and the first observation of
the radiative transition hb(1P) −> gamma
etab(1S) in 121.4 1/fb of data collected near the Upsilon(5S) resonance
at the KEKB asymmetric-energy e^+e^- collider. We report further studies
performed at this energy.

Primary author: BRODZICKA, Jolanta (INP Krakow)

Presenter: TAMPONI, Umberto (Torino)

Session Classification: Heavy flavours

Track Classification: Heavy flavours

Contribution ID: **68** Type: **not specified**

Timelike Compton Scattering - new theoretical results and experimental possibilities

Thursday, 29 March 2012 09:20 (30 minutes)

Generalized Parton Distributions (GPDs) offer a new way to access the quark and gluon nucleon structure. We advocate the need to supplement the experimental study of deeply virtual Compton scattering by its crossed version, timelike Compton scattering (TCS) i.e. the exclusive photoproduction of a lepton pairs with large invariant mass. We review recent progress in this domain, in particular the need to include NLO corrections to any phenomenological program to extract GPDs from experimental data. We also stress that data on TCS at high energy should be available soon thanks to the proposed experimental program at JLab at 12 GeV, and study of ultraperipheral collisions at RHIC and LHC which opens a window on quark and gluon GPDs at very small skewness.

Primary author: WAGNER, Jakub (National Center for Nuclear Research)

Co-authors: PIRE, Bernard (ecole polytechnique CNRS); SZYMANOWSKI, Lech (National Center for Nuclear Research)

Presenter: WAGNER, Jakub (National Center for Nuclear Research)

Session Classification: Spin physics

Track Classification: Spin physics

Contribution ID: **69** Type: **not specified**

HERMES latest results on phi meson spin density matrix elements

Wednesday, 28 March 2012 09:05 (25 minutes)

The HERMES experiment at DESY, Hamburg collected a set of data on hard exclusive vector meson (rho,phi,omega) leptoproduction using the 27.6 GeV self-polarized lepton beam of HERA accelerator and longitudinally or transversely polarized or unpolarized gas target. The latest results on spin density matrix elements of exclusive phi meson production using the full statistics collected at HERMES, are presented. Conclusions on the helicity amplitudes, which are related to spin density matrix elements, are also presented.

Primary author: GOLEMBIOVSKAYA, Mayya (DESY)

Presenter: GOLEMBIOVSKAYA, Mayya (DESY)

Session Classification: Spin physics

Track Classification: Spin physics

Contribution ID: **71** Type: **not specified**

Inclusive jet production measured with ATLAS, and constraints on PDFs

Thursday, 29 March 2012 09:20 (20 minutes)

Inclusive jet and dijet double-differential cross sections have been measured in proton-proton collisions at a centre-of-mass energy of 7 TeV using the ATLAS detector. The cross sections were measured using jets clustered with the anti-kT algorithm. The measurements are performed in the jet
rapidity range |y|<4.4, covering jet transverse momenta from 20 GeV to 1.5 TeV and dijet invariant masses
from 70 GeV to 5 TeV. The data are compared to expectations based on next-to-leading order QCD calculations
corrected for non-perturbative effects, as well as to next-to-leading order Monte Carlo predictions. In addition to a test of the theory in a new kinematic regime, the data also provide sensitivity to parton distribution functions in a region where they are currently not well-constrained.

Primary author: Prof. OREGLIA, Mark (University of Chicago (US))

Presenter: Dr MALAESCU, Bogdan (CERN)

Session Classification: Combined: Hadronic final states/structure functions

Track Classification: Hadronic final states/structure functions

Contribution ID: **72** Type: **not specified**

Diffraction and rapidity gap measurements with ATLAS

Thursday, 29 March 2012 09:40 (20 minutes)

Transverse energy distributions and regions of low activity in proton-proton scattering events are sensitive to soft physics, low x and diffractive processes, and have been measured in inclusive "minimum bias" scatters as well as in dijet events at sqrt(s) = 7 TeV. In the inclusive analysis, cross sections are measured differentially in terms of Delta eta F, the larger of the pseudorapidity regions
extending to the limits of the ATLAS sensitivity, in which no final state particles are produced above
a transverse momentum threshold p_T Cut. The measurements span the
region 0 < Delta eta F < 8 for 200 < p_T Cut < 800 MeV. The data are used to constrain the value of the pomeron intercept appropriate to triple Regge models of soft diffraction, and the cross section
integrated over all gap sizes is compared with other LHC inelastic cross section measurements. The dijet measurements study jet activity in the rapidity
interval bounded by a dijet system, as well as in the forward region. Differential distributions are compared to various QCD calculations including different approximations for gluon radiation.

Primary author: Prof. OREGLIA, Mark (University of Chicago (US))

Presenter: RUZICKA, Pavel (Acad. of Sciences of the Czech Rep. (CZ))

Session Classification: Diffraction and vector mesons

Track Classification: Diffraction and vector mesons

Contribution ID: **73** Type: **not specified**

Search for R-partity violating SUSY signatures with the ATLAS detector

Wednesday, 28 March 2012 09:24 (18 minutes)

Searches for supersymmetry at the LHC also embrace signatures from R-parity violating processes. These can be final states with resonant or non-resonant lepton flavour violation or multiple leptons. The talk presents recent results from searches for R-partity violation in events containing leptons based on data recorded in 2011 by the ATLAS detector.

Primary author: Prof. OREGLIA, Mark (University of Chicago (US))

Presenter: MEYER, Carsten Peter (Johannes-Gutenberg-Universitaet Mainz (DE))

Session Classification: Electroweak and searches

Track Classification: Electroweak and searches

Contribution ID: **74** Type: **not specified**

Searches for Beyond-Standard Model Higgs boson at ATLAS

Tuesday, 27 March 2012 11:36 (18 minutes)

The discovery of a neutral Higgs boson with large decay branching fraction to tau and muon pairs, as well as the discovery of a charged Higgs boson would represent a strong evidence of new physics beyond the Standard Model. The experimental results of the searches for the Higgs bosons beyond the Standard Model with the ATLAS detector are reported. The searches are based on an integrated luminosity of up to 4.9 fb-1 of proton-proton collision data recorded at the Large Hadron Collider (LHC) at a centre-of-mass energy of 7 TeV. Exclusion limits on production cross-sections are given as function of the Higgs boson mass and are analyzed in the framework of the minimal supersymmetric model.

Primary author: Prof. OREGLIA, Mark (University of Chicago (US))

Presenter: LENZI, Bruno (CERN)

Session Classification: Electroweak and searches

Track Classification: Electroweak and searches

Contribution ID: **75** Type: **not specified**

Search for the Standard Model Higgs boson at ATLAS

Tuesday, 27 March 2012 09:18 (24 minutes)

The experimental results of the search for the Standard Model Higgs boson at the Large Hadron Collider (LHC) running at a centre-of-mass energy of 7 TeV are reported, based on a total integrated luminosity of up to 4.9 fb-1 collected by the ATLAS detector in 2011. The search combines several Higgs boson decay channels in the mass range from 110 GeV to 600 GeV and derives upper limits on the production cross section as a function of the Higgs boson mass. A wide range of Higgs boson mass hypotheses is excluded at a 95% confidence level. Some excess of events is also reported.

Primary author: Prof. OREGLIA, Mark (University of Chicago (US))

Presenter: Dr MAL, Prolay Kumar (CEA - Centre d'Etudes de Saclay (FR))

Session Classification: Electroweak and searches

Track Classification: Electroweak and searches

Contribution ID: **76** Type: **not specified**

Measurements of W/Z production with the ATLAS detector

Wednesday, 28 March 2012 16:18 (18 minutes)

W and Z boson production have been measured in the electron, muon and tau decay channels. Total and differential cross sections, defined in terms of the decay lepton kinematics, have been measured as a function of rapidity and transverse momentum. Ratios of the cross sections demonstrate sensitivity to lepton universality, and the kinematic distributions constrain parton densities and QCD calculations including resummations of soft gluon radiation, and the matching of NLO matrix elements or high multiplicity tree-level matrix elements to parton shower approximations. The polarisation of W bosons is also measured, as, for the first time,
is the polarisation of the tau lepton in W−>tau nu decays.

Primary author: Prof. OREGLIA, Mark (University of Chicago (US))

Presenter: SAUVAN, Jean-Baptiste (Universite de Paris-Sud 11 (FR))

Session Classification: Combined: Electroweak and searches/structure functions

Track Classification: Electroweak and searches/structure functions

Contribution ID: **77** Type: **not specified**

Measurements of dibosons with the ATLAS detector and associated constraints on new physics

Wednesday, 28 March 2012 13:48 (18 minutes)

Diboson cross sections have been measure for all combinations of W,Z and isolated photons. The cross
sections are measured in kinematic regions defined by the decay kinematics, in some cases including vetoes on additional jets. The measurements are also extrapolated to the full phase space using
theoretical calculations of the acceptance, and are additionally used to place contsraints on triple-gauge boson couplings.

Primary author: Prof. OREGLIA, Mark (University of Chicago (US))

Presenter: SKOTTOWE, Hugh (Harvard University (US))

Session Classification: Combined: Electroweak and searches/structure functions

Track Classification: Electroweak and searches/structure functions

Contribution ID: **78** Type: **not specified**

Search for supersymmetry in events involving third generation squarks and sleptons with ATLAS

Wednesday, 28 March 2012 10:48 (18 minutes)

Supersymmetry with large mixing between left and right scalar fermions predicts that the lightest partners of the SM fermions belong to the third generation. Moreover, naturalness arguments favour stop masses not too far from that of the top quark. The talk presents results from searches for gluino mediated sbottom and stop production, direct sbottom production, and gluino and squark mediated stau production using data recorded with the ATLAS detector in 2011.

Primary author: Prof. OREGLIA, Mark (University of Chicago (US))

Presenter: CHAVEZ BARAJAS, Carlos (CERN)

Session Classification: Electroweak and searches

Track Classification: Electroweak and searches

Contribution ID: **79** Type: **not specified**

Measurements of jet production in pp collisions with the ATLAS detector

Tuesday, 27 March 2012 11:40 (20 minutes)

Differential jet cross sections and distributions have been measure inclusively, in dijet events and in multijet events, using information from the ATLAS calorimeters and tracking detectors. The inclusive
jet measurements extend from 20 GeV to 1.5 TeV, and the dijet measurements cover a very wide mass range.
Measurements based on tracking alone are sensitive only to the charged-particle content of the jet, but
all accurate measurements down to low transverse momentum, where the onset of hard scattering can be studied
as jets emerge from some scattering events. A wide range of QCD-based calculations is confronted with the
data, ranging from soft physics models the high multiplicity partonic matrix elements and NLO QCD calculations
matched to parton shower simulations, testing the understand of QCD in a new kinematic range.

Primary author: YURKEWICZ, Adam (Northern Illinois University (US))

Presenter: YURKEWICZ, Adam (Northern Illinois University (US))

Session Classification: Hadronic final states

Track Classification: Hadronic final states

Contribution ID: **80** Type: **not specified**

Studies of jet shapes and substructure with ATLAS

Wednesday, 28 March 2012 16:00 (20 minutes)

The internal structure of jets produced in proton-proton collisions at 7 TeV centre-of-mass energy provides a direct test of QCD calculations of gluon and quark radiation, as well as having sensitivity to hadronisation and underlying event. The transverse energy distribution around the jet core has been measured,
as well as the fragmentation of a jet into charged particles. Jet shapes - including the jet mass - and jet substructure have the potential to identify jets coming from massive, boosted particles decaying
hadronically. Techniques have also been developed for reducing the sensitivity of jet physics to soft
QCD and to multiple proton-proton collisions. A selection of such variables is also measured and compared
to a range QCD calculations and phenomenological models.

Primary author: DAVISON, Adam Robert (University College London (UK))

Presenter: DAVISON, Adam Robert (University College London (UK))

Session Classification: Hadronic final states

Track Classification: Hadronic final states

Contribution ID: **81** Type: **not specified**

Photon and photon+jet production measured with the ATLAS detector

Tuesday, 27 March 2012 10:00 (20 minutes)

Isolated prompt photons provide a direct probe of short-distance physics, complementary to that provided by measurements of jets or vector-bosons. The inclusive prompt photon cross section has been measured over a wide range of transverse momenta; the diphoton cross section has also been measured as a function of diphoton mass, total transverse momentum and azimuthal separation; the cross section for photons produced in association with jets is also measured.
The results use data to suppress backgrounds, and also to remove the effects of underlying event and
multiple proton-proton interactions in a theoretically well-controlled manner. The results are compared to the predictions of next-to-leading-order QCD.

Primary author: CARMINATI, Leonardo (Università degli Studi e INFN Milano (IT))

Presenter: CARMINATI, Leonardo (Università degli Studi e INFN Milano (IT))

Session Classification: Hadronic final states

Track Classification: Hadronic final states

Contribution ID: **82** Type: **not specified**

Studies of vector boson+jet production with ATLAS

Tuesday, 27 March 2012 14:40 (20 minutes)

The production of jets in association with a W or Z boson in proton-proton collisions at 7 TeV is an important process to understand in QCD. The cross section, differential in several kinematics variables,
has been measured up to high jet multiplicities and compared to new higher-order QCD calculations. The ratio
of (Z + a single jet)/(W + a single jet) can provide a very precise test of QCD and has also been measured. In addition, the cross sections for vector bosons produced with bottom jets, Z+b-jet and W+b-jet,
have been measured and compared to NLO QCD calculations. Overall, the cross sections demonstrate the need for the
inclusion of higher-multiplicity matrix elements in the calculations, even in cases where a parton shower
simulation is present.

Primary author: BELANGER-CHAMPAGNE, Camille (McGill University (CA))

Presenter: BELANGER-CHAMPAGNE, Camille (McGill University (CA))

Session Classification: Hadronic final states

Track Classification: Hadronic final states

Contribution ID: **83** Type: **not specified**

Minimum bias and underlying event studies

Thursday, 29 March 2012 11:20 (20 minutes)

The majority of proton-proton collisions at the LHC contain only soft, low transverse-momentum scatters. Such
scatters also occur between the remnants of the protons in conjunction with short-distance, high momentum
scatters. Measurements of soft particle production and energy flow are presented fir a wide range of different
kinematic selections; correlations between the produced particles, and identified strange particles, are also studied. The energy flow and charged-particle distributions accompanying hard scatters are also
measured. The measurements are compared to current Monte Carlo simulations and used to tune the
parameters and suggest improved physics models.

Primary author: Dr MORAES, Arthur (University of Glasgow (GB))

Presenter: Dr MORAES, Arthur (University of Glasgow (GB))

Session Classification: Hadronic final states

Track Classification: Hadronic final states

Contribution ID: **84** Type: **not specified**

Quarkonium Production in ATLAS

Wednesday, 28 March 2012 11:30 (18 minutes)

The production of Quarkonium is an important testing ground for QCD calculations. The J/psi and Upsilon production cross-sections are measured in proton-proton collisions at the ATLAS detector. Differential cross sections as a function of transverse momentum and pseudorapidity will be presented. The fraction of J/\psi produced in B-hadron decays are also measured and the differential production cross-sections of prompt and non-prompt J/\psi determined separately. Results are compared to predictions from perturbative QCD calculations.

Primary authors: Prof. OREGLIA, Mark (University of Chicago (US)); CHEATHAM, Susan (McGill University (CA))

Presenter: CHEATHAM, Susan (McGill University (CA))

Session Classification: Heavy flavours

Track Classification: Heavy flavours

Contribution ID: **86** Type: **not specified**

Heavy Flavour Production in ATLAS

Tuesday, 27 March 2012 09:18 (18 minutes)

ATLAS has studied heavy flavour production in a variety of decay channels and inclusive signatures including charmed mesons, jets originating from b-quarks and inclusive muons and electrons. Differential production cross sections for beauty and charm are extracted from these signatures and compared with a variety of theoretical predictions.

Primary authors: BARTON, Adam Edward (Lancaster University (GB)); Prof. OREGLIA, Mark (University of Chicago (US))

Presenter: BARTON, Adam Edward (Lancaster University (GB))

Session Classification: Heavy flavours

Track Classification: Heavy flavours

Contribution ID: **88** Type: **not specified**

Measurements with ATLAS detector of jets containing charm and bottom quarks

Tuesday, 27 March 2012 11:36 (18 minutes)

The inclusive and dijet production cross-sections have been measured for jets containing b-hadrons (b-jets)
in proton-proton collisions at a centre-of-mass energy of sqrt(s) = 7 TeV.
The b-jets are identified using either a lifetime-based method, where secondary decay vertices of b-hadrons in jets are reconstructed using information from the tracking detectors, or a muon-based method where the presence of a muon is used to identify semileptonic decays of b-hadrons inside jets.
The inclusive b-jet cross-section is measured as a function of transverse momentum.
The bbbar-dijet cross-section is measured as a function of the dijet invariant mass, the azimuthal angle
difference between the two jets, and the angular variable chi in two dijet mass regions.
The results are compared to next-to-leading-order QCD predictions. D+/- *meson production in jets is also*
measured. D+/- mesons found in jets are fully reconstructed in the decay chain:
D*+ -> D0pi+, D0 -> K-pi+, and its charge conjugate.

Primary authors: CALVET, David (Univ. Blaise Pascal Clermont-Fe. II (FR)); Prof. OREGLIA, Mark (University of Chicago (US))

Presenter: CALVET, David (Univ. Blaise Pascal Clermont-Fe. II (FR))

Session Classification: Heavy flavours

Track Classification: Heavy flavours

Contribution ID: **89** Type: **not specified**

ATLAS: Top quark pair production cross-section

Tuesday, 27 March 2012 14:54 (18 minutes)

We present measurements of the production of top quarks in proton-proton collisions at 7 TeV with the ATLAS detector at the Large Hadron Collider. The cross section of pair-produced top quarks is measured in several channels, including the single lepton, dilepton and all hadronic channel, some using information from b-tagging.

Primary authors: SHAW, Kate (Abdus Salam Int. Cent. Theor. Phys. (IT)); Prof. OREGLIA, Mark (University of Chicago (US))

Presenter: SHAW, Kate (Abdus Salam Int. Cent. Theor. Phys. (IT))

Session Classification: Heavy flavours

Track Classification: Heavy flavours

Contribution ID: **90** Type: **not specified**

Measurements of single top quark production at ATLAS

Thursday, 29 March 2012 09:18 (18 minutes)

We present the result of a measurement of single top-quark production in the t-channel at 7 TeV proton-proton collisions with the ATLAS detector at the Large Hadron Collider. A lower limit on the CKM matrix element |Vtb| is extracted from this measurement. The single-top quark production in the Wt- and s-channels is also explored.

Primary authors: Prof. OREGLIA, Mark (University of Chicago (US)); BELL, William (Unknown); BELL, William Hamish (Universite de Geneve (CH))

Presenters: BELL, William (Unknown); BELL, William Hamish (Universite de Geneve (CH))

Session Classification: Combined: Electroweak and searches/heavy flavours

Track Classification: Electroweak and searches/heavy flavours

Contribution ID: **91** Type: **not specified**

ATLAS top quark mass measurement

Tuesday, 27 March 2012 16:30 (18 minutes)

We present a measurement of the top-quark mass in proton-proton collisions at 7 TeV with the ATLAS detector at the Large Hadron Collider. The top mass is determined by making use of a two-dimensional template method in the single lepton channel. An indirect extraction of the top-quark mass from the measurement of the cross-section is also presented.

Primary authors: JUNG, Christian Andreas (TU Dortmund); JUNG, Christian Andreas (Technische Universitaet Dortmund (DE)); Prof. OREGLIA, Mark (University of Chicago (US))

Presenters: JUNG, Christian Andreas (TU Dortmund); JUNG, Christian Andreas (Technische Universitaet Dortmund (DE))

Session Classification: Heavy flavours

Track Classification: Heavy flavours

Contribution ID: **95** Type: **not specified**

The statistical model for parton distributions

Tuesday, 27 March 2012 17:35 (20 minutes)

First we recall the basic physical features of the parton distribution functions (PDF) in the quantum statistical approach of the nucleon. Several predictions from next-to-leading QCD calculations using these PDF are compared with recent experimental results: deep inelastic scattering from HERA, hadronic reactions from Tevatron and RHIC, neutrino data and also polarized data obtained by Compass at CERN and by the polarized pp collider at BNL.

Primary author: Prof. SOFFER, Jacques (Temple University, Philadelphia, PA, USA)

Presenter: BUCCELLA, Franco (Unknown)

Session Classification: Structure functions

Track Classification: Structure functions

Contribution ID: **96** Type: **not specified**

A new approach to hadron multiplicity ratio

Thursday, 29 March 2012 10:20 (20 minutes)

We present a new approach in considering and including the perturbative and non-perturbative contributions to the gluon-quark multiplicity ratio. The new method is motivated by new developments in timelike small x resummation and exploit the recently computed NNLO timelike splitting fnctions. Comparison of our new results with other methods and with data will also be presented.

Primary author: BOLZONI, Paolo (DESY)

Presenter: BOLZONI, Paolo (DESY)

Session Classification: Combined: Hadronic final states/structure functions

Track Classification: Hadronic final states/structure functions

Contribution ID: **97** Type: **not specified**

Using the BFKL resummation to fit DIS data: collinear and running coupling effects

Tuesday, 27 March 2012 15:05 (20 minutes)

The proton structure function F_2 is studied in the low x regime using BFKL evolution instead of the usual DGLAP approach,
suited for large values of the DIS x variable. The NLL analysis requires the inclusion of running coupling effects which lead to
off-diagonal terms in the BFKL kernel that need to be treated carefully. We also introduce an all-orders resummation that improves
the collinear behavior of the NLL BFKL result. This study is presented emphasizing the theoretical uncertainties that appear throughout
the analysis and a comparison with the combined HERA data is given.

Primary authors: SABIO VERA, Agustin; SALAS, Clara (IFT, Madrid); CHACHAMIS, Grigorios (Paul Scherrer Institut); HENTSCHINSKI, Martin (Autonoma University Madrid/CSIC)

Presenter: SALAS, Clara (IFT, Madrid)

Session Classification: Structure functions

Track Classification: Structure functions

Contribution ID: **98** Type: **not specified**

Imaging partons using exclusive scattering processes

Wednesday, 28 March 2012 13:30 (25 minutes)

The spatial distribution of partons in the proton or a nucleus can be probed in suitable exclusive scattering processes. I review the theoretical foundation and the physics interest of this idea, and I report on recent performance estimates for parton imaging in the proton at an Electron-Ion collider.

Primary author: DIEHL, Markus (DESY)

Presenter: DIEHL, Markus (DESY)

Session Classification: Combined: Diffraction and vector mesons/spin physics

Track Classification: Diffraction and vector mesons/spin physics

Contribution ID: **100** Type: **not specified**

Pion and Kaon multiplicities from muon-deuteron deep inelastic scattering at COMPASS

Wednesday, 28 March 2012 14:10 (20 minutes)

Fragmentation functions, which turn partons into non-perturbative hadronic bound states in hard-scattering reactions, play a very important role in our understanding of the proton structure. Currently, our knowledge of fragmentation functions originates mainly from existing global QCD analyses which are mostly based on inclusive measurements in electron-positron annihilation process. While the latter mainly fixes the flavour singlet combinations of fragmentation functions, semi-inclusive deep inelastic scattering gives access to the flavour structure of FFs via hadron multiplicities. The COMPASS collaboration has recently measured pion and kaon multiplicities, in different combinations of bins in x, z and Q2, using 160 GeV/c muons off deuteron target. This measurement makes an experimental contribution for a deeper understanding on the fragmentation process.

Primary author: Ms MAKKE, Nour (Trieste UNiversity, INFN)

Presenter: Ms MAKKE, Nour (Trieste UNiversity, INFN)

Session Classification: Hadronic final states

Track Classification: Hadronic final states

Contribution ID: **105** Type: **not specified**

ePHENIX for eRHIC

Wednesday, 28 March 2012 15:05 (20 minutes)

Addition of a high intensity polarized electron beam facility which could realize Deep Inelastic Scattering (DIS) research with one of the RHIC beams is one of the future upgrades to the Relativistic Heavy Ion Collider (RHIC) presently under consideration. To take a full advantage of such machine evolution, after more than a decade of exciting physics results, both with heavy ion and polarized proton collisions, PHENIX Collaboration has launched a detector upgrade study consistent with the above collider upgrades, going in to the eRHIC era. We discuss a staged approach of the PHENIX upgrade program and physics topics we plan to address with the e-p and e-A collisions at eRHIC.

Primary author: BAZILEVSKY, Alexander (B)

Presenter: BAZILEVSKY, Alexander (B)

Session Classification: Future of DIS

Track Classification: Future of DIS

Contribution ID: **107** Type: **not specified**

TMD Theory Overview

Tuesday, 27 March 2012 11:00 (35 minutes)

Transverse momentum dependent (TMD) distribution and fragmentation functions are described as Fourier transforms of matrix elements containing non-local combinations of quark and gluon fields. While the collinear functions are light-cone correlators in which the non-locality is restricted along the light-cone, the transverse momentum dependent functions are light-front correlators including a transverse (space-like) separation away from the light-cone. In the matrix elements the time-ordering is superfluous and they are parts of the full (squared) amplitudes that account for the connections to the hadrons (soft parts).

The collinear (x-dependent) parton (quark or gluon) distribution functions (PDF's) that appear in the parameterization of collinear leading-twist correlators are interpreted as momentum densities including polarized parton densities in polarized hadrons. They involve only spin-spin densities and they do not allow for a description of single-spin asymmetries in high-energy scattering processes at leading 1/Q order in the hard scale Q.

TMD (x and pT-dependent) PDF's that appear in the parameterization of TMD correlators include spin-spin as well as momentum-spin correlations and they are able to describe single-spin and azimuthal asymmetries, such as Sivers and Collins effects in semi-inclusive deep inelastic scattering (SIDIS), but there are many open issues on pT-factorization. Upon taking moments in pT (or taking Bessel weights) the correlators involve higher-twist operators, but evaluated at zero-momentum (gluonic pole matrix elements). They can be incorporated in a 'generalized' factorization scheme with specific gluonic pole factors such as the sign in SIDIS versus Drell-Yan, which can be traced back to having TMD's with non-trivial process-dependent past- or future-pointing gauge links appearing in the light-front separated, non-local operator combinations.

Primary author: MULDERS, Piet J (VU University)

Presenter: MULDERS, Piet J (VU University)

Session Classification: Spin physics

Track Classification: Spin physics

Contribution ID: **108** Type: **not specified**

Recent Results of Double Helicity Asymmetries at PHENIX

Tuesday, 27 March 2012 09:35 (25 minutes)

The determination of the gluon polarization within the proton, ΔG, is one of the critical pieces to understanding the proton spin puzzle. Using collisions of polarized protons with $\sqrt{s} = 200\ GeV$ and $\sqrt{s} = 500\ GeV$ at the Relativistic Heavy Ion Collider (RHIC), PHENIX can access gluons and ΔG at leading order. Constraints on ΔG come from measurements of double longitudinal asymmetries, A_{LL}, of various particle production cross sections. We will present the recent A_{LL} results at central ($|\eta| < 0.35$) and forward ($3.1 < |\eta| < 3.9$) rapidities along with comparisons to various models of the gluon polarization. A summary of the current issues limiting the precision of these measurements will follow. Finally, we will discuss the possibilities in the near to mid-term future of the PHENIX ΔG program, specifically, constraining ΔG at low-x.

Primary author: Mr WOLIN, Scott (University of Illinois at Urbana-Champaign)

Presenter: Mr WOLIN, Scott (University of Illinois at Urbana-Champaign)

Session Classification: Spin physics

Track Classification: Spin physics

Contribution ID: **109** Type: **not specified**

Luminosity Measurement at HERA with Elastic QED Compton Events

Tuesday, 27 March 2012 09:20 (20 minutes)

At HERA, deep inelastic scattering progresses have been studied in order to probe the fundamental forces predicted by the standard model and the structure of the proton. One of the most fundamental processes is the elastic production of photons, e p -> e p gamma. For the case where the momentum transfer at the proton vertex is small, but both the electron and the photon have significant transverse momentum, the process is referenced as elastic QED Compton scattering. This process has the feature that it may be calculated at high precision in the framework of perturbative QED, and experimental background from other processes, like deeply-virtual Compton scattering, is small. In this analysis, the rate of elastic QED Compton events together with the cross section predicted from QED in used to measure the integrated luminosity of H1 datasets. The results are compared to default measurements of the integrated luminosity using Bethe-Heitler events.

Primary author: PLACAKYTE, Ringaile (Deutsches Elektronen-Synchrotron (DE))

Presenter: SCHMITT, Stefan (Ruprecht-Karls-Universitaet Heidelberg (DE))

Session Classification: Structure functions

Track Classification: Structure functions

Contribution ID: **112** Type: **not specified**

Cross Section for High-p_T Hadron Production in Muon-Deuteron Scattering at $\sqrt{s} = 17.4$\,GeV

Thursday, 29 March 2012 12:00 (20 minutes)

Lepton-nucleon scattering experiments are performed to investigate the (spin-)structure of nucleons. The theoretical framework for the interpretation of such measurements is perturbative QCD (pQCD). In this contribution we present the measurement of the cross section for the quasi-real photoproduction of charged hadrons with high transverse momenta in muon-deuteron scattering at COMPASS ($\sqrt{s} = 17.4$\,GeV). Furthermore, the dependence of the cross section on pseudo-rapidity and the hadron charge is discussed. The results are compared to recent next-to-leading (NLO) pQCD calculations to evaluate the applicability of pQCD to this process at COMPASS energies.

Primary author: HOEPPNER, Christian (Technische Universitaet Muenchen (DE))

Presenter: HOEPPNER, Christian (Technische Universitaet Muenchen (DE))

Session Classification: Spin physics

Track Classification: Spin physics

Contribution ID: **113** Type: **not specified**

Recent STAR results and future prospects of the W boson program at RHIC at BNL

Tuesday, 27 March 2012 16:30 (30 minutes)

The STAR experiment at the Relativistic Heavy-Ion Collider at Brookhaven National Laboratory is carrying out a spin physics program in high-energy polarized proton collisions at $\sqrt{s} = 200$ GeV and $\sqrt{s} = 500$ GeV to gain a deeper insight into the spin structure and dynamics of the proton. The completion of the first $\sqrt{s} = 500$ GeV polarized proton run in 2009 opened a new era of spin-flavor structure measurements from $W^{-(+)}$ boson production. $W^{-(+)}$ bosons are produced in $\bar{u} + d\,(\bar{d} + u)$ collisions and can be detected through their leptonic decays, $e^- + \bar{\nu}_e\,(e^+ + \nu_e)$, where only the respective charged lepton is measured. The discrimination of $\bar{u} + d\,(\bar{d} + u)$ quark combinations requires distinguishing between high p_T $e^{-(+)}$ through their opposite charge sign, which in turn requires precise tracking information. Recent published STAR results on the first measurement of W^-/W^+ and Z boson production will be shown.

The STAR experiment has recently started the installation of the Forward GEM Tracker to enhance the charge separation of high p_T $e^{-(+)}$ at forward pseudorapidities and will begin the commissioning of this new tracking system during the upcoming 2012 running period. The status of the Forward GEM Tracker along with a discussion of future prospects will be presented.

Primary author: Prof. SURROW, Bernd (MIT)

Presenter: Prof. SURROW, Bernd (MIT)

Session Classification: Spin physics

Track Classification: Spin physics

Contribution ID: **114** Type: **not specified**

J/psi Photoproduction in ultra-peripheral Au+Au collisions measured by RHIC-PHENIX.

Wednesday, 28 March 2012 14:06 (18 minutes)

Title:J/psi Photoproduction in ultra-peripheral Au+Au collisions measured by RHIC-PHENIX.

Ultra-peripheral collisions are heavy-ion collisions with impact parameter larger than twice the nuclear radius.
Since there is no nuclear overlap, strong interactions cannot occur and
ions interact through photon-ion (coherent), photon-nucleus (incoherent), and photon photon collisions.

Measurement of vector meson photo production is a sensitive probe of gluon distribution in nuclei.
At RHIC energy, measurement of J/ψ photo production corresponds to x $\cong$ 0.015 and Q^2 =2.5 GeV/c^2.
In the kinematic region, nuclear shadowing plays an important role and that still have large uncertainty.

PHENIX has the capability of measuring J/ψ's via their dielectron
decays at mid-rapidity ($|y| < 0.35$) and dimuon decays at forward (1.2< $|y|$ <2.2) rapidity.
PHENIX published J/ψ photo production cross section at mid-rapidity in Au+Au collisions at $\sqrt{s_{NN}}$ = 200 GeV in the 2004 dataset [1] (add reference in the end). The measured cross section was found to be consistent with theoretical calculations
within its statistical error.

PHENIX collected higher statistics Au+Au collisions datasets in 2007 and 2010 that allow a more precise measurement over a wider rapidity range. In this talk I will present present new preliminary results
for the integrated and differential cross section of UPC J/ψ at central and forward rapidity.

Primary author: Mr TAKAHARA, Akihisa (CNS, University of Tokyo and JRA RIKEN)

Presenter: Mr TAKAHARA, Akihisa (CNS, University of Tokyo and JRA RIKEN)

Session Classification: Heavy flavours

Track Classification: Heavy flavours

Contribution ID: **115** Type: **not specified**

W/Z/DY + jet as a test of the NLO BFKL kernel

Wednesday, 28 March 2012 16:00 (18 minutes)

We study W/Z/DY + jet events where the W/Z/DY boson is produced in the forward direction of one of the colliding protons and a jet is produced in the forward direction of the second proton. The resulting large rapidity difference between the final states then opens up the phase space for BFKL evolution which we would like to study in more detail. As a by-product of our study, we also provide an analytic expression for the high energy re-summed exclusive partonic W/Z + n jet cross-section in moment space. To construct the BFKL re-summed cross-section we determine an analytic expression for the exclusive W/Z/DY impact factor in (gamma, n) space which is combined with BFKL Green's function and jet impact factor. In particular, both impact factors are determined for non-zero conformal spin and allow therefore for the study of angular correlations. First numerical results for a number of observables which allow to isolate and test BFKL evolution are presented.

Primary authors: Ms SALAS, Clara (IFT Madrid); HENTSCHINSKI, Martin (Autonoma University Madrid/CSIC)

Presenter: HENTSCHINSKI, Martin (Autonoma University Madrid/CSIC)

Session Classification: Combined: Electroweak and searches/structure functions

Track Classification: Electroweak and searches/structure functions

Contribution ID: **116** Type: **not specified**

Fully massive scheme for jet production in DIS

Tuesday, 27 March 2012 11:18 (18 minutes)

We present the consistent treatment of heavy quarks in jet production processes in DIS at NLO accuracy. The method is based on the ACOT massive factorization scheme (Aivazis-Collins-Olness-Tung) which is already in use in global fits for PDFs. Extension of this method to jets faces the problem of infra-red singularities, which have to cancel between real and virtual corrections. Moreover, potential mass singularities have to be controlled in both contributions. To this end, we extended the dipole subtraction method (S. Catani, S. Dittmaier, M. H. Seymour, Z. Trocsanyi), which in its original form did not take into account QCD massive splittings in the initial state. We constructed relevant kinematics and dipole splitting functions together with their integrals. We partially adapted the method in MC program and checked against the known massive inclusive NLO results.

Primary author: KOTKO, Piotr

Co-author: SLOMINSKI, Wojtek

Presenter: KOTKO, Piotr

Session Classification: Heavy flavours

Track Classification: Heavy flavours

Contribution ID: **117** Type: **not specified**

Longitudinal semi-inclusive double-spin asymmetries at HERMES.

Tuesday, 27 March 2012 17:20 (20 minutes)

Final measurements are reported on the double-spin asymmetries for a longitudinally polarized hydrogen and deuterium targets at HERMES using the27.6 GeV HERA lepton beam. The kinematic dependences of the longitudinal semi-inclusive asymmetry simultaneously on Bjorken-x and hadron transverse momentum p_h, and Bjorken-x and the hadron energy fraction z are explored. Additionally, the hadron charge-difference asymmetry is presented, which under certain model assumptions grants access to the parton distributions of the valence quarks.

Primary author: Dr KRAVCHENKO, Polina (DESY)

Presenter: Dr KRAVCHENKO, Polina (DESY)

Session Classification: Spin physics

Track Classification: Spin physics

Contribution ID: **118** Type: **not specified**

Low x physics: a critical phenomenon?

Tuesday, 27 March 2012 16:45 (15 minutes)

The DIS structure functions are expressed, in a rigorous way, as correlation functions in a quantum field theory containing a parameter r. It is shown that low x physics corresponds to the theory in the limit of r going to zero where the theory develops a large correlation length. This indicates critical behaviour. The data on F2 are analysed in a geometric way and values for the critical indices are extracted.

Primary author: Prof. NACHTMANN, Otto (Institute for Theoretical Physics, University of Heidelberg)

Presenter: Prof. NACHTMANN, Otto (Institute for Theoretical Physics, University of Heidelberg)

Session Classification: Structure functions

Track Classification: Structure functions

Contribution ID: **119** Type: **not specified**

The CLAS12 Physics Program

Tuesday, 27 March 2012 16:55 (25 minutes)

With the doubling of the Jefferson Lab beam energy and the complete rebuilding of the CLAS spectrometer underway, a full experimental program is already approved for Hall B. The components of this program relevant to deep-inelastic scattering will be discussed.

Primary author: GRIFFIOEN, Keith (C)

Presenter: GRIFFIOEN, Keith (C)

Session Classification: Future of DIS

Track Classification: Future of DIS

Contribution ID: **120** Type: **not specified**

Searches for direct supersymmetric gaugino production with the ATLAS detector

Wednesday, 28 March 2012 11:06 (18 minutes)

Naturalness arguments for weak-scale supersymmetry favour supersymmetric partners of the Higgs and electroweak gauge bosons, so-called gauginos, with masses not too far from those of their Standard Model counterparts. Gauginos with masses less than a few hundred GeV can give rise to direct pair production rates at the LHC that can be observed in the data sample recorded in 2011 by the ATLAS detector. The talk presents results from searches for direct gaugino production in final states with leptons and missing transverse momentum.

Primary author: Prof. OREGLIA, Mark (University of Chicago (US))

Presenter: HEELAN, Louise (University of Texas at Arlington (US))

Session Classification: Electroweak and searches

Track Classification: Electroweak and searches

Contribution ID: **121** Type: **not specified**

Searches for strong R-parity conserving SUSY production at the LHC with the ATLAS detector

Wednesday, 28 March 2012 09:42 (18 minutes)

Searches for supersymmetric squarks and gluinos in events containing jets, missing transverse momentum with or without leptons are presented. The results are based on the full data sample (5 fb-1) recorded in 2011 at sqrt(s)=7 TeV cebtre-of-mass energy by the ATLAS experiment at the LHC.

Primary author: Prof. OREGLIA, Mark (University of Chicago (US))

Presenter: LEGGER, Federica (Ludwig-Maximilians-Univ. Muenchen)

Session Classification: Electroweak and searches

Track Classification: Electroweak and searches

Contribution ID: **123** Type: **not specified**

Insights into the nucleon spin from lattice QCD

Wednesday, 28 March 2012 08:30 (35 minutes)

Flavour singlet contributions to the nucleon spin are elusive due to the fact that they cannot be determined directly in experiment but require extrapolations to the small x region. Direct calculations of these contributions are possible using Lattice QCD, however, they pose a significant computational challenge due to the presence of disconnected quark line diagrams. I report on recent progress in determining these sea quark contributions on the lattice.

Primary author: COLLINS, Sara (University of Regensburg)

Presenter: COLLINS, Sara (University of Regensburg)

Session Classification: Spin physics

Track Classification: Spin physics

Contribution ID: **124** Type: **not specified**

Helicity Structure of the Nucleon: Recent Results

Tuesday, 27 March 2012 09:00 (35 minutes)

We give an overview of the recent developments on longitudinal spin physics and the nucleon's helicity structure. We highlight the status of theoretical calculations and the impact of recent data.

Primary author: VOGELSANG, Werner

Presenter: VOGELSANG, Werner

Session Classification: Spin physics

Track Classification: Spin physics

Contribution ID: **125** Type: **not specified**

Accelerator Design of High Luminosity Electron-Hadron Collider eRHIC

Wednesday, 28 March 2012 09:20 (25 minutes)

The accelerator design of future high-energy high-luminosity electron-hadron collider at RHIC called eRHIC is presented. We plan adding energy recovery linacs to accelerate the electron beam to 20 (potentially 30) GeV and to collide the electrons with hadrons in RHIC. The center-of-mass energy of eRHIC will range from 30 to 200 GeV. The luminosity exceeding 10^34 cm^-2 s^-1 can be achieved in eRHIC using the low-beta interaction region with a 10 mrad crab crossing. The important eRHIC R&D items include the high-current polarized electron source, the coherent electron cooling and the compact magnets for re-circulating passes. A natural staging scenario is based on step-by-step increases of the electron beam energy by building-up of eRHIC's SRF linacs.

Primary author: PTITSYN, Vadim (B)

Presenter: PTITSYN, Vadim (B)

Session Classification: Future of DIS

Track Classification: Future of DIS

Contribution ID: **126** Type: **not specified**

Distribution of linearly polarized gluons inside a large nucleus

Thursday, 29 March 2012 10:10 (20 minutes)

I will discuss the color glass condensate (CGC) based calculation of two gluon TMDs inside a large nucleus at small x. The main focus is on the linearly polarized gluon TMD which is often referred to as the gluon Boer-Mulders function. With the derived gluon TMDs at small x, it is shown that an effective TMD factorization can be established at small x in a certain kinematical region. As a result, this distribution, in principle, can be accessed through measuring $\cos 2\phi$ azimuthal asymmetries in various hard scattering processes, such as di-jets production in SIDIS, virtual photon-jet production in pA collisions and heavy quark pair production in pA collisions.

Primary author: Dr ZHOU, jian (Regensburg University)

Co-author: Prof. METZ, Andreas (Temple University)

Presenter: Dr ZHOU, jian (Regensburg University)

Session Classification: Spin physics

Track Classification: Spin physics

Contribution ID: **127** Type: **not specified**

Hard Exclusive Meson Production at COMPASS and Future DVCS Measurements at COMPASS-II

Wednesday, 28 March 2012 15:15 (20 minutes)

New results for the transverse target spin azimuthal asymmetry $A_{UT}^{\sin(\phi-\phi_S)}$) for hard exclusive ρ^0-meson production on a transversely polarised NH_3 target will be presented. The measurement was performed in 2007 and 2010 with the COMPASS detector using the 160\,GeV/c muon beam of the SPS at CERN. The asymmetry is sensitive to the nucleon helicity-flip generalised parton distributions E^q, which are related to the orbital angular momentum of quarks in the nucleon.
The DVCS program of the future COMPASS-II experiment, dedicated to investigate the nucleon structure through Generalised Parton Distributions is presented as well. The high energy muon beam from CERN SPS allows to measure these processes in a wide and up to now uncovered range in Bjorken x and Q^2. The availability of muon beams with opposite charges and polarisations provides unique possibilities to access the GPDs.

Primary author: WOLLNY, Heiner (CEA - Centre d'Etudes de Saclay (FR))

Presenter: WOLLNY, Heiner (CEA - Centre d'Etudes de Saclay (FR))

Session Classification: Combined: Diffraction and vector mesons/spin physics

Track Classification: Diffraction and vector mesons/spin physics

Contribution ID: **128** Type: **not specified**

Photon impact factor for BFKL pomeron at next-to-leading order

Tuesday, 27 March 2012 16:30 (15 minutes)

I will present an analytic expression in momentum space of the next-to-leading order photon impact factor for small-x deep inelastic scattering. The result is calculated using the operator product expansion in Wilson lines.

Primary author: CHIRILLI, Giovanni Antonio (Lawrence Berkeley National Laboratory (LBNL))

Presenter: CHIRILLI, Giovanni Antonio (Lawrence Berkeley National Laboratory (LBNL))

Session Classification: Structure functions

Track Classification: Structure functions

Contribution ID: **129** Type: **not specified**

Calculation of the Two-Loop Gluon Regge Trajectory from Lipatov's Effective Action

Thursday, 29 March 2012 11:00 (20 minutes)

Lipatov's high-energy effective action is a very promising tool for computations in the Regge limit beyond leading order. Its use has been however restricted to tree-level calculations for many years. Recently a regularization/subtraction prescription was proposed that allows to extend the formalism to deal with loops in a consistent way. We illustrate the procedure with the computation of the gluon Regge trajectory at two loops.

Primary author: MADRIGAL, José Daniel (IFT UAM/CSIC, Madrid)

Co-authors: Dr SABIO VERA, Agustin (CERN); CHACHAMIS, Grigorios (Paul Scherrer Institut); HENTSCHINSKI, Martin (Autonoma University Madrid/CSIC)

Presenter: MADRIGAL, José Daniel (IFT UAM/CSIC, Madrid)

Session Classification: Diffraction and vector mesons

Track Classification: Diffraction and vector mesons

Contribution ID: **130** Type: **not specified**

Open heavy flavor production in pp collisions with ALICE at LHC

Tuesday, 27 March 2012 09:54 (18 minutes)

ALICE is the LHC experiment dedicated to the study of the Quark Gluon Plasma (QGP) in Pb-Pb collisions. Heavy quarks are ideal probes to explore the QGP formation and properties, since they experience the full collision history and are expected to be abundantly produced at the LHC. It is of great importance to measure the heavy flavor cross section not only in Pb-Pb collisions, but also in pp collisions. In fact, the measurement in the latter is used both as a reference for the Pb-Pb results and as test of the pQCD predictions in a new energy domain.
ALICE measures heavy quark production both at central and forward rapidity, reconstructing heavy flavour particles, both exclusively, using a selection of hadronic decay channels, and inclusively, using single leptons. Since the start up of the LHC, ALICE has been collecting Pb-Pb data at √sNN = 2.76 TeV and pp data at √s = 2.76 and 7 TeV. We present results on the measurement of heavy quark production through the hadronic decay channels of D mesons and via single leptons, with emphasis on the results obtained with pp data.

Primary author: ROMITA, Rosa (GSI - Helmholtzzentrum fur Schwerionenforschung GmbH (DE))

Presenter: ROMITA, Rosa (GSI - Helmholtzzentrum fur Schwerionenforschung GmbH (DE))

Session Classification: Heavy flavours

Track Classification: Heavy flavours

Contribution ID: **131** Type: **not specified**

Dijet Production in QCD and N=4 SYM

Wednesday, 28 March 2012 10:30 (20 minutes)

Perturbative N=4 SYM computations for dijet production within the BFKL regime are shown to approach closely QCD predictions for suitable observables sensitive to the Möbius invariance of Regge limit. This similarity is strengthened by an appropriate choice of renormalization scale.

Primary author: MADRIGAL, José Daniel (IFT UAM/CSIC, Madrid)

Co-authors: SABIO VERA, Agustin (CERN); CHACHAMIS, Grigorios (Paul Scherrer Institut)

Presenter: MADRIGAL, José Daniel (IFT UAM/CSIC, Madrid)

Session Classification: Combined: Hadronic final states/diffraction and vector mesons

Track Classification: Hadronic final states/diffraction and vector mesons

Contribution ID: **132** Type: **not specified**

The singular behavior of one-loop massive QCD amplitudes with one external soft gluon

Wednesday, 28 March 2012 09:30 (20 minutes)

I report on the calculation of the one-loop correction to the soft-gluon current with massive fermions. This current is process independent and controls the singular behavior of one-loop massive QCD amplitudes in the limit when one external gluon becomes soft. It therefore constitutes a necessary ingredient for the numerical evaluation of observables with massive fermions at hadron colliders to next-to-next-to-leading order.

Primary author: BIERENBAUM, Isabella (University Hamburg)

Presenter: BIERENBAUM, Isabella (University Hamburg)

Session Classification: Combined: Heavy flavours/structure functions

Track Classification: Heavy flavours/structure functions

Contribution ID: **133** Type: **not specified**

Probing the Low-x Structure of the Nucleus with the PHENIX Detector

Tuesday, 27 March 2012 17:10 (20 minutes)

One of the fundamental goals of the PHENIX experiment is to understand the structure of cold nuclear matter, since this serves as the initial state for heavy-ion collisions. Knowing the initial state is vital for interpreting measurements from heavy-ion collisions. Moreover, the structure of the cold nucleus by itself is interesting since it is a test-bed for our understanding of QCD. In particular there is the possibility of novel QCD effects such as gluon saturation at low-x in the nucleus. At RHIC we can probe the structure of cold nuclear matter using d+Au collisions. We will present measurements of forward di-hadron correlations and inclusive J/Psi production, which seem to show some interesting effects in the cold nucleus, especially as one probes down to Bjorken x of about 10^{-3} in the Au nucleus.

Primary author: Dr CHIU, Mickey (Brookhaven National Lab)

Presenter: Dr CHIU, Mickey (Brookhaven National Lab)

Session Classification: Diffraction and vector mesons

Track Classification: Diffraction and vector mesons

Contribution ID: **134** Type: **not specified**

Evidence for breakdown of the DGLAP description in diffractive DIS at HERA

Tuesday, 27 March 2012 11:40 (20 minutes)

HERA data on diffractive DIS show deviations from twist 2 DGLAP predictions below Q^2 5 GeV^2 at low x_P, which may reach up to 100%. These deviations are consistent with higher twists effects extracted from the saturation model. It is a first direct evidence for the higher twists in DIS. This finding affects determination of the diffractive parton densities that are used for the predictions at the LHC.

Primary authors: MOTYKA, Leszek (Hamburg University); SADZIKOWSKI, Mariusz (Jagiellonian University); SLOMINSKI, Wojtek

Presenter: SADZIKOWSKI, Mariusz (Jagiellonian University)

Session Classification: Diffraction and vector mesons

Track Classification: Diffraction and vector mesons

Contribution ID: **136** Type: **not specified**

New determination of the nonperturbative form factor in QCD transverse-momentum resummation for vector boson production

Wednesday, 28 March 2012 17:00 (20 minutes)

In the conventional b_*model for the Collins–Soper–Sterman resummation,*
the resummed form factor is accompanied by the nonperturbative gaussian form factor, and
it is known that the nonperturbative parameter associated with the latter exhibits the strong dependence on the logarithm of
the vector boson invariant mass.
On the other hand, an another approach to treat the impact parameter (b space) transform in the resummation formalism has been developed as the "minimal prescription (MP)" based on an analytic continuation procedure.
*By contrast to the b_* approach, the MP has advantages that it leaves unchanged the perturbative expansion to any (and arbitrarily-high) fixed order in \alpha_s and it does not require any infrared cut-off to avoid the
Landau pole in the b-space integration. In the framework of the MP, however, the behavior of the corresponding nonperturbative form factor as a function of the vector boson invariant mass has been unknown.
In this work, we present a first systematic study of the nonperturbative form factor associated with the resummed form factor in the MP.
The matching of the b-space resummation formulas between the MP and the b_*model indicates that the*
*nonperturbative form factor in the MP has the milder dependence on the vector boson invariant mass than that in the b_* model . To clarify this point quantitatively, we perform a global fit of the nonperturbative form factor in the MP resummation
at the next-to-leading logarithmic accuracy, with the Z boson production data at the Tevatron and the low energy Drell-Yan data. We obtain good description of the transverse momentum distribution of vector bosons using a gaussian form of the
nonperturbative form factor and find
the weak dependence of the corresponding nonperturbative parameter on the vector boson invariant mass,
which in turn allows an interpretation as arising from the intrinsic transverse momentum of partons inside the proton.

Primary author: Prof. TANAKA, Kazuhiro (Juntendo University)

Co-authors: Dr KAWAMURA, Hiroyuki (KEK); Prof. HIRAI, Masanori (Tokyo University of Science)

Presenter: Prof. TANAKA, Kazuhiro (Juntendo University)

Session Classification: Diffraction and vector mesons

Track Classification: Diffraction and vector mesons

Contribution ID: **137** Type: **not specified**

Azimuthal distributions of charged hadrons, pions, and kaons produced in deep-inelastic scattering off unpolarized protons and deuterons

Tuesday, 27 March 2012 12:00 (25 minutes)

The azimuthal $\cos\phi$ and $\cos 2\phi$ modulations of the distribution of hadrons produced in unpolarized semi-inclusive deep-inelastic scattering of electrons and positrons off hydrogen and deuterium targets have been measuread at the HERMES experiment.
For the first time these modulations were determined in a four-dimensional kinematic space for positively and negatively charged pions and kaons separately, as well as for unidentified hadrons. These azimuthal dependences are sensitive to the transverse motion and polarization of the quarks within the nucleon via, e.g., the Cahn, Boer-Mulders and Collins effects.

Primary author: GIORDANO, Francesca (U)

Co-author: Dr TRUTY, Rebecca (UIUC)

Presenter: GIORDANO, Francesca (U)

Session Classification: Spin physics

Track Classification: Spin physics

Contribution ID: **138** Type: **not specified**

An eRHIC Detector: Design Consideration and its Realization by Means of Detector R&D

Wednesday, 28 March 2012 14:40 (25 minutes)

eRHIC is a proposed high luminosity, polarized Electron Ion Collider (EIC), which would make use of the existing RHIC infrastructure. eRHIC is a triple IP collider, with the possibility of using the two existing, but upgraded IP detectors and a dedicated eRHIC detector.
A detector has to be designed that can make use of present knowledge and experience gained from the HERA detectors, but has to be adapted such that it is able to cope with the EIC physics program. This presentation will describe the eRHIC detector design and its IR as well the presently ongoing R&D activities for making technology choices towards such a detector.

Primary author: DEHMELT, Klaus (Stony Brook University USA)

Presenter: DEHMELT, Klaus (Stony Brook University USA)

Session Classification: Future of DIS

Track Classification: Future of DIS

Contribution ID: **139** Type: **not specified**

Single and Double Spin Asymmetry Measurements in Semi-Inclusive and Inclusive DIS on Polarized He-3

Wednesday, 28 March 2012 11:30 (25 minutes)

Jefferson Lab experiment E06-010 measured the target-single spin (SSA) and double spin asymmetries (DSA) in semi-inclusive deep inelastic pion electroproduction on a transversely polarized He-3 target. The measured asymmetry (A_UT) is sensitive to the nucleon transversity and Sivers distribution functions, whereas the measured A_LT asymmetry is related to the transverse momentum dependent PDF g_1T. The kinematics were chosen to be in the valence quark region with x ~ 0.16-0.35 and Q^2 ~ 1.4-2.7 GeV^2. The Collins moment, which is sensitive to transversity, the Sivers and A_LT moments, which are sensitive to the orbital motion of the quarks, were extracted using the azimuthal angular dependence of the measured asymmetries. These data, when combined with the data from other experiments on transversely polarized proton and deuteron targets, will help in extracting the nucleon transverse momentum dependent distribution functions via a global analysis. These semi-inclusive results will be presented and discussed along with the preliminary results for the inclusive single spin asymmetries.

Primary author: SULKOSKY, Vincent (MIT)

Presenter: SULKOSKY, Vincent (MIT)

Session Classification: Spin physics

Track Classification: Spin physics

Contribution ID: **140** Type: **not specified**

Precision Polarized SIDIS Experiments in Hall-A at 12 GeV JLab

Tuesday, 27 March 2012 17:20 (25 minutes)

One of the cleanest ways to access the Transverse Momentum Dependent (TMD) parton distribution functions of the nucleon is to measure single (SSA) and double spin asymmetries (DSA) in semi-inclusive DIS reactions using polarized nucleon targets. The Jefferson Lab 12 GeV upgrade will provide a unique opportunity to perform such precision measurements and to map these multi-dimensional PDFs. In this talk, we will present our plans for performing these precision measurements in Hall-A using Large acceptance SoLID spectrometer and polarized proton and 3 He (neutron) targets. In particular, we will focus on two approved A-rated experiments using both longitudinally and transversely polarized 3 He targets, and a conditionally approved experiment with a transversely polarized proton target. The high luminosities from these targets and the large acceptance of the SoLID spectrometer will allow for a precise 4-dimensional (x, Q2 , z, PT) mapping of SSA and DSA. The full azimuthal angular coverage is necessary to untangle various angular moments and thereby reduce the systematic uncertainties. These experiments will provide the most precise data to extract transversity, Sivers and Worm-gear distributions of u and d-quarks and provide comprehensive information on the correlation between quark angular momentum and the nucleon's spin.

Primary author: Mr ALLADA, Kalyan (Jefferson Lab)

Presenter: Mr ALLADA, Kalyan (Jefferson Lab)

Session Classification: Future of DIS

Track Classification: Future of DIS

Contribution ID: **141** Type: **not specified**

Future Programme of COMPASS at CERN

Tuesday, 27 March 2012 12:15 (25 minutes)

COMPASS at CERN is preparing for a new series of measurements on the nucleon structure comprising deep virtual Compton scattering and hard exclusive meson production using muon beams, as well as Drell-Yan reactions using a polarised proton target and a negative pion beam. The former will mainly constrain the generalized parton distribution H and determine the transverse size of the nucleon, while the later measurements will provide information on transverse-momentum dependent (TMD) PDFs. Of particular interest is to verify the predicted change of sign of T-odd TMD PDFs going from DIS to Drell-Yan reactions. The necessary hardware upgrades and the projected results of the programme will be discussed.

Primary author: Dr MALLOT, Gerhard (CERN)

Presenter: Dr MALLOT, Gerhard (CERN)

Session Classification: Future of DIS

Track Classification: Future of DIS

Contribution ID: **142** Type: **not specified**

Inclusive particle production

Wednesday, 28 March 2012 13:50 (20 minutes)

Due to its unique pseudorapidity coverage and the possibility of providing measurements at low transverse momenta, the LHCb detector allows unique insight into particle production in the forward region at the LHC. The latest LHCb soft-QCD results, the measurements of charged particle multiplicity at 7 TeV and the measurement of the ⁄p/p, K-/K+, π-/π+, (⁄p+p)/(π-+π+), (K-+K+)/(π-+π+) production ratios at 0.9 TeV and 7 TeV will be presented. These results offer an important input to the understanding of baryon transport and of the hadronisation process in a kinematical range where QCD models have large uncertainties.

Primary author: BRITSCH, Markward (Max-Planck-Gesellschaft (DE))

Presenter: BRITSCH, Markward (Max-Planck-Gesellschaft (DE))

Session Classification: Hadronic final states

Track Classification: Hadronic final states

Contribution ID: **143** Type: **not specified**

Bc + b baryons studies at LHCb

Wednesday, 28 March 2012 16:36 (18 minutes)

During the year 2011, the LHCb experiment has accumulated 1 fb-1 of data in proton-proton collisions data at 7 TeV, collecting a sample rich in both Bc mesons and b baryons. Studies of these states provide a wealth of new measurements as well as probes of QCD theory predictions. We will present studies of Bc production together with precision measurements of both the mass and lifetime, in Bc->J/psi pi, J/psi mu nu and studies of the Bc-> J/psi 3pi mode. Measurements of the properties of \Xi_b and Omega_b baryons including the mass and studies of excited B hadron states will also be presented.

Primary authors: GERSHON, Tim (Univ. of Warwick); Dr YANG, Zhenwei (Tsinghua University (CN))

Presenter: Dr YANG, Zhenwei (Tsinghua University (CN))

Session Classification: Heavy flavours

Track Classification: Heavy flavours

Contribution ID: **144** Type: **not specified**

Quarkonium results from LHCb

Wednesday, 28 March 2012 14:42 (18 minutes)

Studies of quarkonia production in the forward region provide important tests of NRQCD. During 2010 and 2011 the LHCb experiment has collected a dataset corresponding to an integrated luminosity of 1 fb-1 in proton-proton collisions at sqrt(s)= 7 TeV. We present studies based on 40 to 1000 fb-1 of data, including the production of the J/psi, psi(2S), Chi_c charmonium together with Upsilon and Chi_b bottomonium states. We also report measurements of double charm production, performed for the first time at a hadron collider. Absolute and relative branching ratios are presented and compared to the most recent theoretical predictions when available. In addition, we will discuss results for the exotic states the X(3872), Y(4140) and Z+(4430), and give prospects for these measurements.

Primary authors: SABATINO, Giovanni (Universita degli Studi di Roma Tor Vergata (IT)); GERSHON, Tim (Univ. of Warwick)

Presenter: SABATINO, Giovanni (Universita degli Studi di Roma Tor Vergata (IT))

Session Classification: Heavy flavours

Track Classification: Heavy flavours

Contribution ID: **145** Type: **not specified**

Drell-Yan production in the forward region with LHCb

Wednesday, 28 March 2012 17:12 (18 minutes)

We report on Drell-Yan production using data collected at the LHCb experiment with a centre of mass energy of $\sqrt{s} = 7$~TeV in 2010. Drell-Yan events are selected with invariant di-muon masses $M_{\mu\mu} > 10$~GeV/c^2. These measurements are sensitive to Bjorken-x values as low as 1×10^{-5} and will provide important input to the knowledge of the parton density functions. The event selection and the signal extraction is described. The cross section is measured differentially as a function of the invariant mass of the two muons.

Primary author: ANDERSON, Jonathan (Universitaet Zuerich (CH))

Presenter: ANDERSON, Jonathan (Universitaet Zuerich (CH))

Session Classification: Combined: Electroweak and searches/structure functions

Track Classification: Electroweak and searches/structure functions

Contribution ID: **146** Type: **not specified**

Jet reconstruction with LHCb

Wednesday, 28 March 2012 08:30 (20 minutes)

Primary author: BURSCHE, Albert (University of Zurich)

Presenters: BURSCHE, Albert (University of Zurich); BURSCHE, Albert (Universitaet Zuerich (CH))

Session Classification: Combined: Hadronic final states/diffraction and vector mesons

Track Classification: Hadronic final states/diffraction and vector mesons

Contribution ID: **147** Type: **not specified**

Measurement of W and Z production in the forward region with LHCb

Wednesday, 28 March 2012 16:36 (18 minutes)

We report on measurements of W and Z production in the forward region, using data collected at the LHCb experiment with a centre of mass energy of $\sqrt{s} = 7$~TeV with an integrated luminosity of up to 1 fb-1. W and Z bosons are reconstructed in leptonic decay channels, and their cross-sections determined using data-driven techniques. Results are presented inclusively (within the fiducial region considered), and differentially as a function of boson rapidity (Z) and lepton pseudorapidity (W). The ratio of W to Z production, W+/W- production and the W charge asymmetry (for three lepton PT thresholds) is also given. All results are compared to NNLO predictions.

Primary author: Mr FARRY, Stephen (University College Dublin (IE))

Presenter: Mr FARRY, Stephen (University College Dublin (IE))

Session Classification: Combined: Electroweak and searches/structure functions

Track Classification: Electroweak and searches/structure functions

Contribution ID: **148** Type: **not specified**

Exclusive dimuon production in the forward region with LHCb

Tuesday, 27 March 2012 14:20 (20 minutes)

We report on studies of exclusive dimuon production, using LHCb experimental data. Exclusively produced muon pairs can be produced by two photon fusion (a QED process ideally suited to obtaining a precise integrated luminosity measure), or by resonance production. We show results for exclusive dimuon production, and observations of the exclusive J/psi. psi‘ and chi_c states, obtained with data at $\sqrt(s) = 7$~TeV. We compare our results to predictions.

Primary author: GERSHON, Tim (Univ. of Warwick)

Presenter: MORAN, Dermot (Univ Manchester)

Session Classification: Diffraction and vector mesons

Track Classification: Diffraction and vector mesons

Contribution ID: **149** Type: **not specified**

Measurement of the forward energy flow in pp collisions at sqrt{s}=7 TeV with the LHCb experiment

Thursday, 29 March 2012 11:40 (20 minutes)

We present the results on the energy flow measured with minimum-bias data collected by the LHCb experiment in pp collisions at $\sqrt{s} = 7$~TeV for inclusive minimum bias interactions, hard scattering processes and events with enhanced or suppressed fractions of diffractive contributions. The measurements are performed in the pseudorapidity range $2 < \eta < 5$ which corresponds to the main detector acceptance of the LHCb spectrometer. The results of the measurements are compared to predictions given by several Monte Carlo event generators, which model the underlying event activity in different ways.

Primary author: VOLYANSKYY, Dmytro (Max-Planck-Gesellschaft (DE))

Presenter: VOLYANSKYY, Dmytro (Max-Planck-Gesellschaft (DE))

Session Classification: Hadronic final states

Track Classification: Hadronic final states

Contribution ID: **150** Type: **not specified**

The LHCb upgrade

Tuesday, 27 March 2012 09:50 (25 minutes)

The LHCb experiment is designed to perform high-precision measurements of CP violation and search for New Physics using the enormous flux of beauty and charmed hadrons produced at the LHC. The operation and the results obtained from the data collected in 2010 and 2011 demonstrate that the detector is robust and functioning very well. However, the limit of 1 fb^{-1} of data per year cannot be overcome without improving the detector. We therefore plan for an upgraded spectrometer by 2018 with a 40 MHz readout and a much more flexible software-based triggering system that will increase the data rate as well as the efficiency specially in the hadronic channels. Here we present the LHCb detector upgrade plans, based on the recently submitted Letter of Intent, with a particular focus on prospects for QCD-related physics analyses.

Primary author: GERSHON, Tim (Univ. of Warwick)

Presenter: LE GAC, Renaud (Universite d'Aix - Marseille II (FR))

Session Classification: Future of DIS

Track Classification: Future of DIS

Contribution ID: **151** Type: **not specified**

COMPASS results on transverse spin asymmetries in two-hadron production in SIDIS

Thursday, 29 March 2012 11:20 (20 minutes)

For each quark flavour three independent parton distribution functions (PDF) are necessary to describe the nucleon at twist-two level, the quark distribution f1(x), the helicity distribution g1(x) and the transversity distribution h1(x). The transversity distribution function is chiral-odd and therefore is not accessible in deep inelastic scattering (DIS). However, h1(x) can be observed in semi-inclusive DIS in combination with another chirally odd function like the two-hadron interference fragmentation function (IFF) in two-hadron production, which is the subject of this contribution. The 160 GeV/c polarized μ+ beam of CERN's M2 beamline allows COMPASS to investigate the spin structure of the nucleon using polarized solid state targets. After taking the first data on a transversely polarized proton target NH3 in 2007, a full year of data taking followed in 2010 to increase precision. In this contribution the latest results from the 2010 data for the azimuthal asymmetries in two-hadron production are presented, as well as the corresponding results on a polarized deuteron target 6LiD from the data taken in the years 2002-2004. An extraction of h1(x) via a coupling to the two-hadron IFF has been carried out for the 2007 data.

Primary author: BRAUN, Christopher (Friedrich-Alexander-Univ. Erlangen (DE))

Presenter: BRAUN, Christopher (Friedrich-Alexander-Univ. Erlangen (DE))

Session Classification: Spin physics

Track Classification: Spin physics

Contribution ID: **152** Type: **not specified**

Charmonium production in pp collisions with ALICE

Wednesday, 28 March 2012 13:48 (18 minutes)

Due to their large mass, heavy quark pairs are considered to be produced in the first instants of the collision in hard scatterings of partons which can be described perturbatively. However, the bound states of these pairs
are produced via soft non-perturbative processes. The interplay between the perturbative and non-perturbative processes involved in quarkonium production makes this field
a very important testing ground for QCD.
At the LHC, the special setup of the ALICE experiment
allows the study of charmonium production in pp collisions down to zero transverse momentum in a large rapidity range, $|y| < 0.9$ and $2.5 < y < 4.0$.
We will present results on charmonium production from pp collisions recorded by ALICE at $\sqrt{s}$ =~2.76 and 7 TeV.
These will include, among others, the first LHC measurements on J/ψ polarization and the dependence of J/ψ
production on the event charged particle multiplicity.
The data will be discussed using calculations from different theoretical models.
We will also show results on the J/ψ production in Pb–Pb collisions at $\sqrt{s_{NN}}$ =~2.76 TeV in comparison
with the pp collisions.

Primary author: ARSENE, Ionut Cristian (GSI - Helmholtzzentrum fur Schwerionenforschung GmbH (DE))

Presenter: ARSENE, Ionut Cristian (GSI - Helmholtzzentrum fur Schwerionenforschung GmbH (DE))

Session Classification: Heavy flavours

Track Classification: Heavy flavours

Contribution ID: **153** Type: **not specified**

PHENIX Transverse Spin Physics Results

Wednesday, 28 March 2012 11:05 (25 minutes)

Utilizing the RHIC polarized proton collider with transverse spin the PHENIX detector carried out cross section and asymmetry measurements in inclusive pizero and eta production at mid rapidity |n| < 0.35 using the central EM calorimeters where vanishing asymmetries were found. However, significant pizero and eta asymmetries were measured in the forward rapidity 3.1 < n < 3.9 using the MPC calorimeter. An inclusive cluster analysis of the MPC data also resulted in significant asymmetries. We will discuss the results in terms of energy dependence, the Sivers or Collins contributions at low transverse momentum, and higher Twist approaches at higher momenta. Future plans such as a inclusive jet production and Drell Yan measurements will also be presented.

Primary author: Dr MAKDISI, Yousef (Brookhaven National Laboratory)

Presenter: Dr MAKDISI, Yousef (Brookhaven National Laboratory)

Session Classification: Spin physics

Track Classification: Spin physics

Contribution ID: **154** Type: **not specified**

GPD analysis of hard scattering processes : progress report

Wednesday, 28 March 2012 13:55 (20 minutes)

We present some recent results on the analysis of hard scattering processes in the framework of Generalized Parton Distributions. In particular we compute DVCS observables on unpolarized targets with the Kroll - Goloskokov model (suited to DVMP analysis). We also discuss NLO contributions to DVCS and TCS processes for various kinematic settings (collider and fixed target experiments).

Primary author: MOUTARDE, Hervé (I)

Presenter: MOUTARDE, Hervé (I)

Session Classification: Combined: Diffraction and vector mesons/spin physics

Track Classification: Diffraction and vector mesons/spin physics

Contribution ID: **155** Type: **not specified**

An update and comparison of global NPDF analyses

Tuesday, 27 March 2012 14:45 (20 minutes)

A global NPDF analysis of the combined charged-lepton DIS, DY and neutrino DIS data finds a tension between the nuclear correction factors in nA DIS and ℓA DIS. We explore possible sources of this tension by comparing the input PDFs used by different nuclear global fitting groups, and also compute ratios of experimental observables which (largely) minimize any theoretical bias. We also show comparisons with recent nPDF determinations. This work helps to isolate the sources of possible tensions in the extracted nuclear corrections.

Primary author: KOVARIK, Karol (University of Karlsruhe)

Co-authors: Prof. OLNESS, Fred (Southern Methodist University); SCHIENBEIN, Ingo (Universite Joseph Fourier); Dr YU, Ji Young (LPSC); MORFIN, Jorge G. (Fermilab); OWENS, Joseph (Florida State University); STAVREVA, Tzvetalina (LPSC)

Presenter: KOVARIK, Karol (University of Karlsruhe)

Session Classification: Structure functions

Track Classification: Structure functions

Contribution ID: **156** Type: **not specified**

Analysis of higher twists in DIS and diffractive DIS at HERA and its implications for the saturation model

Tuesday, 27 March 2012 12:00 (20 minutes)

We present new results on determination of higher twist contributions in diffractive DIS and compare them to the inclusive DIS case. In both cases the framework for the estimates is provided by the saturation model. We discuss the methods of higher twist extraction from the saturation model and compare the results for DIS and DDIS. We point out a striking difference in higher twist importance between DIS and DDIS: at low Q2 the effects are minor in DIS and they are large in DDIS. Moreover a comparison to HERA data hints on a necessary improvement of higher twist treatment in the saturation model. We present a possible QCD explanation of both findings.

Primary authors: MOTYKA, Leszek (Jagellonian Univerisity); SADZIKOWSKI, Mariusz (Jagiellonian University); Dr WOJCIECH, Słomiński (Jagellonian University)

Presenter: MOTYKA, Leszek (Jagellonian Univerisity)

Session Classification: Diffraction and vector mesons

Track Classification: Diffraction and vector mesons

Contribution ID: **157** Type: **not specified**

The STAR Experiment: The second decade and beyond.

Wednesday, 28 March 2012 10:55 (40 minutes)

The STAR experiment is one of the flagship experiments at the Relativistic Heavy-Ion Collider at Brookhaven Lab. Since starting to take data at the turn of the century, STAR's large acceptance and measurement capabilities have proved to be vital in terms of characterising the QGP soup produced in heavy-ion collisions and heading towards a measurement of the proton spin in polarised p+p collisions. This has only been achieved through the constant upgrade and enhancement of detectors and components every year, one of many examples being the recordable DAQ rate increasing by a factor of 10^3 since the first year.

Although many measurements have been performed in the last decade, much remains to be done. In this presentation I will outline the proposed measurements and corresponding detector upgrades over the next decade in p+p, p+A and A+A physics as well as STAR's role in the transition of RHIC to an eRHIC accelerator complex.

Primary author: Dr LAMONT, Matthew (BNL)

Presenter: Dr LAMONT, Matthew (BNL)

Session Classification: Future of DIS

Track Classification: Future of DIS

Contribution ID: **158** Type: **not specified**

PHENIX Upgrade Plans for the Next Decade

Wednesday, 28 March 2012 08:30 (25 minutes)

During 12 years of operations, PHENIX has measured the gluon helicity structure of the proton, probed the proton transverse spin structure, studied effects in cold nuclear matter, discovered a strongly coupled QGP and has studied many of its basic properties. In parallel with ongoing luminosity upgrades at RHIC, PHENIX is in the process of planning and commissioning a series of upgrades in order to systematically expand its physics capabilities, allowing measurement of the sea quark helicity distributions, the low x gluon distribution in heavy nuclei and charm and bottom quark production in Heavy Ion collisions. PHENIX is also planning a larger upgrade for the next decade to answer many of the questions spurred by our discoveries during the last decade. With increased acceptance and improved electromagnetic and new hadronic calorimetry in the central region, we will advance understanding of the sQGP by studying jet energy loss. We also plan to upgrade our forward physics detector with additional calorimetry and tracking acceptance. This will allow for measurements of the Sivers effect in Drell-Yan, which can test our understanding of QCD factorization. The larger acceptance will improve our access to low x distributions in heavy nuclei, and also enable measurements of jets in the forward direction, which will allow for a more systematic approach to understanding the large transverse spin measurements seen at RHIC.

Primary author: Dr BOYLE, Kieran (RIKEN BNL Research Center)

Presenter: Dr BOYLE, Kieran (RIKEN BNL Research Center)

Session Classification: Future of DIS

Track Classification: Future of DIS

Contribution ID: **159** Type: **not specified**

The Recent F_L Measurement from HERA and the Dipole Model

Tuesday, 27 March 2012 17:00 (20 minutes)

From the new measurement of F_L at HERA we derive fixed-Q^2 averages <$F_L/F_2 > .We comparethesewithboundswhichar
$Q\hat{}2 <= 20GeV\hat{}2thecentralvaluesofthedataarecloseto andinsomecasesevenabovethebounds.DataonF\_L/F\_2signi$

Primary author: EWERZ, Carlo (ExtreMe Matter Institute EMMI, GSI, and Heidelberg University)

Presenter: EWERZ, Carlo (ExtreMe Matter Institute EMMI, GSI, and Heidelberg University)

Session Classification: Structure functions

Track Classification: Structure functions

Contribution ID: **160** Type: **not specified**

W Physics in Polarized Proton-Proton Collisions at PHENIX

Tuesday, 27 March 2012 17:40 (20 minutes)

A major direction of the physics program at the Relativistic Heavy Ion Collider (RHIC) at Brookhaven National Laboratory (BNL) is to explore the origin of proton spin structure. Parity violating single spin asymmetries, A_L, for W-bosons in longitudinally polarized $p+p$ collisions at a center of mass energy of $\sqrt{s}$ = 500 GeV will give access to the flavor separated quark and anti-quark polarization distributions for up- and down-quarks in the proton.

The PHENIX collaboration has measured A_L for electrons from W-decay in the central rapidity region, $-0.35 < \eta < 0.35$ based on a data sample taken in 2009. A second data sample taken in 2011 is being used to measure A_L for W-decays into muons with two PHENIX forward muon spectrometers covering $1.2 < |\eta| < 2.4$. Cross sections for $W^{\pm}$-boson production at central rapidity and the corresponding single spin asymmetries will be presented. The cross sections will be compared with similar measurements at LHC. The upgrade effort directed at W-physics in the muon spectrometers just has been completed. The new instrumentation will be briefly described and the the status of the W-analysis in the PHENIX muon spectrometers will be discussed.

Primary author: KIM, Young Jin (University of Illinois at Urbana-Champaign)

Presenter: KIM, Young Jin (University of Illinois at Urbana-Champaign)

Session Classification: Spin physics

Track Classification: Spin physics

Contribution ID: **161** Type: **not specified**

Measurements of open heavy flavor production by PHENIX at RHIC

Tuesday, 27 March 2012 12:12 (18 minutes)

Heavy flavor quarks are produced in the early stages of heavy ion collisions and serve as an important probe of the strongly interacting deconfined medium believed to be produced in these collisions at RHIC. Measuring observables such as Nuclear Modification Factor and Elliptic Flow for open heavy flavor production can help in quantifying medium effects.

Measurement of heavy flavor production in p+p collision is an absolutely necessary baseline measurement for nuclear modification factor. On the other hand, measurements of heavy quark production in p+p collisions provides an important cross-check of pQCD calculations.

PHENIX has a unique ability to measure single lepton spectra both at |eta|< 0.35 and at 1.4<|eta|<1.9 rapidity ranges, with its Central and Muon arms, respectively. Single leptons are used to tag the production of heavy flavor quarks via semileptonic decay of heavy flavor mesons (D,B).

The most recent PHENIX single lepton measurements for different colliding ion systems will be presented and compared to the most recent available theoretical model predictions.

Primary author: GARISHVILI, Irakli (Lawrence Livermore Nat. Laboratory (US))

Presenter: GARISHVILI, Irakli (Lawrence Livermore Nat. Laboratory (US))

Session Classification: Heavy flavours

Track Classification: Heavy flavours

Contribution ID: **163** Type: **not specified**

Normalised Multi-jet Cross Sections using Regularised Unfolding and Extractions of alpha_s(M_Z) in Deep-Inelastic Scattering at high Q^2 at HERA (H1)

Tuesday, 27 March 2012 17:50 (20 minutes)

New results on normalised inclusive jet, di-jet and trijet differential cross sections in neutral current deep-inelastic ep scattering (DIS) based on a regularised unfolding procedure are presented. Detector effects like acceptance and migrations as well as statistical correlations between the multi-jets and the inclusive DIS events are taken into account in this procedure. The DIS phase space of this measurement with the H1 detector is given by the virtuality of the exchanged boson (gamma*,Z^0) 150 < Q^2 < 15000 GeV^2 and the inelasticity of the interaction 0.2 < y < 0.7. The jets are reconstructed in the Breit frame of reference using the k_t jet algorithm. In all cases the jet pseudorapidities in the laboratory frame are required to be in the range -1.0 < eta_lab < 2.5. For inclusive jets the transverse momenta in the Breit frame are 7 < P_T < 50 GeV. The di-jet and tri-jet phase space are defined by requiring 5 < P_T,i < 50 GeV, and the invariant mass of the two leading jets M_1,2 > 16 GeV. Compared to a previously published result on normalised multi-jet cross sections, the new features are an extended range in jet pseudorapidity, an improved hadronic energy scale uncertainty of 1% and the adoption of a regularised unfolding procedure. The unfolded normalised jet cross sections are compared to QCD calculations at NLO and values for the strong coupling alpha_s(M_Z) are extracted.

Primary author: BRITZGER, Daniel Andreas (Ludwig-Maximilians-Universitat Munchen)

Presenter: BRITZGER, Daniel Andreas (Ludwig-Maximilians-Universitat Munchen)

Session Classification: Hadronic final states

Track Classification: Hadronic final states

Contribution ID: **164** Type: **not specified**

Jet Substructure at Hadron Colliders

Wednesday, 28 March 2012 16:40 (20 minutes)

Jet Substructure at Hadron Colliders

Primary author: LI, Zhao (Michigan State University)

Presenter: LI, Zhao (Michigan State University)

Session Classification: Hadronic final states

Track Classification: Hadronic final states

Contribution ID: **165** Type: **not specified**

New features in version 2 of the fastNLO project

Thursday, 29 March 2012 09:00 (20 minutes)

Standard methods for higher-order pQCD calculations of cross sections in hadron-induced collisions are time-consuming. The fastNLO project uses multi-dimensional interpolation techniques to convert the convolutions of perturbative coefficients with parton distribution functions and the strong coupling into simple products. By integrating the perturbative coefficients for a given observable with interpolation kernels, fastNLO can store the results of the time-consuming calculation in tables which can subsequently be used for very fast calculations of the same observable for arbitrary PDFs, alpha_s, and different scales. These tables and corresponding user codes are currently available for a large number of jet measurements at the LHC, the Fermilab Tevatron, and HERA. fastNLO is currently used in publications of experimental results by the ATLAS, CMS, CDF, D0, and H1 collaborations, and in all recent global PDF analyses by MSTW, CTEQ, and NNPDF.
This talk will focus on new developments, implemented in the new version 2 of fastNLO, which enhance and broaden the functionality.

Primary author: BRITZGER, Daniel Andreas (DESY)

Co-authors: STOBER, Fred (KIT - Karlsruhe Institute of Technology (DE)); RABBERTZ, Klaus (KIT - Karlsruhe Institute of Technology (DE)); WOBISCH, Markus (Louisiana Technical University (US))

Presenter: BRITZGER, Daniel Andreas (DESY)

Session Classification: Combined: Hadronic final states/structure functions

Track Classification: Hadronic final states/structure functions

Contribution ID: **166** Type: **not specified**

Z+Jets results from CDF

Tuesday, 27 March 2012 14:20 (20 minutes)

Inclusive Z boson plus jets cross sections, as well as bottom jet production in association with a Z-boson cross sections,
are measured in a final state where the Z boson has decayed in two muons or electrons.
Results are based on $\sim$ 9 fb^{-1} of data in pp collisions at $\sqrt{s}$ = 1.96 TeV collected with the CDF detector in Run II.
Differential cross sections are measured as a function of several variables, among which jet transverse momentum, jet rapidity and jets multiplicity.
Measurements are compared to results from different next-to-leading order perturbative QCD predictions and event generators.

Presenter: ORTOLAN, Lorenzo

Session Classification: Hadronic final states

Track Classification: Hadronic final states

Contribution ID: **167** Type: **not specified**

Photon Results from CDF

Tuesday, 27 March 2012 09:20 (20 minutes)

Prompt isolated photon pairs production cross sections, as well as
direct photon production in association with a heavy (b or c) quark jets are presented.
Differential cross sections are presented as a function of several variables.
The results are compared with a next-to-leading order perturbative QCD calculations.

Presenter: VELLIDIS, Konstantinos (Fermilab)

Session Classification: Hadronic final states

Track Classification: Hadronic final states

Contribution ID: **169** Type: **not specified**

Photon+jets measurements in ppbar Collisions at D0

Tuesday, 27 March 2012 09:40 (20 minutes)

Photon+jets measurements in ppbar Collisions at D0

Presenter: SKACHKOV, Nikolai (Joint Inst. for Nuclear Research (RU))

Session Classification: Hadronic final states

Track Classification: Hadronic final states

Contribution ID: **170** Type: **not specified**

W/Z+jets measurements at D0

Tuesday, 27 March 2012 14:00 (20 minutes)

W/Z+jets measurements at D0

Presenter: SKACHKOV, Nikolai (Joint Inst. for Nuclear Research (RU))

Session Classification: Hadronic final states

Track Classification: Hadronic final states

Contribution ID: **172** Type: **not specified**

QCD resummation for jet-mass distributions

Wednesday, 28 March 2012 16:20 (20 minutes)

We study the jet-mass distribution for jets produced in hadron-hadron collision in QCD. In order to obtain reliable phenomenological results we resum to all-order in perturbation theory those contributions coming from collinear and soft gluons. Beyond the leading-logarithmic accuracy the resummation is made more complicated by the presence of non-global logarithms and logarithms related to the choice of the jet-algorithm. We apply our calculation to the interesting case of the jet-mass in Z+jet events, which is of great phenomenological interest for boosted Higgs.

Primary author: MARZANI, Simone (IPPP Durham)

Co-authors: SPANNOWSKY, Michael (LMU); DASGUPTA, Mrinal (Unknown)

Presenter: MARZANI, Simone (IPPP Durham)

Session Classification: Hadronic final states

Track Classification: Hadronic final states

Contribution ID: **174** Type: **not specified**

One-Hadron transverse spin asymmetries at COMPASS

Tuesday, 27 March 2012 11:35 (25 minutes)

The quark content of the nucleon at twist-two level in the collinear case can be fully characterized by three independent distribution functions for each quark flavour: the unpolarized distribution function f1(x), the helicity distribution function g1(x) and the transverse spin distribution function h1(x), also called transversity.
The measurements of single spin asymmetries in semi-inclusive deep inelastic scattering (SIDIS) on a transversely polarized target are an important part of the COMPASS physics program. By measuring azimuthal asymmetries in hadron production one can access both transversity - using the Collins fragmentation function - and the Sivers distribution function. The COMPASS collaboration has measured these asymmetries in the scattering of a 160 GeV/c polarized mu+ beam off a transversely polarized 6LiD (deuteron) target in the years 2002-2004 and off a transversely polarized NH3 (proton) target in 2007 and 2010. In this contribution we present the results from the 2010 data for the Collins and Sivers asymmetries.

Primary author: ADOLPH, Christoph (Friedrich-Alexander-Univ. Erlangen (DE))

Presenter: ADOLPH, Christoph (Friedrich-Alexander-Univ. Erlangen (DE))

Session Classification: Spin physics

Track Classification: Spin physics

Contribution ID: **175** Type: **not specified**

SM Higgs production in theory

Tuesday, 27 March 2012 09:00 (18 minutes)

I will briefly review Standard Model Higgs production and decay
mechanisms and report on the status of the art of existing predictions, with major focus on the single Higgs production cross-section.

Primary author: HERZOG, Franz (ETH Zurich)

Presenter: HERZOG, Franz (ETH Zurich)

Session Classification: Electroweak and searches

Track Classification: Electroweak and searches

Contribution ID: **176** Type: **not specified**

A theoretical review of the BSM Higgs

Tuesday, 27 March 2012 11:00 (18 minutes)

A review the status of the BSM Higgs (excluding supersymmetry) with particular emphasis on the composite Higgs, the connection to light custodians.

Primary author: AZATOV, Aleksandr

Presenter: AZATOV, Aleksandr

Session Classification: Electroweak and searches

Track Classification: Electroweak and searches

Contribution ID: **177** Type: **not specified**

Some Z' and W' models facing current LHC searches

Tuesday, 27 March 2012 14:00 (18 minutes)

We present the implications of recent LHC results on some classes of Z' and W' models. We also remark how the strongest bounds (coming for example from searches for Z' -> dileptons and W' -> lepton + neutrino) do not apply to some theoretically motivated resonances, and discuss where signals from such states would appear.

Primary author: SALVIONI, Ennio (Universita e INFN (IT))

Presenter: SALVIONI, Ennio (Universita e INFN (IT))

Session Classification: Electroweak and searches

Track Classification: Electroweak and searches

Contribution ID: **178** Type: **not specified**

A theoretical review of the implications of recent OPERA results

Tuesday, 27 March 2012 16:48 (18 minutes)

We review the theoretical implications of the OPERA results, with particular emphasis on the consistency with other tests of special relativity (directly or through quantum effects in the charged lepton sector) and the difficulties in construction of models satisfying all constraints.

Primary author: SIBIRYAKOV, Sergey (Institute for Nuclear Research of RAS)

Presenter: SIBIRYAKOV, Sergey (Institute for Nuclear Research of RAS)

Session Classification: Electroweak and searches

Track Classification: Electroweak and searches

Contribution ID: **179** Type: **not specified**

The MSSM after two years of LHC running

Wednesday, 28 March 2012 08:30 (18 minutes)

The LHC is closing in on the Minimal Supersymmetric Standard Model. The null results from superparticle searches, and the preliminary
evidence for a 124-126 GeV Higgs, severely constrain various popular minimal scenarios. In this talk I will review these constraints,
and point out how the LHC results can still be accommodated within the MSSM. The resulting superparticle mass spectra may provide
interesting clues about the underlying model which generates the soft SUSY breaking terms.

Primary author: Mr BRUEMMER, Felix (Heidelberg University)

Presenter: Mr BRUEMMER, Felix (Heidelberg University)

Session Classification: Electroweak and searches

Track Classification: Electroweak and searches

Contribution ID: **180** Type: **not specified**

Supersymmetry beyond the MSSM after the first LHC data

Wednesday, 28 March 2012 10:30 (18 minutes)

We review the status of motivated beyond-MSSM scenarios in the light of the first searches at the LHC. In particular, we discuss the consequences for model building of a Higgs boson at about 125 GeV and of taking seriously the excess in the direct CP violation in the charm sector.

Primary author: LODONE, Paolo (Scuola Normale Superiore of Pisa)

Presenter: LODONE, Paolo (Scuola Normale Superiore of Pisa)

Session Classification: Electroweak and searches

Track Classification: Electroweak and searches

Contribution ID: **181** Type: **not specified**

Inelastic cross section measurement in p-p collisions in CMS

Thursday, 29 March 2012 12:00 (20 minutes)

Inelastic cross section measurement in p-p collisions in CMS

Primary author: ZSIGMOND, Anna (Hungarian Academy of Sciences (HU))

Presenter: ZSIGMOND, Anna (Hungarian Academy of Sciences (HU))

Session Classification: Hadronic final states

Track Classification: Hadronic final states

Contribution ID: **182** Type: **not specified**

Inclusive hadron production (multiplicities and spectra) in p-p collisions in CMS

Wednesday, 28 March 2012 13:30 (20 minutes)

Inclusive hadron production (multiplicities and spectra) in p-p collisions in CMS

Primary author: SIKLER, Ferenc (Hungarian Academy of Sciences (HU))

Presenter: SIKLER, Ferenc (Hungarian Academy of Sciences (HU))

Session Classification: Hadronic final states

Track Classification: Hadronic final states

Contribution ID: **183** Type: **not specified**

Characterization of the underlying event in p-p collisions in CMS

Thursday, 29 March 2012 11:00 (20 minutes)

Characterization of the underlying event in p-p collisions in CMS

Presenter: VAN HAEVERMAET, Hans Jozef H (University of Antwerp (BE))

Session Classification: Hadronic final states

Track Classification: Hadronic final states

Contribution ID: **184** Type: **not specified**

Jets and multi-jets at large rapidities in p-p collisions at the LHC [CMS]

Tuesday, 27 March 2012 12:00 (20 minutes)

Jets and multi-jets at large rapidities in p-p collisions at the LHC

Presenter: SCHOERNER-SADENIUS, Thomas (Deutsches Elektronen-Synchrotron (DE))

Session Classification: Hadronic final states

Track Classification: Hadronic final states

Contribution ID: **185** Type: **not specified**

Top quark pair production beyond NLO

Thursday, 29 March 2012 09:00 (18 minutes)

I present recent calculations of observables in top quark pair production at hadron colliders, including the total cross section, the invariant mass distribution, the transverse momentum and rapidity distributions, and the forward-backward asymmetry. The calculations are based on the resummation of threshold logarithms at NNLL accuracy beyond NLO.

Primary author: YANG, Li Lin

Presenter: YANG, Li Lin

Session Classification: Combined: Electroweak and searches/heavy flavours

Track Classification: Electroweak and searches/heavy flavours

Contribution ID: **186** Type: **not specified**

Hunting New Physics in Top Pair Production

Thursday, 29 March 2012 11:00 (18 minutes)

Following recent intriguing experimental results on top quark pair production from the Tevatron I review the present status of new physics explanations put forward to explain the experimental observations deviating from standard model predictions. All proposals face severe constraints from precisely measured flavor, electroweak and high pt collider observables. Possible future measurements at the LHC able to discern among the various proposals are also discussed.

Primary author: KAMENIK, Jernej (Jozef Stefan Institute)

Presenter: KAMENIK, Jernej (Jozef Stefan Institute)

Session Classification: Combined: Electroweak and searches/heavy flavours

Track Classification: Electroweak and searches/heavy flavours

Contribution ID: **187** Type: **not specified**

Searches for low-mass Higgs states at BABAR

Tuesday, 27 March 2012 11:54 (18 minutes)

Several types of new-physics models predict the existence of low-mass Higgs states. Previous BABAR searches for leptonic and invisible light-Higgs decays have excluded large regions of model parameter space. We present new searches for hadronic Higgs decays and for a dark-sector Higgs produced in association with a dark gauge boson.

Primary author: SANTORO, Valentina (University of Ferrara)

Presenter: SANTORO, Valentina (University of Ferrara)

Session Classification: Electroweak and searches

Track Classification: Electroweak and searches

Contribution ID: **188** Type: **not specified**

Measurement of the neutrino velocity with the OPERA detector in the CNGS beam

Tuesday, 27 March 2012 16:30 (18 minutes)

The OPERA neutrino experiment at the underground Gran Sasso Laboratory has measured the velocity of neutrinos from the CERN CNGS beam over a baseline of about 730 km with much higher accuracy than previous studies conducted with accelerator neutrinos. The measurement is based on high-statistics data taken by OPERA in the years 2009, 2010 and 2011. Dedicated upgrades of the CNGS timing system and of the OPERA detector, as well as a high precision geodesy campaign for the measurement of the neutrino baseline, allowed reaching comparable systematic and statistical accuracies.

Primary author: FERBER, Torben (Hamburg University)

Presenter: FERBER, Torben (Hamburg University)

Session Classification: Electroweak and searches

Track Classification: Electroweak and searches

Contribution ID: **191** Type: **not specified**

Measurement of D^{*\pm} Meson Production and Determination of F_2^{ccbar} at low Q2 in Deep-Inelastic Scattering at HERA

Wednesday, 28 March 2012 11:06 (20 minutes)

Inclusive production of D*mesons in deep-inelastic ep scattering at HERA is studied in the range 5 < Q^2 <100 GeV^2 of the photon virtuality and 0.02 < y < 0.7 of the inelasticity of the scattering process. The observed phase space for the D* meson is p_T(D*) > 1.25 GeV and |eta(D*)| < 1.8. The data sample corresponds to an integrated luminosity of 348 pb^{-1} collected with the H1 detector. Single and double differential cross sections are measured and the charm contribution F_2^{ccbar} to the proton structure function F_2 is determined. The results are compared to perturbative QCD predictions at next-to-leading order implementing different schemes for the charm mass treatment and with Monte Carlo models based on leading order matrix elements with parton showers.

Primary author: DAUM, Karin (University of Wuppertal/DESY)

Presenter: HENNEKEMPER, Eva (Uni Heidelberg)

Session Classification: Combined: Heavy flavours/structure functions

Track Classification: Heavy flavours/structure functions

Contribution ID: **192** Type: **not specified**

Testing NRQCD factorization with J/psi yield and polarization at NLO

Wednesday, 28 March 2012 13:30 (18 minutes)

We study the polarization observables of J/ψ hadroproduction
at NLO in NRQCD, including the ${}^3P_J^{[8]}$ channel.
Exploiting the color-octet long-distance matrix elements previously extracted through a global fit to unpolarized J/ψ production
data, we provide theoretical predictions in the helicity and Collins-Soper frames and compare them with data from CDF and ALICE.
The notorious CDF J/ψ polarization anomaly familiar from leading-order analyses persists at the quantum level, while the
situation looks promising for the LHC.

Primary author: Prof. KNIEHL, Bernd (Univ. Hamburg)

Presenter: Prof. KNIEHL, Bernd (Univ. Hamburg)

Session Classification: Heavy flavours

Track Classification: Heavy flavours

Contribution ID: **195** Type: **not specified**

Charmonium and charmonium-like results from BABAR

Wednesday, 28 March 2012 15:18 (18 minutes)

Charmonium and charmonium-like states are a unique system for studying QCD and possibly exotic bound states. We present new results on such states, which are created in two-photon fusion or in electron-positron collisions and decaying into a variety of final states, including psi pi pi, eta_c pi pi, and J/psi omega.

Primary author: SOFFER, Abner (Tel Aviv University)

Presenter: FIORAVANTI, Elisa (INFN Ferrara)

Session Classification: Heavy flavours

Track Classification: Heavy flavours

Contribution ID: **196** Type: **not specified**

Baryonic B decay results from BABAR

Wednesday, 28 March 2012 17:12 (18 minutes)

Decays of B mesons into final states containing baryons are much less understood than decays into mesons, and are useful for shedding light on baryon-production mechanisms and intermediate states. We report the results of recent and new studies of such decays, including B- −>Sigma_c++ pbar pi- pi-, B0bar −>Lambda_c+ pbar p pbar, and
B −> D(*) p pbar (npi). Both the total decay rates and the resonant structure are reported.

Primary author: SOFFER, Abner (Tel Aviv University)

Presenter: EBERT, Marcus (SLAC)

Session Classification: Heavy flavours

Track Classification: Heavy flavours

Contribution ID: **198** Type: **not specified**

The E-906/SeaQuest experiment at Fermilab

Tuesday, 27 March 2012 11:50 (25 minutes)

The E-906/SeaQuest experiment at Fermilab will continue a series of Drell-Yan measurements to explore the antiquark structure of the nucleon and nuclei. To extend existing measurements to larger values of Bjorken-x, a 120 GeV proton beam extracted from Fermilab's main injector is used, resulting in a factor of 50 more luminosity than previous experiments and enabling access to values of x up to 0.9. An overview will be presented of the key physics goals of the E-906/SeaQuest collaboration. These include investigation of the dramatic dbar/ubar flavor asymmetry in the nucleon sea and its behavior at high x; study of the EMC effect in Drell-Yan scattering and the unexpected absence of any antiquark excess in existing data; and measurements of the angular dependence of the Drell-Yan process, sensitive to spin-orbit correlations within the nucleon. The talk will conclude with a status report on the ongoing commissioning of this new experiment.

Primary author: Dr DIEFENTHALER, Markus (University of Illinois at Urbana-Champaign)

Presenter: Dr DIEFENTHALER, Markus (University of Illinois at Urbana-Champaign)

Session Classification: Future of DIS

Track Classification: Future of DIS

Contribution ID: **199** Type: **not specified**

Searches for new physics with leptons and/or jets at ATLAS

Tuesday, 27 March 2012 14:36 (18 minutes)

We present the most recent results of searches beyond the Standard Model with leptons and /or jets conducted by the ATLAS collaboration based on several inverse femtobarns of data.

Primary author: Prof. OREGLIA, Mark (University of Chicago (US))

Presenter: POLICICCHIO, Antonio (INFN Cosenza)

Session Classification: Electroweak and searches

Track Classification: Electroweak and searches

Contribution ID: **200** Type: **not specified**

Searches for fourth generation heavy quarks with the ATLAS detector

Tuesday, 27 March 2012 15:30 (18 minutes)

The addition of one or more heavy quarks is a natural extension to the Standard Model.
Fourth generation heavy quarks can be produced at the LHC at rates that can be observed in the 2011 data samples.
The talk presents results from searches\'a0performed by the ATLAS collaboration for fourth generation quarks decaying via several potential decay channels.

Primary author: Prof. OREGLIA, Mark (University of Chicago (US))

Presenter: ZHONG, Jiahang (University of Oxford (GB))

Session Classification: Electroweak and searches

Track Classification: Electroweak and searches

Contribution ID: **202** Type: **not specified**

Production of HF and quarkonia at CDF

Wednesday, 28 March 2012 14:24 (18 minutes)

We report recent studies on heavy flavor production in 1.96 TeV proton-antiproton collisions collected by the CDF detector. These include a new measurement of the spin-alignment of Y mesons using dimuon decays in 6.7 fb^-1
of data. This measurement is the first to report the full angular distributions of dimuons
as functions of Y transverse momentum in both the Collins–Soper and s–channel helicity frames. This is also the first measurement of spin alignment of Y(3S) mesons.

Primary authors: Mr TONELLI, Diego (Pisa); KAMBEITZ, Manuel

Presenter: KAMBEITZ, Manuel

Session Classification: Heavy flavours

Track Classification: Heavy flavours

Contribution ID: **203** Type: **not specified**

Searches for BSM physics using flavour transitions at the Tevatron

Thursday, 29 March 2012 11:36 (18 minutes)

We report recent results from indirect searches for BSM physics using flavor processes in the whole sample of 9.6 fb^-1 collected by CDF in Tevatron Run II. These include the final measurements of flavor-changing-neutral-current, rare B-> mu^+ mu^- and B-> K mu^+ mu^- decays, the final measurements of the bottom-strange mixing phase (phi_s) using Bs->J/Psi Phi decays, measurements of the branching fractions of Bs −> Ds(*)+Ds(*)- that help constrain DeltaGamma_s, and searches for charge-parity violation in charm decays. D0 results will also be presented.

Primary authors: Mr TONELLI, Diego (Pisa); GRILLO, Lucia

Presenter: GRILLO, Lucia

Session Classification: Combined: Electroweak and searches/heavy flavours

Track Classification: Electroweak and searches/heavy flavours

Contribution ID: **204** Type: **not specified**

Top quark physics in CDF

Tuesday, 27 March 2012 15:48 (18 minutes)

The study of the dynamics of top-quark pair production in proton-proton and proton-antiproton collisions plays an important role in the understanding of parton interactions at large Bjorken-x. It tests the assumptions of the standard model and of quantum chromodynamics at the electroweak scale and beyond. The CDF data set is an ideal sample for measuring observables sensitive to the dynamics of top-quark pair production, given the excellent understanding of detector performance and the unique proton-antiproton initial state. We present recent measurements of such observables from CDF. These include the direct measurement of the ratio R of the branching fraction of top-quark decaying to W + b-quark over the branching fraction of top-quark decaying to W + any quark flavor. The measurement uses data corresponding to 7.5/fb of integrated luminosity in the lepton+jets decay channel. The ratio R constrains the |V_tb| element of the CKM matrix. We also present a measurement of the spin correlation coefficient of the top-quark pair, which can be directly measured uniquely in the top-pair system thanks to the very short life time of the top-quark. This measurement uses data corresponding to 5.1/fb of integrated luminosity in the dilepton decay channel. Finally, we present a study of the top-quark pair production asymmetries in the lepton+jets channel using the full CDF Run II data set which corresponds to an integrated luminosity of 8.7/fb. The study includes the measurement of the cross section differential in the top-pair rapidity difference, the measurement of the inclusive forward-backward asymmetry A_FB, as well as the measurement of A_FB as a function of the rapidity difference and of the invariant mass of the top-pair system. The production asymmetries are sensitive to the top-quark pair production mechanism, thus constraining quantum chromodynamics at higher order and testing for possible new physics.

Primary author: VELLIDIS, Konstantinos (Fermilab)

Presenters: VELLIDIS, Konstantinos (Fermilab); VELLIDIS, Konstantinos (University of Athens (GR))

Session Classification: Heavy flavours

Track Classification: Heavy flavours

Contribution ID: **205** Type: **not specified**

Top quark production at D0

Tuesday, 27 March 2012 15:30 (18 minutes)

We present measurements of the cross sections for the production of top-antitop quark pair production via the strong interaction and for the production of single top quarks via the weak interaction in proton-antiproton collisions at sqrt(s)=1.96 TeV using data corresponding to integrated luminosities of up to 5.4 fb-1. The data were collected with the D0 detector at the Fermilab Tevatron collider. For the top-antitop pair production, measurements are obtained from the study of the kinematic properties and of the b-tagging rates in final states for with either a charged lepton pair accompanied by additional jets and missing transverse momentum, and in final states with one charged lepton, three or more jets and missing transverse momentum. For the single top quark production the measurement is obtained from the final states with one charged lepton, at least two jets and missing transverse momentum, and studies of the relative contributions of different production mechanisms are also presented. Finally we present measurements of the forward-backward asymmetry in the top-antitop quark final states.

Primary authors: SOUSTRUZNIK, Karel (C); Dr VERZOCCHI, Marco (Albert-Ludwigs-Universitaet Freiburg (DE))

Presenter: SOUSTRUZNIK, Karel (C)

Session Classification: Heavy flavours

Track Classification: Heavy flavours

Contribution ID: **208** Type: **not specified**

Searches for new physics in the top sector at the Tevatron

Thursday, 29 March 2012 10:12 (18 minutes)

The kinematic properties of the data used for the measurement of the top-antitop quark pair production and of the single top quark production cross sections are used to set constraints on a variety of signals of physics beyond the SM. We set constraints on possible 4th generation top quarks, on possible resonances that would decay into top-antitop quark pairs, on possible resonances that would decay in top and bottom quark pairs. We also set constraints on possible anomalous couplings at the Wtb vertices. Finally we set limits on possible t−>uZ, cZ decays by studying final states with three charged leptons.

Primary authors: Dr VERZOCCHI, Marco (Albert-Ludwigs-Universitaet Freiburg (DE)); PETERS, Yvonne

Presenter: PETERS, Yvonne

Session Classification: Combined: Electroweak and searches/heavy flavours

Track Classification: Electroweak and searches/heavy flavours

Contribution ID: **209** Type: **not specified**

Inclusive Measurement of Diffractive Deep Inelastic Scattering at HERA

Tuesday, 27 March 2012 09:40 (20 minutes)

Measurements of the cross section for the diffractive process ep -> eXY are presented, where Y is a proton or a low mass proton excitation carrying a fraction 1 − xIP > 0.95 of the incident proton longitudinal momentum and the squared four-momentum transfer at the proton vertex satisfying MY < 1.6 GeV and |t| < 1.0 GeV^2. Using data taken by the H1 experiment, the cross section is measured for photon virtualities in the range 3 <= Q2 < =1600 GeV^2, triple differentially in xIP , Q^2 and beta = x/xIP , where x is the Bjorken scaling variable. Thesemeasurements are made after selecting diffractive events by demanding that a large rapidity interval separates the final state hadronic systems X and Y . New measurements covering data taking periods 1999-2000 and 2004-2007 are combined with previously published results in order to provide a single set of diffractive cross sections using the large rapidity gap selection method from the H1 experiment. Comparisons of measurements with predictions from the diffractive parton density and dipole models are shown. Finally, the proton vertex factorisation hypothesis, which is an important aspect in the modelling of diffractive structure, is discussed.

Primary author: POLIFKA, Richard (University of Toronto (CA))

Presenter: SAUVAN, Emmanuel (LAPP (IN2P3/CNRS))

Session Classification: Diffraction and vector mesons

Track Classification: Diffraction and vector mesons

Contribution ID: **210** Type: **not specified**

Measurement of the Diffractive Longitudinal Structure Function F_L^D at HERA

Tuesday, 27 March 2012 09:20 (20 minutes)

First measurements are presented of the diffractive cross section $\sigma_{ep\to eXY}$ at centre-of-mass energies $\sqrt{s}$ of 225 and 252 GeV, together with a precise new measurement at $\sqrt{s}$ of 319 GeV, using data taken with the H1 detector in the years 2006 and 2007. Together with previous H1 data at $\sqrt{s}$ of 301 GeV, the measurements are used to extract the diffractive longitudinal structure function F_L^D in the range of photon virtualities 4.0 <= Q^2 <= 44.0 GeV^2 and fractional proton longitudinal momentum loss 5 10^{-4} <= x_{IP} <= 3 10^{-3}. The measured F_L^D is compared with leading twist predictions based on diffractive parton densities extracted in NLO QCD fits to previous measurements of diffractive Deep-Inelastic Scattering and with a model which additionally includes a higher twist contribution derived from a colour dipole approach. The ratio of the diffractive cross section induced by longitudinally polarised photons to that for transversely polarised photons is extracted and compared with the analogous quantity for inclusive Deep-Inelastic Scattering.

Primary author: POLIFKA, Richard (University of Toronto (CA))

Presenter: SALEK, David (CERN)

Session Classification: Diffraction and vector mesons

Track Classification: Diffraction and vector mesons

Contribution ID: **211** Type: **not specified**

Measurement of Dijet Production in Diffractive Deep-Inelastic Scattering with a Leading Proton at HERA

Tuesday, 27 March 2012 10:00 (20 minutes)

The cross section of diffractive deep-inelastic scattering ep \rightarrow eXp is measured, where the system X contains at least two jets and the leading final state proton is detected in the H1 Forward Proton Spectrometer. The measurement is performed for fractional proton longitudinal momentum loss xIP < 0.1 and covers the range 0.1 < |t| < 0.7 GeV2 in squared four-momentum transfer at the proton vertex and 4 < Q2 < 110 GeV2 in photon virtuality. The differential cross sections extrapolated to |t| < 1 GeV2 are in agreement with next-toleading order QCD predictions based on diffractive parton distribution functions extracted from measurements of inclusive and dijet cross sections in diffractive deep-inelastic scattering. The data are also compared with leading order Monte Carlo models.

Primary author: POLIFKA, Richard (University of Toronto (CA))

Presenter: POLIFKA, Richard (University of Toronto (CA))

Session Classification: Diffraction and vector mesons

Track Classification: Diffraction and vector mesons

Contribution ID: **212** Type: **not specified**

Physical Interpretation of Chiral Odd Generalized Parton Distributions from Deeply Virtual Meson Production

Exclusive π^o electroproduction from nucleons was suggested in as a method
for extracting from experiment the tensor charge, transversity and other quantities related to chiral odd combinations
of generalized parton distributions.
In this contribution we explain the details of the process: {\it i)} the connection between the helicity description and the cartesian basis; {\it ii)} the dependence on the momentum transfer squared, Q^2, and {\it iii)} the angular momentum, parity, and charge conjugation
constraints (J^{PC} quantum numbers).
We also address the question of the physical interpretation of the chiral-odd GPDs. This issue is at variance with the chiral-even sector where the four chiral even GPDs correspond to a clear physical picture each one being normalized to the nucleon form factors describing its electroweak properties.
In the chiral-odd sector, instead, only H_T yields the transversity structure function, $h_1(x)$ in the forward limit, whereas no model independent connection with known form factors or structure functions exists for the other GPDs.
While interesting connections to Transverse Momentum Distributions were established within a class of models,
in this contribution we discuss a different perspective whereby using Parity transformations, and assuming the validity of the quark-diquark model, we can establish relations between the chiral-even and chiral-odd quark-proton helicity amplitudes.

Primary author: LIUTI, Simonetta (University of Virginia)

Presenter: LIUTI, Simonetta (University of Virginia)

Track Classification: Spin physics

Contribution ID: **213** Type: **not specified**

Production of c-cbar pairs at LHC: k_t-factorization and double-parton scattering

Tuesday, 27 March 2012 10:12 (18 minutes)

We discuss charm production at LHC. The production of single $c\bar{c}$ pairs is calculated in the k_t-factorization approach. We use several unintegrated gluon distributions from the literature. Some of them include effect of small-x saturation and fulfill Balitsky-Kovchegov evolution equation. The hadronization is included with the help of fragmentation functions found for the production of c ($\bar{c}$) in e^+e^- collisions. Differential distributions for several
charmed mesons will be presented and compared to recent results of the ALICE and LHCb collaborations. Some missing strength is identified.
Different schemes of fragmentation are discussed.

Furthermore we discuss production of two pairs of $c\bar{c}$ within a simple formalism of double-parton scattering (DPS). Surprisingly large cross sections, comparable to single-parton scattering (SPS) contribution, are predicted for LHC energies.
Both total inclusive cross section as a function of energy and differential distributions are shown.
We include recently discussed evolution of double partons in the case of two scales.
We discuss perspectives how to identify the double scattering contribution. We find much larger cross section for large rapidity distance between charm quarks from different hard parton scatterings compared to single scattering.
First predictions for two $c\bar{c}$ pair production in single-parton scattering will be presented.

Predictions for the production of different pairs of charm mesons (D0D0, $D0\bar{D}0$, etc.) are presented for the kinematics of LHCb experiment.
I will show also predictions for so-called nonphotonic electrons and muons coming from the semileptonic decays of charmed mesons.
The double-parton scattering gives large contribution with large (pseudo)rapidity gap between electrons (e^+e^+,e^- e^-, e^+e^-) or muons. This can be measured experimentally.

Primary author: Prof. SZCZUREK, Antoni (Cracow, INP & Rzeszow Univ.)

Presenter: Prof. SZCZUREK, Antoni (Cracow, INP & Rzeszow Univ.)

Session Classification: Heavy flavours

Track Classification: Heavy flavours

Contribution ID: **214** Type: **not specified**

The non-forward BFKL equation, infrared effects and hard diffraction

Thursday, 29 March 2012 09:20 (20 minutes)

An iterative solution best suited for a Monte Carlo implementation for the non-forward BFKL equation is presented and possible applications discussed. We introduce running coupling effects in a way compatible with the bootstrap, fundamental condition for gluon reggeization and see how this naturally leads to renormalon effects in the infrared.

Primary authors: SABIO VERA, Agustin; SALAS, Clara (IFT); CHACHAMIS, Grigorios (Paul Scherrer Institut)

Presenter: SALAS, Clara (IFT)

Session Classification: Diffraction and vector mesons

Track Classification: Diffraction and vector mesons

Contribution ID: **215** Type: **not specified**

Next-to-leading and resummed BFKL evolution with saturation boundary

Wednesday, 28 March 2012 10:50 (20 minutes)

We investigate the effects of the saturation boundary on small-x evolution at the next-to-leading order accuracy and beyond. We demonstrate that the instabilities of the next-to-leading order BFKL evolution are not cured by the presence of the nonlinear saturation effects, and a resummation of the higher order corrections is therefore needed for the nonlinear evolution. The renormalization group improved resummed equation in the presence of the saturation boundary is investigated, and the corresponding saturation scale is extracted. A significant reduction of the saturation scale is found, and we observe that the onset of the saturation corrections is delayed to higher rapidities. This seems to be related to the characteristic feature of the resummed splitting function which at moderately small values of x possesses a minimum.

Primary authors: STASTO, Anna (Penn State); ZASLAVSKY, David (Penn State University); AVSAR, Emil (CEA/Saclay)

Presenter: ZASLAVSKY, David (Penn State University)

Session Classification: Combined: Hadronic final states/diffraction and vector mesons

Track Classification: Hadronic final states/diffraction and vector mesons

Contribution ID: **216** Type: **not specified**

Measurement of Inclusive D* Meson and D* Meson Dijet Cross Sections in Photoproduction at HERA

Tuesday, 27 March 2012 11:54 (18 minutes)

The inclusive photoproduction of D*mesons and of D*-tagged dijets is investigated with the H1 detector at the ep collider HERA. The kinematic region covers small photon virtualities $Q^2 < 2$ GeV^2 and photon-proton centre-of-mass energies of $100 < W_{\gamma p} < 285$ GeV. Inclusive \dstar\ meson differential cross sections are measured for central rapidities $|\eta(D*)| < 1.5$ and transverse momenta $p_T(D*) > 1.8$ GeV.
The heavy quark production process is further investigated in
events with at least two jets with transverse momentum

$ptj > 3.5$ GeV each, one containing the \dstar\ meson.
Differential cross sections for D*-tagged dijet production and for
correlations between the jets are measured in the range
$|\eta(D*)| < 1.5$ and $p_T(D*) > 2.1$ GeV.
The results are compared with predictions from Monte Carlo simulations
and next-to-leading order perturbative QCD calculations.

Primary author: DAUM, Karin (University of Wuppertal/DESY)

Presenter: STAYKOVA, Zlatka Georgieva (University of Antwerp (BE))

Session Classification: Heavy flavours

Track Classification: Heavy flavours

Contribution ID: **218** Type: **not specified**

W, Z and jet central exclusive production at the LHC

Tuesday, 27 March 2012 15:40 (20 minutes)

We study the W/Z pair production via two-photon exchange at the LHC and give the sensitivities on trilinear and quartic gauge anomalous couplings between photons and W/Z bosons. Tagging the protons in the final state in the ATLAS Forward Physics detectors as an example allows to improve the reach on anomalous couplings by four orders of magnitude reaching the values predicted by extra-dimension theories. The measurement of the exclusive jet production using the same detectors at the LHC will also be described.

Primary authors: ROYON, Christophe (CEA - Centre d'Etudes de Saclay (FR)); CHAPON, Emilien (Centre d'Etudes de Saclay (CEN Saclay)-Unknown-Unknown); TRZEBINSKI, Maciej Marek (Polish Academy of Sciences (PL)); KEPKA, Oldrich (Acad. of Sciences of the Czech Rep. (CZ)); STASZEWSKI, Rafal Pawel (Polish Academy of Sciences (PL))

Presenter: CHAPON, Emilien (Centre d'Etudes de Saclay (CEN Saclay)-Unknown-Unknown)

Session Classification: Diffraction and vector mesons

Track Classification: Diffraction and vector mesons

Contribution ID: **219** Type: **not specified**

Searches for SM Higgs at CMS

Tuesday, 27 March 2012 09:42 (24 minutes)

We present results of the search for the standard model Higgs boson at CMS.

Primary author: MEYER, Arnd (Rheinisch-Westfaelische Tech. Hoch. (DE))

Presenter: GOVONI, Pietro (CERN)

Session Classification: Electroweak and searches

Track Classification: Electroweak and searches

Contribution ID: **220** Type: **not specified**

Searches for BSM Higgs at CMS

Tuesday, 27 March 2012 11:18 (18 minutes)

We present results of searches for the non-standard-model Higgs bosons at CMS.

Primary author: MEYER, Arnd (Rheinisch-Westfaelische Tech. Hoch. (DE))

Presenter: FERNANDEZ MENENDEZ, Javier (Universidad de Oviedo (ES))

Session Classification: Electroweak and searches

Track Classification: Electroweak and searches

Contribution ID: **221** Type: **not specified**

Searches for new physics with leptons and/or jets at CMS

Tuesday, 27 March 2012 14:18 (18 minutes)

Searches for new physics with leptons and/or jets at CMS

Primary author: MEYER, Arnd (Rheinisch-Westfaelische Tech. Hoch. (DE))

Presenter: WEBER, Martin (Rheinisch-Westfaelische Tech. Hoch. (DE))

Session Classification: Electroweak and searches

Track Classification: Electroweak and searches

Contribution ID: **222** Type: **not specified**

Searches for large extra dimensions, Leptoquarks and heavy quarks at CMS

Tuesday, 27 March 2012 14:54 (18 minutes)

Searches for large extra dimensions, Leptoquarks and heavy quarks at CMS

Primary author: MEYER, Arnd (Rheinisch-Westfaelische Tech. Hoch. (DE))

Presenter: CHAUHAN, Sushil (University of California Davis (US))

Session Classification: Electroweak and searches

Track Classification: Electroweak and searches

Contribution ID: **223** Type: **not specified**

Search for heavy stable particles in CMS

Tuesday, 27 March 2012 15:12 (18 minutes)

Search for heavy stable particles in CMS

Primary author: MEYER, Arnd (Rheinisch-Westfaelische Tech. Hoch. (DE))

Presenter: Dr QUERTENMONT, Loic (CERN)

Session Classification: Electroweak and searches

Track Classification: Electroweak and searches

Contribution ID: **224** Type: **not specified**

Searches with Jets + missing Et without leptons at CMS

Wednesday, 28 March 2012 08:48 (18 minutes)

We present results of searches for SUSY production at CMS in events containing hadronic jets and missing energy. Various discriminants based on the event kinematics are employed to suppress standard-model backgrounds. The results are interpreted in the context of the Constrained Minimal Supersymmetric Standard Model, and of a number of "simplified models.

Primary author: MEYER, Arnd (Rheinisch-Westfaelische Tech. Hoch. (DE))

Presenter: PAKTINAT MEHDIABADI, Saeid (School of Particles and Accelerator Inst. for Res. in Fundam. S)

Session Classification: Electroweak and searches

Track Classification: Electroweak and searches

Contribution ID: **225** Type: **not specified**

Searches with Jets + missing Et with leptons at CMS

Wednesday, 28 March 2012 09:06 (18 minutes)

We present results of searches for SUSY production at CMS in events with lepton signatures. These include final states with single isolated leptons, Z bosons decaying to lepton pairs, non-resonant same- and opposite-sign lepton pairs, and three or more isolated leptons. The results are used to exclude previously unexplored regions of the supersymmetric parameter space assuming R-parity conservation with the lightest supersymmetric particle being either a neutralino or gravitino.

Primary author: MEYER, Arnd (Rheinisch-Westfaelische Tech. Hoch. (DE))

Presenter: NIEGEL, Martin (KIT - Karlsruhe Institute of Technology (DE))

Session Classification: Electroweak and searches

Track Classification: Electroweak and searches

Contribution ID: **226** Type: **not specified**

SUSY searches with Photons at CMS

Wednesday, 28 March 2012 11:24 (18 minutes)

We present results of searches for SUSY production at CMS in events with one or two isolated photons. The results are interpreted in terms of gauge-mediation models, with the gravitino as the lightest supersymmetric particle.

Primary author: MEYER, Arnd (Rheinisch-Westfaelische Tech. Hoch. (DE))

Presenter: JANG, Dongwook (Carnegie-Mellon University (US))

Session Classification: Electroweak and searches

Track Classification: Electroweak and searches

Contribution ID: **227** Type: **not specified**

Searches for SUSY with third-generation signatures in CMS

Wednesday, 28 March 2012 11:42 (18 minutes)

We present results of searches for SUSY production at CMS in events containing hadronic jets and missing energy. The tagging of heavy flavor in the jets is used both to distinguish standard-model components, and for sensitivity to those SUSY models that lead to final states rich in heavy-flavored particles.

Primary author: MEYER, Arnd (Rheinisch-Westfaelische Tech. Hoch. (DE))

Presenter: KALOGEROPOULOS, Alexis (Inter-University Institute for High Energies (BE))

Session Classification: Electroweak and searches

Track Classification: Electroweak and searches

Contribution ID: **228** Type: **not specified**

Diboson Measurements with the CMS Detector

Wednesday, 28 March 2012 14:06 (18 minutes)

We present studies of diboson production in pp collisions at 7 TeV center-of-mass energy based on data recorded by the CMS detector at the LHC in 2010 and 2011. These include precise measurements of W and Z production in association with a photon and of WW production, WZ and ZZ productions at the LHC. The leptonic decay modes of the W and Z bosons are used. The results are interpreted in terms of constraints on anomalous triple gauge couplings.

Primary author: MEYER, Arnd (Rheinisch-Westfaelische Tech. Hoch. (DE))

Presenter: FOLGUERAS, Santiago (Universidad de Oviedo (ES))

Session Classification: Combined: Electroweak and searches/structure functions

Track Classification: Electroweak and searches/structure functions

Contribution ID: **229** Type: **not specified**

Production of Z and W in association with heavy quarks at CMS

Wednesday, 28 March 2012 16:54 (18 minutes)

The mechanism of production of heavy-flavoured mesons, containing b or c quarks, in association with vector bosons, W or Z, in the Standard Model is only partially understood. The study of events with one or two well-identified and isolated leptons accompanied by b-jets or secondary vertices is therefore crucial to refine the theoretical calculations in perturbative QCD, as well as validate associated Monte Carlo techniques. The deep understanding of these processes is furthermore required by Higgs and BSM analyses with similar final states. Using the LHC proton-proton collision data collected in 2010 and 2011 at a centre of mass energy of 7 TeV by the CMS detector, preliminary measurements of the Z+b(b) cross sections and angular correlations are presented. Finally, the study of the W+c production rate with respect to the W charge and W+light jets rates allows to probe the strange quark content of the proton. These results are also presented.

Primary author: MEYER, Arnd (Rheinisch-Westfaelische Tech. Hoch. (DE))

Presenter: MUSICH, Marco (INFN Torino (IT))

Session Classification: Combined: Electroweak and searches/structure functions

Track Classification: Electroweak and searches/structure functions

Contribution ID: **230** Type: **not specified**

From Jet Counting to Jet Vetoes

Tuesday, 27 March 2012 11:20 (20 minutes)

The properties of jets are used in many LHC physics searches. Higgs searches use jet vetoes and fixed recoil jet multiplicities. Searches for new physics particles require a careful distinction of decay jets from QCD jet radiation. We show that the exclusive number of jets at hadron colliders can be described with two simple patterns: staircase scaling and Poisson scaling. In photon plus jets production we can interpolate between the two patterns using simple kinematic cuts. The associated theoretical errors are well under control. We show how understanding the exclusive jet multiplicities significantly impacts Higgs searches and searches for supersymmetry at the LHC.

Primary author: SCHICHTEL, Peter (Heidelberg University)

Co-authors: SCHUMANN, Steffen (Goettingen University); PLEHN, Tilman (Heidelberg University)

Presenter: SCHICHTEL, Peter (ITP)

Session Classification: Hadronic final states

Track Classification: Hadronic final states

Contribution ID: **231** Type: **not specified**

Top-quark pair-production with one jet and parton showering at hadron colliders

Tuesday, 27 March 2012 17:24 (18 minutes)

We discuss heavy-flavor production in association with one jet
hadronic collisions matched to parton shower Monte Carlo programs at next-to-leading order QCD with account of top-quark decays
and spin correlations in the decay products.
The calculation builds on existing results for the radiative corrections to heavy-quark plus one jet production and uses the POWHEG BOX for the interface to the parton shower programs PYTHIA or HERWIG.
Phenomenological studies for the LHC and the Tevatron are presented.
In particular we study the impact of the parton shower on the top-quark charge asymmetry.

Primary author: MOCH, Sven-Olaf (Unknown)

Co-authors: UWER, Peter (Humboldt-Universität zu Berlin); ALIOLI, Simone (DESY, Zeuthen)

Presenter: MOCH, Sven-Olaf (Unknown)

Session Classification: Heavy flavours

Track Classification: Heavy flavours

Contribution ID: **232** Type: **not specified**

Top–antitop quark + X hadroproduction at NLO accuracy with decay and evolution to the hadron level

Tuesday, 27 March 2012 17:42 (18 minutes)

Aiming at better understanding of the properties of top quarks, we focus on top–antitop+X production at the LHC, with X being a vector, or scalar/pseudoscalar boson. We show predictions obtained by PowHel, a
computing framework based upon the POWHEG-BOX program with input obtained from HELAC-NLO. The POWHEG-BOX generates event files according to the Les-Houches accord, and uses the POWHEG matching formalism to further evolve these events to the hadron level ready for use in any experimental analysis. We discuss the sensitivities of our predictions to the choice of the Shower Monte Carlo code (PYTHIA vs. HERWIG). We show examples of how the choice of different experimental cuts and/or heavy particle reconstruction strategies can affect the predictions and help disentangle our signals from important backgrounds, also involving top-quark production and decay.

Primary author: KARDOS, Adam (University of Debrecen)

Co-authors: PAPADOPOULOS, Costas (Nat. Cent. for Sci. Res. Demokritos (GR)); TROCSANYI, Zoltan Laszlo (University of Debrecen (HU))

Presenter: KARDOS, Adam (University of Debrecen)

Session Classification: Heavy flavours

Track Classification: Heavy flavours

Contribution ID: **233** Type: **not specified**

The High-Energy-Jets framework applied to multi-jet production

Tuesday, 27 March 2012 12:20 (20 minutes)

The theoretical description of multi-jet final states is an issue of great importance at the LHC. The High Energy Jets (HEJ) framework offers a new approach to this and provides an all-order resummation of the dominant contributions from wide-angle QCD radiation. I will give a brief introduction to the framework and then show comparisons to early data from ATLAS and CMS analyses and discuss comparisons with other theoretical frameworks. I will end by discussing current ongoing developments.

Primary author: SMILLIE, Jennifer

Co-author: ANDERSEN, Jeppe Rosenkrantz (Syddansk Universitet (DK))

Presenter: SMILLIE, Jennifer

Session Classification: Hadronic final states

Track Classification: Hadronic final states

Contribution ID: **234** Type: **not specified**

Subleading N-colour improved Parton Showers

Tuesday, 27 March 2012 15:40 (20 minutes)

Parton shower Monte Carlos are by now standard tools to simulate hadronic final states. Having seen a tremendous improvement of combining parton showers and fixed order calculations in recent years, efforts are now underway to improve the shower approximations themselves, as well.

In this contribution we will present first steps towards including subleading colour contributions into parton shower algorithms and discuss the impact of these corrections. Technical aspects required to arrive at such an improved algorithm, particularly generalizations of the Sudakov veto algorithm, will also be discussed.

Primary author: PLAETZER, Simon (DESY Hamburg)

Co-author: SJODAHL, Malin (Lund University)

Presenter: PLAETZER, Simon (DESY Hamburg)

Session Classification: Hadronic final states

Track Classification: Hadronic final states

Contribution ID: **235** Type: **not specified**

Overview on Orbital Angular Momentum

Wednesday, 28 March 2012 16:00 (30 minutes)

In this talk, we will summarize recent developments on the orbital angular momentum of partons in nucleon, from various observables in high energy processes, including generalized parton distributions, transverse momentum dependent parton distributions, etc.

Primary author: Dr YUAN, Feng (Lawrence Berkeley National Laboratory)

Presenter: Dr YUAN, Feng (Lawrence Berkeley National Laboratory)

Session Classification: Spin physics

Track Classification: Spin physics

Contribution ID: **236** Type: **not specified**

Generalized parton distributions from present and future measurements

Tuesday, 27 March 2012 15:15 (25 minutes)

We discuss the access of generalized parton distributions (GPDs) from deeply virtual Compton scattering (DVCS) and deeply virtual
meson production. We also illustrate that DVCS measurements at a future high-luminosity electron-ion-collider provide insight in both the transverse distribution of sea quarks and gluons as well as the proton spin decomposition.

Primary author: MUELLER, Dieter (BNL and Ruhr-University Bochum)

Presenter: MUELLER, Dieter (BNL and Ruhr-University Bochum)

Session Classification: Combined: Future of DIS/spin physics

Track Classification: Future of DIS/spin physics

Contribution ID: **237** Type: **not specified**

Measurements of beauty quark production at CMS

Tuesday, 27 March 2012 09:36 (18 minutes)

Abstract missing

Primary authors: MEYER, Arnd (Rheinisch-Westfaelische Tech. Hoch. (DE)); ERDMANN, Wolfram (Paul Scherrer Institut (CH))

Presenter: ERDMANN, Wolfram (Paul Scherrer Institut (CH))

Session Classification: Heavy flavours

Track Classification: Heavy flavours

Contribution ID: **238** Type: **not specified**

Measurements of Quarkonium production at CMS

Wednesday, 28 March 2012 11:48 (20 minutes)

Abstract missing

Primary authors: MEYER, Arnd (Rheinisch-Westfaelische Tech. Hoch. (DE)); FASANELLA, Daniele (Universita e INFN (IT)); FASANELLA, Daniele (INFN)

Presenters: FASANELLA, Daniele (Universita e INFN (IT)); FASANELLA, Daniele (INFN)

Session Classification: Heavy flavours

Track Classification: Heavy flavours

Contribution ID: **239** Type: **not specified**

Studies of beauty and charm hadron decays at CMS

Thursday, 29 March 2012 12:12 (18 minutes)

Abstract missing

Primary author: MEYER, Arnd (Rheinisch-Westfaelische Tech. Hoch. (DE))

Presenter: SIMONETTO, Franco (Universita e INFN (IT))

Session Classification: Combined: Electroweak and searches/heavy flavours

Track Classification: Electroweak and searches/heavy flavours

Contribution ID: **242** Type: **not specified**

W+n-jet predictions at NLO matched with a parton shower

Tuesday, 27 March 2012 15:00 (20 minutes)

The MC@NLO method as implemented in the Sherpa MC generator is presented using the production of W-bosons in conjunction with up to three jets as an example. Corresponding results computed at next-to leading order in QCD and including parton shower corrections are compared to recent experimental data from the Large Hadron Collider.

Primary author: SIEGERT, Frank (Albert-Ludwigs-Universitaet Freiburg (DE))

Co-authors: KRAUSS, Frank Martin (University of Durham (GB)); SCHOENHERR, Marek (University of Durham (GB)); HOECHE, Stefan (SLAC)

Presenter: SIEGERT, Frank (Albert-Ludwigs-Universitaet Freiburg (DE))

Session Classification: Hadronic final states

Track Classification: Hadronic final states

Contribution ID: **243** Type: **not specified**

Matching Tree-Level Matrix Elements with Interleaved Showers

Tuesday, 27 March 2012 15:20 (20 minutes)

We present the recent implementation of CKKW-L merging inside Pythia8, and comment on the treatment of multiparton interactions in the context of matrix element merging. Since multiple interactions inside Pythia8 are
fully interleaved with space- and time-like showers, care has to be taken
when allowing for MPI. Further, we will discuss the uncertainties of the
implementation.

Primary author: PRESTEL, Stefan (L)

Co-author: LONNBLAD, Leif Ingvar (Lund University (SE))

Presenter: PRESTEL, Stefan (L)

Session Classification: Hadronic final states

Track Classification: Hadronic final states

Contribution ID: **244** Type: **not specified**

New approach to QCD factorization

Abstract: We show that both the k_T- and collinear factorization for DIS
structure functions can be obtained by consecutive reductions of the more general factorization of the Compton scattering amplitude.
Each of these reductions an approximation valid under certain assumptions.
In particular, the transitions to the k_T- factorization is possible when the virtualities of the partons connecting the perturbative and non-perturbative blobs are originated by the transverse momenta.
Then, if the unintegrated parton distributions in k_T-factorization have a sharp maximum in $k_\perp$, the k_T factorization can be reduced to the collinear factorization.
Our analysis makes possible to predict a general form for the fits for parton distributions in k_T-factorization. Besides, we exclude
the use of the singular factors x^{-a} (with $a > 0$) in the fits
representing the initial quark and gluon distributions contributing to the
DIS structure functions in the framework of both k_T- and collinear factorizations.

Primary author: ERMOLAEV, Boris (IFMO Inst. of Fine Mechanics and Optics)

Presenter: ERMOLAEV, Boris (IFMO Inst. of Fine Mechanics and Optics)

Track Classification: Structure functions

Contribution ID: **247** Type: **not specified**

Confirmation of a new narrow mass state decaying into Upsilon(1S)gamma

Wednesday, 28 March 2012 16:18 (18 minutes)

Using the 1.3 fb^{-1} sample of D0 RunII data taken between 2002 and 2006, we observe a new state decaying into $\Upsilon(1S) + \gamma$, where the $\Upsilon(1S)$ is detected by its decay into an oppositely charged muon pair, and the photon is reconstructed by its conversion into an electron-positron pair. The significance of this structure is six standard deviations and its mass is consistent with that of the state recently discovered by the ATLAS Collaboration.

Primary authors: BUSZELLO, Claus (Uppsala University (SE)); BUSZELLO, Claus (Department of Physics and Astronomy-University of Uppsala); BUSZELLO, Claus (Uppsala University); WILLIAMS, Mark

Presenters: BUSZELLO, Claus (Uppsala University (SE)); BUSZELLO, Claus (Department of Physics and Astronomy-University of Uppsala); BUSZELLO, Claus (Uppsala University)

Session Classification: Heavy flavours

Track Classification: Heavy flavours

Contribution ID: **248** Type: **not specified**

On the NNLO QCD corrections to deep-inelastic heavy-quark production

Wednesday, 28 March 2012 09:10 (20 minutes)

We present exact results for the heavy-quark structure functions in deep-inelastic scattering (DIS) in different kinematical regimes and to next-to-next-to-leading order (NNLO) in perturbative QCD. We combine the behavior near threshold, in the high-energy limit and at asymptotically large $Q2 \gg m2$ to derive approximate expressions at NNLO accuracy.
The remaining theoretical uncertainties of this approximation are negligible except in a region of small-x and low $Q2$ and we illustrate the improvement in precision predictions for heavy-quark DIS.

Primary author: MOCH, Sven-Olaf (DESY, Zeuthen)

Presenter: MOCH, Sven-Olaf (DESY, Zeuthen)

Session Classification: Combined: Heavy flavours/structure functions

Track Classification: Heavy flavours/structure functions

Contribution ID: **249** Type: **not specified**

Inclusive D- and B-Meson Production at the LHC

Tuesday, 27 March 2012 09:00 (18 minutes)

I present predictions for the inclusive production of D- and B-mesons at the CERN LHC in the general-mass variable-flavor-number scheme at next-to-leading order, an approach which takes into account the finite mass of the heavy quarks. Numerical results are compared to data where available. Measurements at large rapidities have the potential to pin down models of intrinsic charm.

Primary author: SPIESBERGER, Hubert (Univ. Mainz)

Presenter: SPIESBERGER, Hubert (Univ. Mainz)

Session Classification: Heavy flavours

Track Classification: Heavy flavours

Contribution ID: **250** Type: **not specified**

Constraining the intrinsic charm/bottom content of the nucleon via photon + heavy quark production

Tuesday, 27 March 2012 11:00 (18 minutes)

The production of a prompt photon in association with a heavy-quark (charm or bottom) jet is a versatile process that can be used to study the structure of the proton and the nucleus. This process is extremely sensitive to the heavy quark PDFs, and can thus directly probe for intrinsic charm or bottom contributions. We present various predictions of this process at different colliders and detectors (D0,CDF, RHIC, ATLAS, CMS and LHCb) portraying how the different kinematic ranges affect the constraint of IC/IB.

Primary author: KOVARIK, Karol (KIT)

Co-author: STAVREVA, Tzvetalina (LPSC Grenoble)

Presenter: KOVARIK, Karol (KIT)

Session Classification: Heavy flavours

Track Classification: Heavy flavours

Contribution ID: **251** Type: **not specified**

Differential and total cross sections for top pair and single top production

Tuesday, 27 March 2012 14:36 (18 minutes)

I present theoretical results at approximate NNLO for top quark production at the LHC at 7 and 8 TeV energy. Total cross sections are shown for ttbar production and single top production in the t and s channels and via associated tW production.Top quark transverse momentum and rapidity distributions are also presented.

Primary author: KIDONAKIS, Nikolaos (Kennesaw State University)

Presenter: KIDONAKIS, Nikolaos (Kennesaw State University)

Session Classification: Heavy flavours

Track Classification: Heavy flavours

Contribution ID: **252** Type: **not specified**

New Heavy Flavor Contributions to the DIS Structure Function F_2(x,Q2) at O(\alpha_s3)

Wednesday, 28 March 2012 08:30 (20 minutes)

We report on recent results obtained for the massive Wilson coefficients which contribute to the structure function $F_2(x, Q2)$ at $O(\alpha_s 2)$ and $O(\alpha_s 3)$ in the region $Q2/m2$
$gsim10$ for general values of
the Mellin variable N as well as to corresponding operator matrix elements emerging in FVNSs.

Primary author: BLUEMLEIN, Johannes (DESY, Zeuthen)

Presenter: BLUEMLEIN, Johannes (DESY, Zeuthen)

Session Classification: Combined: Heavy flavours/structure functions

Track Classification: Heavy flavours/structure functions

Contribution ID: **253** Type: **not specified**

Soft-gluon resummation in heavy top-pair production at hadron colliders

Tuesday, 27 March 2012 14:18 (18 minutes)

The current state of the art in top-pair production is based on threshold resummation on top of the exact NLO result. We will examine the role - and the limitations - of the soft-gluon approximation in describing precision top-pair production at hadron colliders. We will demonstrate that the only way to substantially improve our knowledge of this observable is through fixed order calculation at NNLO. The status of this ongoing calculation will also be presented.

Primary author: MITOV, Alexander (CERN)

Presenter: MITOV, Alexander (CERN)

Session Classification: Heavy flavours

Track Classification: Heavy flavours

Contribution ID: **254** Type: **not specified**

Central Exclusive Production in $p\bar{p}$ Collisions at CDF II

Tuesday, 27 March 2012 14:00 (20 minutes)

We report central exclusive production results studied at the Run II Collider Detector at Fermilab with focus on our recently published paper on the first observation of exclusive γγ production in $p\bar{p}$ collisions at $\sqrt{s}$ = 1.96 TeV at the Tevatron. In particular, starting from earlier studies by the CDF collaboration, we discuss exclusive dijet, dilepton, Z, J/Ψ and χc productions and finally our recent observation of exclusive diphoton production. Whereas the lepton pairs and Z are purely QED processes, the J/Ψ is produced by photo-production, mediated by photon-pomeron exchange (γ + IP). The double pomeron exchange producing the exclusive dijet, Charmonium and diphotons via quark-loop is of great interest looking towards the possibilities of finding an exclusive Higgs at the Large Hadron Collider (if it exists). The production mechanism for an exclusive Higgs is similar via a heavy quark-loop with no other particles produced.

Primary author: Dr BRÜCKEN, Erik (Helsinki Institute of Physics (FI))

Presenter: Dr BRÜCKEN, Erik (Helsinki Institute of Physics (FI))

Session Classification: Diffraction and vector mesons

Track Classification: Diffraction and vector mesons

Contribution ID: **255** Type: **not specified**

New results on diffractive t-distributions from CDF

New results on the recoil antiproton 4-momentum transfer distribution, t, and a search for a diffractive dip in proton-antiproton inclusive and dijet diffractive production are presented in the range 0<|t|<4 (GeV/c)2, measured by CDF II at √1.96 TeV. The results are compared with similar measurements from diffractive deep inelastic scattering experiments at HERA, diffractive pp collisions at the LHC, and theoretical expectations.

Primary author: GOULIANOS, Konstantin (Rockefeller University (US))

Presenter: GOULIANOS, Konstantin (Rockefeller University (US))

Track Classification: Diffraction and vector mesons

Contribution ID: **256** Type: **not specified**

Phenomenology of Sivers Effect with TMD Evolution

Wednesday, 28 March 2012 16:50 (20 minutes)

Following the TMD evolution scheme recently proposed for the Sivers distribution function, we propose a simple strategy to take into account this TMD Q^2 dependence in our phenomenological extraction of the Sivers function from SIDIS data. New results are presented and possible future applications are discussed.

Primary author: BOGLIONE, Mariaelena (University of Turin)

Presenter: BOGLIONE, Mariaelena (University of Turin)

Session Classification: Spin physics

Track Classification: Spin physics

Contribution ID: **257** Type: **not specified**

CMS: Measurements of total and differential top-production cross sections

Tuesday, 27 March 2012 15:12 (18 minutes)

We present precise measurements of the top quark pair production cross section at 7 TeV, performed using CMS data collected in 2010-2011. The total cross section is measured in the lepton+jets, dilepton and fully hadronic channels, including the tau-dilepton and tau+jets modes. The results are combined and confronted with precise theory calculations. We also obtain an indirect constraint on the top quark mass through its relation to the cross section. Various differential cross sections are measured as well and compared with theoretical models. Measurements of the top pair invariant mass distribution are used to search for new particles decaying to top pairs. Further results include measurements of the top pair charge asymmetry and single top production.

Primary authors: TROPIANO, Antonio (Universita e INFN (IT)); MEYER, Arnd (Rheinisch-Westfaelische Tech. Hoch. (DE))

Presenter: TROPIANO, Antonio (Universita e INFN (IT))

Session Classification: Heavy flavours

Track Classification: Heavy flavours

Contribution ID: **258** Type: **not specified**

Searches for physics beyond the standard model with top quarks at CMS

Thursday, 29 March 2012 09:54 (18 minutes)

Several searches of physics beyond the standard model involving top quarks in the final state are presented. These searches encompass top decays in FCNC channels, resonances decaying in ttbar final states, new heavy quarks decaying to top quarks, production of same-sign quarks, and recent tests of various new physics models.

Primary author: MEYER, Arnd (Rheinisch-Westfaelische Tech. Hoch. (DE))

Presenter: BAZTERRA, Victor Eduardo (University of Illinois at Chicago (US))

Session Classification: Combined: Electroweak and searches/heavy flavours

Track Classification: Electroweak and searches/heavy flavours

Contribution ID: **260** Type: **not specified**

The NLO jet vertex for Mueller-Navelet and forward jets in the small-cone approximation

Thursday, 29 March 2012 09:00 (20 minutes)

We calculate in the next-to-leading order the impact factor (vertex) for the production of a forward high-p_T jet, in the approximation of small aperture of the jet cone in the pseudorapidity-azimuthal angle plane. The final expression for the vertex turns out to be simple and easy to implement in numerical calculations.

Primary author: Prof. PAPA, Alessandro (University of Calabria and INFN Cosenza (Italy))

Presenter: Prof. PAPA, Alessandro (University of Calabria and INFN Cosenza (Italy))

Session Classification: Diffraction and vector mesons

Track Classification: Diffraction and vector mesons

Contribution ID: **261** Type: **not specified**

Diffractive pQCD mechanisms of exclusive production of $b\bar{b}$ dijets and W^+W^- pairs in proton-proton collisions

Tuesday, 27 March 2012 17:30 (20 minutes)

We discuss central exclusive production of W^+W^- pairs in proton-proton collisions at LHC. Several observables related to this
process are calculated. Predictions for the total cross section and differential distributions in rapidity and transverse momentum of $W^\pm$ and WW invariant mass are presented.
We show results for different polarization states of the final $W^\pm$ bosons. We discuss both $\gamma\gamma \to W^+W^-$ mechanism as well as a new mechanism of exclusive diffractive production.
The amplitude for the latter process is calculated in the Durham model used recently to estimate cross section for exclusive production of Higgs boson, gluon-gluon, $b\bar{b}$ dijets as well as for pairs of photons. Some results for those processes will be discussed briefly and compared to the CDF collaboration data.
The amplitude for the $pp \to ppW^+W^-$ process is expressed in terms of off-diagonal unintegrated gluon distribution functions.
We compare the two (QED and QCD) types of contributions.
The phase space integrated diffractive contribution when separated
is only a small fraction of fb compared to 115.4 fb of the $\gamma\gamma$ contribution.
The $\gamma\gamma$ contribution dominates at small four-momentum transfers squared in the proton lines as well as in a broad range of W^+W^- invariant masses.
This opens a possibility of searches for anomalous four-boson
$\gamma\gamma W^+W^-$ coupling due to new physics
beyond Standard Model. The example are Higgsless models.
The presentation will be based mostly on our recent study.
I will also show some published results on exclusive production of Higgs and dijets.

Primary author: Prof. SZCZUREK, Antoni (Institute of Nuclear Physics Krakow (Poland))

Presenter: Prof. SZCZUREK, Antoni (Institute of Nuclear Physics Krakow (Poland))

Session Classification: Diffraction and vector mesons

Track Classification: Diffraction and vector mesons

Contribution ID: **262** Type: **not specified**

News on Exclusive Production of the BSM Higgs Bosons

Tuesday, 27 March 2012 15:00 (20 minutes)

We investigate the prospects for Central Exclusive Diffractive (CED)
production of BSM Higgs bosons at the LHC using forward proton detectors installed at 220~m and 420~m distance around ATLAS and / or CMS.
We update a previous analysis for the MSSM taking into account
improvements in the theoretical calculations and the most
recent exclusion bounds from the LHC.
We extend the MSSM analysis to new benchmark scenarios that are in
agreement with the cold dark matter relic abundance and other precision measurements. Finally, we comment on the determination of Higgs spin-parity and coupling structures at the LHC and show that the forward proton mode could provide crucial information on the
cp properties of the Higgs
bosons.

Primary author: Dr TASEVSKY, Marek (Acad. of Sciences of the Czech Rep. (CZ))

Presenter: Dr TASEVSKY, Marek (Acad. of Sciences of the Czech Rep. (CZ))

Session Classification: Diffraction and vector mesons

Track Classification: Diffraction and vector mesons

Contribution ID: **263** Type: **not specified**

Drell Yan at the LHC near the forward direction

I report on a theoretical study of the Drell Yan production process in the region of very small x. Particular attention is given to the breakdown of factorization.

Primary author: , Jochen Bartels

Presenter: , Jochen Bartels

Track Classification: Diffraction and vector mesons

Contribution ID: **264** Type: **not specified**

Probing colour flow with jet vetoes

Wednesday, 28 March 2012 09:50 (20 minutes)

I discuss jet vetoes as a means of probing colour flow in hard scattering processes in hadronic collisions. As an example, I describe a calculation of the dijet cross-section with a jet veto which resums the leading logarithms of the veto scale and it is matched to a fixed-order computation.
I compare this prediction to the measurement performed by the ATLAS collaboration as well as to other different approaches.
Finally, I outline future developments in this research area.

Primary author: MARZANI, Simone (IPPP / Durham University)

Presenter: MARZANI, Simone (IPPP / Durham University)

Session Classification: Combined: Hadronic final states/diffraction and vector mesons

Track Classification: Hadronic final states/diffraction and vector mesons

Contribution ID: **265** Type: **not specified**

A holographic light-cone wavefunction for the rho wavefunction

Wednesday, 28 March 2012 16:40 (20 minutes)

We obtain a very good description of the current HERA data on diffractive rho electroproduction using a holographic
light-cone wavefunction for the rho meson. This holographic wavefunction is obtained using the Brodsky and de Teramond
correspondance between hadronic modes in AdS space and light-cone wavefunctions in physical spacetime. We also show the
corresponding holographic Distribution Amplitude is consistent with Sum Rules and lattice predictions.

Primary author: Prof. SANDAPEN, Ruben (University of Moncton (Canada))

Presenter: Prof. SANDAPEN, Ruben (University of Moncton (Canada))

Session Classification: Diffraction and vector mesons

Track Classification: Diffraction and vector mesons

Contribution ID: **266** Type: **not specified**

Diffractive Vector Meson Cross Sections from BK evolution with Impact Parameter

Thursday, 29 March 2012 11:40 (20 minutes)

In previous numerical work the solution to the BK evolution equation with impact parameter dependence was calculated with modeled confinement effects. This solution is used to calculate diffractive cross sections for the vector mesons J/Psi, Rho, and Phi. In order to bring the numerical results into agreement with HERA data modification to the photon wavefunction is necessary. This correction is discussed as well as effects on the ability to describe the F2 structure function data.

Primary author: Dr BERGER, Jeffrey (Penn State University (USA))

Presenter: Dr BERGER, Jeffrey (Penn State University (USA))

Session Classification: Diffraction and vector mesons

Track Classification: Diffraction and vector mesons

Contribution ID: **267** Type: **not specified**

On the timelike splitting functions at NNLO and beyond

Thursday, 29 March 2012 10:00 (20 minutes)

We present the third-order (NNLO) contributions to the timelike splitting functions governing the evolution of parton fragmentation functions in QCD. The hitherto missing quark-gluon and gluon-quark quantities have been derived by studying physical evolution kernels for photon- and Higgs-exchange DIS structure functions and their counterparts in semi-inclusive annihilation, together with constraints from the momentum sum rule and supersymmetric limit. A numerically tolerable uncertainty remains in the quark-gluon case which does not affect the endpoint logarithms for small and large momentum fractions x. The stability of the perturbative expansion at small x is spoiled by large double logarithms up to alpha_s^n ln^{2*n-2} x. Much more stable results are obtained when the fixed-order results are combined with the new small-x resummation up to the next-to-next-to-leading (NNL) logarithms (the derivation of which is discussed in another contribution).

Primary author: VOGT, Andreas (University of Liverpool)

Co-authors: ALMASY, Andrea (University of Liverpool); MOCH, Sven-Olaf (DESY Zeuthen)

Presenter: VOGT, Andreas (University of Liverpool)

Session Classification: Combined: Hadronic final states/structure functions

Track Classification: Hadronic final states/structure functions

Contribution ID: **268** Type: **not specified**

Resummation of large-x and small-x double logarithms in DIS and semi-inclusive e+e- annihilation

Wednesday, 28 March 2012 11:30 (20 minutes)

Recently a method has been developed to extend the resummation of large-x double logarithms in inclusive DIS and semi-inclusive e^+e^- annihilation (SIA) to terms and quantities not addressed by the soft-gluon exponentiation. The N^nLL (leading log, next-to-leading log etc) resummation is based on N^nLO fixed-order results, the large-x structure of DIS and SIA in dimensional regularization and the all-order factorization of mass singularities. The same formalism can be applied to the dominant x-1 ln^{2*n-a-n_0} x terms in SIA splitting functions and coefficient functions and the (in the flavour-singlet case) subdominant x0 ln^{2*}n-a-n_0} x contributions to (most of) their DIS counterparts. The talk addresses the theoretical basics of these resummations and presents the main numerical results which, despite all formal similarities, are qualitatively different for DIS and SIA.

Primary author: VOGT, Andreas (University of Liverpool)

Co-authors: ALMASY, Andrea (University of Liverpool); KOM, Steve (University of Liverpool)

Presenter: VOGT, Andreas (University of Liverpool)

Session Classification: Combined: Hadronic final states/diffraction and vector mesons

Track Classification: Hadronic final states/diffraction and vector mesons

Contribution ID: **269** Type: **not specified**

Jet-veto efficiencies at all orders in QCD

Tuesday, 27 March 2012 11:00 (20 minutes)

We present accurate (NLL+NNLO) predictions for jet-veto efficiencies for Higgs and Z production at the LHC, obtained with the automated resummation program CAESAR. We discuss all sources of theoretical uncertainties associated to the presented results, highlighting which further calculations would be needed in order to reduce them.

Primary author: BANFI, Andrea (Freiburg U)

Co-author: ZANDERIGHI, Giulia (University of Oxford (GB))

Presenter: BANFI, Andrea (Freiburg U)

Session Classification: Hadronic final states

Track Classification: Hadronic final states

Contribution ID: **270** Type: **not specified**

Boosted hadronically decaying tops in new physics searches

Wednesday, 28 March 2012 17:00 (20 minutes)

Top momentum reconstruction often plays an important role for new physics signal reconstruction at the LHC. In principle for a hadronically decaying top, it is possible to reconstruct its momentum fully but one suffers from large QCD and combinatorial backgrounds.
Starting from geometrically large sizes of jets and looking into their substructure, we can efficiently reduce these background. We develop HEPTopTagger by adopting a combination of the Cambridge/Aachen algorithm and the mass drop criterion. As application for physics cases, we illustrate the scalar top reconstruction and the top forward-backward asymmetry.

Primary author: TAKEUCHI, Michihisa (Heidelberg U)

Co-author: SPANNOWSKY, Michael (University of Durham (GB))

Presenter: ⌧⌧, ⌧⌧ (Heidelberg)

Session Classification: Hadronic final states

Track Classification: Hadronic final states

Contribution ID: **271** Type: **not specified**

Forward Jets and Small-x Physics at the LHC

Wednesday, 28 March 2012 09:30 (20 minutes)

We discuss QCD aspects of forward jet hadroproduction, including issues on factorization at large rapidities; shower Monte Carlo implementations; the role of forward jet and energy flow measurements at the LHC to investigate contributions to parton showers from large-angle gluon radiation and from multiple parton interactions.

Primary author: HAUTMANN, Francesco (University of Oxford (GB))

Co-author: JUNG, Hannes (Deutsches Elektronen-Synchrotron (DE))

Presenter: HAUTMANN, Francesco (University of Oxford (GB))

Session Classification: Combined: Hadronic final states/diffraction and vector mesons

Track Classification: Hadronic final states/diffraction and vector mesons

Contribution ID: **272** Type: **not specified**

Heavy Quark Production in the ACOT Scheme at NNLO and N3LO

Wednesday, 28 March 2012 08:50 (20 minutes)

We analyze the properties of the ACOT scheme for heavy quark production and make use of the MS-bar massless results at NNLO and N3LO for the structure functions F2 and FL in neutral current deep-inelastic scattering to estimate the higher order corrections. For this purpose we decouple the heavy quark mass entering the phase space from the one entering the dynamics of the short distance cross section. We show numerically that the phase space mass is generally more important. Therefore, the dominant heavy quark mass effects at higher orders can be taken into account using the massless Wilson coefficients together with an appropriate slow-rescaling prescription implementing the phase space constraints. Combining the exact ACOT scheme at NLO with these expressions should provide a good approximation to the missing full calculation in the ACOT scheme at NNLO and N3LO.

Primary author: OLNESS, Fred (Southern Methodist University)

Presenter: OLNESS, Fred (Southern Methodist University)

Session Classification: Combined: Heavy flavours/structure functions

Track Classification: Heavy flavours/structure functions

Contribution ID: **273** Type: **not specified**

NNPDF determination of polarized parton distributions of the nucleon at NLO

Tuesday, 27 March 2012 17:00 (20 minutes)

We present a preliminary determination of a set of polarized parton distributions of the nucleon, at next-to-leading order, from a global set of deep-inelastic scattering data. The determination is based on the NNPDF methodology: a Monte Carlo sampling with neural networks used as unbiased interpolants. This method, which has already been applied to a determination of unpolarized parton distributions, is designed to provide a faithful and statistically sound representation of the uncertainty on parton distributions. We discuss the general NNPDF procedure to parton fitting, focusing on the algorithm used to determine the optimal fit. We also present a preliminary set of polarized PDFs, compared to other parton extractions recently obtained by other collaborations. In particular, we show that "traditional" fits tend to underestimate the PDF uncertainty, particularly for the gluon, which is basically unconstrained by inclusive DIS data.

Primary author: NOCERA, Emanuele Roberto (Universita degli Studi di Milano and INFN, Milano)

Presenter: NOCERA, Emanuele Roberto (Universita degli Studi di Milano and INFN, Milano)

Session Classification: Spin physics

Track Classification: Spin physics

Contribution ID: **278** Type: **not specified**

Status of SM Higgs searches at the Tevatron

Tuesday, 27 March 2012 10:06 (24 minutes)

We present results from the search for a standard model Higgs boson using up to 10/fb of proton-antiproton collision data produced by the Fermilab Tevatron at a center-of-mass energy of 1.96 TeV. The data were recorded by the CDF and D0 Detectors between March 2001 and September of 2011. Updated results from many exclusive channels as well as the combined Tevatron search are presented.

Primary author: KNOEPFEL, Kyle (F)

Presenter: KNOEPFEL, Kyle (F)

Session Classification: Electroweak and searches

Track Classification: Electroweak and searches

Contribution ID: **279** Type: **not specified**

BSM Higgs and other bump searches at the Tevatron

Tuesday, 27 March 2012 12:12 (18 minutes)

In Beyond Standard Model (BSM) theories such as supersymmetry,
the electroweak symmetry breaking mechanism predicts one or
several Higgs bosons with different couplings and masses compared to the Standard Model one. We will present the constraints on BSM theories coming from searches for exotic Higgs bosons from the CDF and D0 collaborations at the Tevatron. In addition, other bump searches will also be presented, such as in the dijet mass spectrum in W+2jets events.

Primary author: CHAPON, Emilien (Centre d'Etudes de Saclay (CEN Saclay)-Unknown-Unknown)

Presenter: CHAPON, Emilien (Centre d'Etudes de Saclay (CEN Saclay)-Unknown-Unknown)

Session Classification: Electroweak and searches

Track Classification: Electroweak and searches

Contribution ID: **280** Type: **not specified**

WZ/WW at the Tevatron (including WW/WZ+jets)

Wednesday, 28 March 2012 14:24 (18 minutes)

WZ/WW at the Tevatron (including WW/WZ+jets)

Primary author: VESTERINEN, Mika (University of Manchester)

Presenter: VESTERINEN, Mika (University of Manchester)

Session Classification: Combined: Electroweak and searches/structure functions

Track Classification: Electroweak and searches/structure functions

Contribution ID: **281** Type: **not specified**

W mass measurements from the Tevatron

Wednesday, 28 March 2012 14:42 (18 minutes)

The CDF collaboration has analyzed 2.2 fb-1 of Run II electron and muon data for a new precise determination of the mass of the W boson. The result is 80.387 +/- 0.019 GeV/c2, which is more precise than the combination of all preceding measurements. An update from D0 is also expected.

Primary author: RIDDICK, Tom

Presenter: RIDDICK, Tom

Session Classification: Combined: Electroweak and searches/structure functions

Track Classification: Electroweak and searches/structure functions

Contribution ID: **282** Type: **not specified**

QCD fits in diffractive DIS revisited

Tuesday, 27 March 2012 11:00 (20 minutes)

A new method for the extraction of diffractive parton distributions is presented which avoids the use of Regge theory ansatz and is in much closer relation with the factorization theorem for diffractive hard processes.

Primary author: CECCOPIERI, Federico Alberto (Fondazione Angelo Della Riccia Ente Morale)

Presenter: CECCOPIERI, Federico Alberto (Fondazione Angelo Della Riccia Ente Morale)

Session Classification: Diffraction and vector mesons

Track Classification: Diffraction and vector mesons

Contribution ID: **287** Type: **not specified**

Quark and Gluon Tagging at the LHC

Tuesday, 27 March 2012 17:30 (20 minutes)

Distinguishing light-quark jets from gluon jets on an event-by-event basis could significantly enhance the reach for many new physics searches at the Large Hadron Collider. Through an exhaustive search of existing and novel jet substructure observables, we find that a multivariate approach can filter out over 95% of the gluon jets while keeping more than half of the light-quark jets. Moreover, a combination of two simple variables, the charge track multiplicity and the p_T-weighted linear radial moment (girth), can achieve similar results. I will discuss applications and address theoretical issues in the definitions of quark and gluon jets.

Primary author: GALLICCHIO, Jason (UC Davis)

Co-author: SCHWARTZ, Matthew (Harvard University)

Presenter: GALLICCHIO, Jason (UC Davis)

Session Classification: Hadronic final states

Track Classification: Hadronic final states

Contribution ID: **290** Type: **not specified**

Uncertainties in Determining Parton Distributions at Large x: Results from the CJ Collaboration

Tuesday, 27 March 2012 12:15 (20 minutes)

The results of a global next-to-leading order fit of parton distribution functions in which cuts on W and Q are relaxed, thereby including more data at high values of x, will be reported. Effects of target mass corrections (TMC), higher twist contributions, and nuclear corrections for deuterium data are significant in the large-x region. The leading twist parton distributions are found to be stable to TMC model variations as long as higher twist contributions are also included. Importantly, uncertainties in parton distribution functions (PDFs) at large x arising from nuclear effects in deuterium F2 structure function data are evaluated. Within this global analysis, the impact on the PDFs from uncertainties in the deuteron wave function at short distances and nucleon off-shell effects, the use of relativistic kinematics, as well as the use of less a restrictive parametrization of the d/u ratio, have been assessed. In particular the d-quark and gluon PDFs are found to vary significantly with the choice of nuclear model. The impact of these uncertainties on the determination of the neutron structure function, and on W boson production and parton luminosity at the Tevatron and the LHC are highlighted. Prospects for new measurements sensitive to the d-quark and gluon distributions but insensitive to nuclear corrections will also be discussed.

Primary author: KEPPEL, Cynthia (Hampton University)

Presenter: KEPPEL, Cynthia (Hampton University)

Session Classification: Structure functions

Track Classification: Structure functions

Contribution ID: **293** Type: **not specified**

Searches at H1

Tuesday, 27 March 2012 17:06 (18 minutes)

Merged abstract of:
“Search for Contact Interactions in ep Collisions at HERA”
“Search for First Generation Leptoquarks in ep Collisions at HERA”

Primary author: PIRUMOV, Hayk (PI Heidelberg)

Presenter: PIRUMOV, Hayk (PI Heidelberg)

Session Classification: Electroweak and searches

Track Classification: Electroweak and searches

Contribution ID: **294** Type: **not specified**

Searches at ZEUS

Tuesday, 27 March 2012 17:24 (18 minutes)

Merged abstract of:
“Search for Single-Top Production in ep Collisions at HERA”
“A search for resonance decays to lepton+jet at HERA and limits on leptoquarks”

Primary author: ANTONELLI, Stefano (Universita e INFN)

Presenter: ANTONELLI, Stefano (Universita e INFN)

Session Classification: Electroweak and searches

Track Classification: Electroweak and searches

Contribution ID: **295** Type: **not specified**

Results from NA48 and NA62

Tuesday, 27 March 2012 17:42 (18 minutes)

Merged abstract:
“High precision measurement of the form factors of the semileptonic decays K+- -> pi0 l+- nu (Kl3)”
“Rare kaon decay measurements with NA62 minimum bias data.”
“First Measurement of the very rare Decay K+ -> pi+ pi0 e+ e-”
“Lepton Universality Tests in Kaon Decays at NA62”

Primary author: PICCINI, Mauro (Universita e INFN (IT))

Presenter: PICCINI, Mauro (Universita e INFN (IT))

Session Classification: Electroweak and searches

Track Classification: Electroweak and searches

Contribution ID: **297** Type: **not specified**

W,Z production at ATLAS, constraints on parton density functions and determination of the strange sea density

Tuesday, 27 March 2012 09:40 (30 minutes)

Merged abstract:
“W/Z production at ATLAS, and constraints on parton density functions”
“QCD analysis of the ATLAS W-> lnu and Z ->ll cross-sections measurements and determination of the strange sea density”

Primary author: Prof. OREGLIA, Mark (University of Chicago (US))

Presenter: KLEIN, Uta (University of Liverpool (GB))

Session Classification: Structure functions

Track Classification: Structure functions

Contribution ID: **299** Type: **not specified**

Progress in the dynamical parton distributions

Tuesday, 27 March 2012 11:50 (25 minutes)

Different theoretical improvements and the inclusion of alternative data sets in the determination of dynamical parton distribution functions are reported. Highlights in the ongoing developments as well as the role of the input scale in parton analysis are discussed.

Primary author: JIMENEZ-DELGADO, Pedro (Jefferson Lab)

Presenter: JIMENEZ-DELGADO, Pedro (Jefferson Lab)

Session Classification: Structure functions

Track Classification: Structure functions

Contribution ID: **300** Type: **not specified**

Impact of LHC data on (NN)PDFs

Tuesday, 27 March 2012 11:00 (25 minutes)

A determination of parton distribution functions with reliable estimation of associated uncertainties is a key ingredient for exploiting the full physics potential of the experiments at the LHC collider. On the other hand, measurements from the LHC will provide important constraints on PDFs in kinematic regions which are so far not covered by data included in global analyses. In this talk I will discuss the effect of including recent LHC vector boson and inclusive jet production measurements into the NNPDF global parton fit. I will also show how the impact of including new data in a global fit can be rapidly assessed using a method based on Bayesian reweighting.

Primary author: Dr UBIALI, Maria (RWTH Aachen University)

Presenter: Dr UBIALI, Maria (RWTH Aachen University)

Session Classification: Structure functions

Track Classification: Structure functions

Contribution ID: **301** Type: **not specified**

Progress in CTEQ-TEA PDF analysis

Tuesday, 27 March 2012 14:00 (25 minutes)

I discuss latest developments in the CTEQ-TEA PDF analysis: NNLO PDFs, benchmarking of NLO and NNLO cross sections included in the global fits, analysis of constraints on PDFs with the method of PDF-induced correlations.

Primary author: NADOLSKY, Pavel (Southern Methodist University)

Presenter: NADOLSKY, Pavel (Southern Methodist University)

Session Classification: Structure functions

Track Classification: Structure functions

Contribution ID: **302** Type: **not specified**

ABM11 PDFs and benchmarks at NNLO

Tuesday, 27 March 2012 11:25 (25 minutes)

We present a determination of the nucleon parton distribution functions (ABM11) and the strong coupling constant α_s at next-to-next-to-leading order (NNLO) in QCD based on world data for deep-inelastic scattering and fixed-target data for Drell-Yan process. The analysis is performed in the fixed-flavor number scheme for $n_f = 3, 4, 5$ and uses the \MSbar scheme for α_s and the heavy quark masses. The fit results are compared with other NNLO PDFs and used to compute the benchmark cross sections at hadron colliders to NNLO accuracy.

Primary author: ALEKHIN, Sergey

Presenter: ALEKHIN, Sergey

Session Classification: Structure functions

Track Classification: Structure functions

Contribution ID: **303** Type: **not specified**

An update on higher twist contributions to DIS structure functions

Tuesday, 27 March 2012 12:35 (20 minutes)

We report on a QCD re-analysis of the unpolarized non-singlet world data data in the valence region up to $O(\alpha_s^{3(4)})$ correlated to the value of the strong coupling constant $\alpha_s(M_Z 2)$ and the higher twist contributions. We investigate contributions of twist $\tau = 3$ and higher to the polarized structure functions $g_1(x, Q2)$ and $g_2(x, Q2)$.

Primary author: BLUEMLEIN, Johannes (DESY)

Presenter: BLUEMLEIN, Johannes (DESY)

Session Classification: Structure functions

Track Classification: Structure functions

Contribution ID: **304** Type: **not specified**

BSM searches through heavy flavours at BaBar

Thursday, 29 March 2012 11:54 (18 minutes)

Merged abstract:
“Searches for new physics in CP-violation at BABAR”
“Lepton-number and lepton-flavor violation in B decays at BABAR”

Primary author: Dr BOMBEN, Marco (LPNHE - Univ. P. et Marie Curie (Paris VI) (FR) & CNRS)

Presenter: Dr BOMBEN, Marco (LPNHE - Univ. P. et Marie Curie (Paris VI) (FR) & CNRS)

Session Classification: Combined: Electroweak and searches/heavy flavours

Track Classification: Electroweak and searches/heavy flavours

Contribution ID: **305** Type: **not specified**

Searches for BSM physics with top quarks at ATLAS

Thursday, 29 March 2012 09:36 (18 minutes)

Merged abstract:
“Searches for new physics effect involving top quarks”
“Search for t tbar Resonances in p pbar collisions with the ATLAS detector at LHC”

Primary authors: Prof. OREGLIA, Mark (University of Chicago (US)); CALFAYAN, Philippe (Ludwig-Maximilians-Univ. Muenchen-Unknown-Unknown); CALFAYAN, Philippe (Ludwig-Maximilians-Univ. Muenchen (DE))

Presenters: CALFAYAN, Philippe (Ludwig-Maximilians-Univ. Muenchen-Unknown-Unknown); CALFAYAN, Philippe (Ludwig-Maximilians-Univ. Muenchen (DE))

Session Classification: Combined: Electroweak and searches/heavy flavours

Track Classification: Electroweak and searches/heavy flavours

Contribution ID: **307** Type: **not specified**

New COMPASS Results on Polarized Parton Distributions Inside the Nucleon

Tuesday, 27 March 2012 10:00 (25 minutes)

A short review of the COMPASS results concerning gluon polarization inside the nucleon, DG/G, is given including two new measurements: Firstly, a DG/G determination in leading order and in three bin of the gluon momentum fraction x_g from asymmetries in high-p_T hadron pair production for Q^2 >1 $(GeV/c)^2$; secondly, a preliminary next-to-leading order analysis based on open charm production, i.e. D mesons decaying via various channels. The latter result is obtained from our combined proton and deuteron data.
In addition the cross-section for the D^* production is given and kinematic distribution of the D^* are compared with the AROMA generator.
Finally results for the LO flavor separation of the three lightest quark polarized parton distributions.

Primary author: STOLARSKI, Marcin (LIP Laboratorio de Instrumentacao e Fisica Experimental de Part)

Presenter: STOLARSKI, Marcin (LIP Laboratorio de Instrumentacao e Fisica Experimental de Part)

Session Classification: Spin physics

Track Classification: Spin physics

Contribution ID: **308** Type: **not specified**

ATLAS top quark properties

Tuesday, 27 March 2012 17:06 (18 minutes)

Merged abstract:
“Top quark properties”
“Top quark pair properties”

Primary authors: Prof. OREGLIA, Mark (University of Chicago (US)); HIROSE, Minoru (Osaka University (JP)); HIROSE, Minoru (Osaka University)

Presenters: HIROSE, Minoru (Osaka University (JP)); HIROSE, Minoru (Osaka University)

Session Classification: Heavy flavours

Track Classification: Heavy flavours

Contribution ID: **309** Type: **not specified**

Exclusive and rare B decays in ATLAS

Thursday, 29 March 2012 11:18 (18 minutes)

Merged abstract:
“Limit on the branching fraction for the rare B-decay Bs->mumu in ATLAS”
“Exclusive B-Decays in ATLAS”

Primary authors: MUSTO, Elisa (Universita e INFN (IT)); Prof. OREGLIA, Mark (University of Chicago (US)); Dr MUSTO, elisa (ATLAS)

Presenters: MUSTO, Elisa (Universita e INFN (IT)); Dr MUSTO, elisa (ATLAS)

Session Classification: Combined: Electroweak and searches/heavy flavours

Track Classification: Electroweak and searches/heavy flavours

Contribution ID: **310** Type: **not specified**

D0 top mass and properties

Tuesday, 27 March 2012 16:48 (18 minutes)

Merged abstract:
“Measurement of the top quark mass at D0”
“Measurements of top quark properties at D0”

Primary authors: Dr VERZOCCHI, Marco (Albert-Ludwigs-Universitaet Freiburg (DE)); HEAD, Tim (The University of Manchester); HEAD, Timothy (University of Manchester)

Presenters: HEAD, Tim (The University of Manchester); HEAD, Timothy (University of Manchester)

Session Classification: Heavy flavours

Track Classification: Heavy flavours

Contribution ID: **311** Type: **not specified**

Properties and decays of b hadrons at D0

Wednesday, 28 March 2012 16:54 (18 minutes)

Merged abstract:
"Analysis of the decay $B_s^0 \to J/\psi K^+K^-$ $M(K^+K^-) > 1.35$~GeV"
"Measurement of the Λ_b lifetime in the $\Lambda_b \to J/\psi\Lambda$ exclusive decay channel using the full D0 dataset"

Primary authors: CAMACHO PEREZ, Enrique (Centro Invest. Estudios Avanz. IPN (MX)); WILLIAMS, Mark

Presenter: CAMACHO PEREZ, Enrique (Centro Invest. Estudios Avanz. IPN (MX))

Session Classification: Heavy flavours

Track Classification: Heavy flavours

Contribution ID: **312** Type: **not specified**

Jet cross section measurements with CMS

Thursday, 29 March 2012 09:40 (20 minutes)

Merged abstract:
“Dijet and Inclusive jet cross section measurements with CMS”
“Three jet event properties with the CMS experiment”

Primary author: KAYA, Ozlem (Bogazici University (TR))

Presenter: KAYA, Ozlem (Bogazici University (TR))

Session Classification: Combined: Hadronic final states/structure functions

Track Classification: Hadronic final states/structure functions

Contribution ID: **314** Type: **not specified**

Electroweak Gauge-Boson and Higgs Production at Small qT : Infrared Safety from the Collinear Anomaly

Tuesday, 27 March 2012 17:10 (20 minutes)

We discuss the differential cross sections for electroweak gauge-boson and Higgs production at small and very small transverse momentum q_T.
Large logarithms are resummed using soft-collinear effective theory.
The collinear anomaly generates a non-perturbative scale q^*, which protects the processes from receiving large long-distance hadronic contributions. A numerical comparison of our predictions with data on the transverse-momentum distribution in Z-boson production at the Tevatron and LHC is given.

Primary author: WILHELM, Daniel (Mainz U)

Co-authors: NEUBERT, Matthias; BECHER, Thomas (University of Bern)

Presenter: WILHELM, Daniel (Mainz U)

Session Classification: Hadronic final states

Track Classification: Hadronic final states

Contribution ID: **315** Type: **not specified**

Conformal symmetry and the relations between perturbative contributions to the Bjorken and Ellis-Jaffe sum rule of the polarized DIS

Thursday, 29 March 2012 09:50 (20 minutes)

Using operator-product expansion approach for the triangle
diagram of Axial-Vector-Vector currents symmetry I derive the singlet variant of the Crewther
relation, which is valid in the conformal -invariant limit
of perturbative approach. I demonstrate that in the conformal-invariant
limit of U(1)-model the non-singlet coefficient function of Bjorken and Ellis-Jaffe sum rule identically coincide with the coefficient function of singlet
contribution to Ellis-Jaffe sum rules in all orders of perturbation theory. The discussions of the possible generalizations to the conformal-invariant limit of SU(N_c) theory is presented.

Primary author: KATAEV, A. L. (Institute for Nuclear Research of the Russian Academy of Sciences, Moscow, Russia)

Presenter: KATAEV, A. L. (Institute for Nuclear Research of the Russian Academy of Sciences, Moscow, Russia)

Session Classification: Spin physics

Track Classification: Spin physics

Contribution ID: **316** Type: **not specified**

Z' production in an extended MSSM

Wednesday, 28 March 2012 13:30 (18 minutes)

Searching for heavy neutral gauge bosons Z', predicted in extensions of the Standard Model based on a U(1)' gauge symmetry, is among the main new physics investigations undertaken by the experiments at the Tevatron and at the Large Hadron Collider.
I will discuss study Z' phenomenology at hadron colliders according to several U(1)'-based models and in the Sequential Standard Model. In particular, as far as its decay is concerned, we shall include possible Z' decays into supersymmetric particles, besides the Standard Model modes so far investigated. Results on branching ratios and cross sections will be presented, as a function of the MSSM and U(1)' parameters, which will be varied within suitable ranges. Special attention will be paid to the decay into chargino, neutralino and charged-slepton pairs and gauge the feasibility to discover supersymmetry through this channel at the LHC.

Primary author: CORCELLA, Gennaro

Presenter: CORCELLA, Gennaro

Session Classification: Combined: Electroweak and searches/structure functions

Track Classification: Electroweak and searches/structure functions

Contribution ID: **321** Type: **not specified**

Impact of future neutrino experiments to DIS

Tuesday, 27 March 2012 11:25 (25 minutes)

none

Primary author: MORFIN, Jorge G. (Fermilab)

Presenter: MORFIN, Jorge G. (Fermilab)

Session Classification: Future of DIS

Track Classification: Future of DIS

Contribution ID: **322** Type: **not specified**

Status of TMDs and impact of an EIC

Tuesday, 27 March 2012 14:00 (25 minutes)

none

Primary author: YUAN, Feng (LBL)

Presenter: YUAN, Feng (LBL)

Session Classification: Combined: Future of DIS/spin physics

Track Classification: Future of DIS/spin physics

Contribution ID: **323** Type: **not specified**

Gluon sivers and experimental considerations for TMDs

Tuesday, 27 March 2012 14:25 (25 minutes)

none

Primary author: BURTON, Tom (BNL)

Presenter: BURTON, Tom (BNL)

Session Classification: Combined: Future of DIS/spin physics

Track Classification: Future of DIS/spin physics

Contribution ID: **324** Type: **not specified**

GPDs experimental

Tuesday, 27 March 2012 14:50 (25 minutes)

none

Primary author: Dr FAZIO, Salvatore (Brookhaven National Laboratory)

Presenter: Dr FAZIO, Salvatore (Brookhaven National Laboratory)

Session Classification: Combined: Future of DIS/spin physics

Track Classification: Future of DIS/spin physics

Contribution ID: **326** Type: **not specified**

Helicity PDFs at an EIC: quantitative appraisal

Tuesday, 27 March 2012 15:40 (25 minutes)

none

Primary author: STRATMANN, Marco (Univ. Regensburg/Univ. Wuerzburg)

Presenter: STRATMANN, Marco (Univ. Regensburg/Univ. Wuerzburg)

Session Classification: Combined: Future of DIS/spin physics

Track Classification: Future of DIS/spin physics

Contribution ID: **329** Type: **not specified**

LHeC Linac-Ring and Ring-Ring Accelerator Designs

Thursday, 29 March 2012 11:00 (40 minutes)

none

Primary author: SCHULTE, Daniel (CERN)

Presenter: SCHULTE, Daniel (CERN)

Session Classification: Combined: Future of DIS/structure functions

Track Classification: Future of DIS/structure functions

Contribution ID: **330** Type: **not specified**

LHeC Interaction Region

Wednesday, 28 March 2012 14:10 (30 minutes)

none

Primary author: TOMAS GARCIA, Rogelio (CERN)

Presenter: TOMAS GARCIA, Rogelio (CERN)

Session Classification: Future of DIS

Track Classification: Future of DIS

Contribution ID: **331** Type: **not specified**

The LHeC Central Detector

Wednesday, 28 March 2012 13:30 (40 minutes)

none

Primary author: POLINI, Alessandro (Universita e INFN (IT))

Presenter: POLINI, Alessandro (Universita e INFN (IT))

Session Classification: Future of DIS

Track Classification: Future of DIS

Contribution ID: **332** Type: **not specified**

Forward/backward detectors at an LHeC

Wednesday, 28 March 2012 11:35 (20 minutes)

none

Primary author: BUNYATYAN, Armen (DESY)

Presenter: BUNYATYAN, Armen (DESY)

Session Classification: Future of DIS

Track Classification: Future of DIS

Contribution ID: **333** Type: **not specified**

ELIC machine design

Wednesday, 28 March 2012 08:55 (25 minutes)

none

Primary author: NISSEN, Ed (JLab)

Presenter: NISSEN, Ed (JLab)

Session Classification: Future of DIS

Track Classification: Future of DIS

Contribution ID: **335** Type: **not specified**

Higgs CP properties and the LHeC

Wednesday, 28 March 2012 16:00 (20 minutes)

none

Primary author: GODBOLE, Rohini (Centre for Theoretical Studies (CTS))

Presenter: GODBOLE, Rohini (Centre for Theoretical Studies (CTS))

Session Classification: Future of DIS

Track Classification: Future of DIS

Contribution ID: **336** Type: **not specified**

Overview of low x physics with electrons, protons and ions

Thursday, 29 March 2012 09:00 (35 minutes)

none

Primary author: SALGADO LOPEZ, Carlos Albert (Universidade de Santiago de Compostela (ES))

Presenter: SALGADO LOPEZ, Carlos Albert (Universidade de Santiago de Compostela (ES))

Session Classification: Future of DIS

Track Classification: Future of DIS

Contribution ID: **337** Type: **not specified**

Radiative corrections in ep and eA

Wednesday, 28 March 2012 16:20 (25 minutes)

none

Primary author: SPIESBERGER, Hubert (University Mainz)

Presenter: SPIESBERGER, Hubert

Session Classification: Future of DIS

Track Classification: Future of DIS

Contribution ID: **338** Type: **not specified**

Low x, High x and Fragmentation at an EIC

Thursday, 29 March 2012 10:05 (25 minutes)

none

Primary author: LEE, J.H. (Brookhave National Laboratory)

Presenter: LEE, J.H. (Brookhave National Laboratory)

Session Classification: Future of DIS

Track Classification: Future of DIS

Contribution ID: **339** Type: **not specified**

Low x physics in ep scattering at an LHeC

Thursday, 29 March 2012 12:10 (30 minutes)

none

Primary author: STASTO, Anna (Penn State)

Presenter: STASTO, Anna (Penn State)

Session Classification: Combined: Future of DIS/structure functions

Track Classification: Future of DIS/structure functions

Contribution ID: **340** Type: **not specified**

QCD and electroweak physics at an LHeC

Thursday, 29 March 2012 11:40 (30 minutes)

none

Primary author: BEHNKE, Olaf (DESY)

Presenter: BEHNKE, Olaf (DESY)

Session Classification: Combined: Future of DIS/structure functions

Track Classification: Future of DIS/structure functions

Contribution ID: **342** Type: **not specified**

Measurements of hard diffraction in p-p collisions in CMS

Tuesday, 27 March 2012 16:50 (20 minutes)

The talk will present CMS measurements on diffractive W and dijet production in p-p collisions at 0.9, 2.36 and 7 TeV.

Primary author: VILELA PEREIRA, Antonio (Universita e INFN (IT))

Presenter: VILELA PEREIRA, Antonio (Universita e INFN (IT))

Session Classification: Diffraction and vector mesons

Track Classification: Diffraction and vector mesons

Contribution ID: **343** Type: **not specified**

Exclusive photon-photon processes in p-p collisions in CMS”

Tuesday, 27 March 2012 14:40 (20 minutes)

We present the search for exclusive diphoton production and the measurement of exclusive dilepton production, based on the data recorded by the CMS experiment at the LHC in 2010. An upper limit on the cross section is set for exclusive diphoton production, which is compared with the QCD perturbative theory predictions using different PDF sets. The exclusive dielectron production provides an excellent control sample for exclusive diphoton production, and a comparison between the measurement and the QED prediction is discussed. In addition, we report a measured cross section of exclusive dimuon production, which is compared with the theoretical QED prediction evaluated with the event generator LPAIR.”

Primary author: LI, Wenbo (Peking University (CN))

Presenter: LI, Wenbo (Peking University (CN))

Session Classification: Diffraction and vector mesons

Track Classification: Diffraction and vector mesons

Contribution ID: **344** Type: **not specified**

HERAFitter

Wednesday, 28 March 2012 11:50 (20 minutes)

HERAFitter, a common initiative of the H1 and ZEUS collaborations, is an open source software package which provides a framework for precision QCD analyses, based on the evolution package of QCDNUM. The beta-release of the HERAFItter package contains a set of programs to fit inclusive deep inelastic scattering cross section data from HERA as well as Drell-Yan and inclusive jet processes, which are included using APPLGRID and FastNLO interfaces. HERAFitter provides an optimal platform to perform elaborate benchmarking studies of different theoretical models with rigorous treatment of experimental uncertainties. The package enables the determination of the proton parton density functions (PDFs) using precise data from LHC.

Primary author: DIACONU, Cristinel (Universite d'Aix - Marseille II (FR))

Presenter: RADESCU, Voica Ana Maria (Deutsches Elektronen-Synchrotron (DE))

Session Classification: Structure functions

Track Classification: Structure functions

Contribution ID: **345** Type: **not specified**

The ALICE Upgrade Programme

Tuesday, 27 March 2012 09:25 (25 minutes)

Primary author: PEITZMANN, Thomas (University of Utrecht (NL))

Presenter: PEITZMANN, Thomas (University of Utrecht (NL))

Session Classification: Future of DIS

Track Classification: Future of DIS

Contribution ID: **346** Type: **not specified**

The ATLAS Upgrade Programme

Tuesday, 27 March 2012 09:00 (25 minutes)

Presenter: GEMME, Claudia (Universita e INFN (IT))

Session Classification: Future of DIS

Contribution ID: **348** Type: **not specified**

DIS at MINERvA

Tuesday, 27 March 2012 11:00 (25 minutes)

Primary author: Dr MOUSSEAU, Joel

Presenter: MOUSSEAU, Joel

Session Classification: Future of DIS

Contribution ID: **349** Type: **not specified**

ELIC Detector and IR design including current R&D

Wednesday, 28 March 2012 10:30 (25 minutes)

Primary author: KEPPEL, Cynthia (Hampton University)

Presenter: KEPPEL, Cynthia (Hampton University)

Session Classification: Future of DIS

Contribution ID: **350** Type: **not specified**

Low x Physics in eA scattering at an LHeC

Thursday, 29 March 2012 09:35 (30 minutes)

Primary author: ARMESTO PEREZ, Nestor (Universidade de Santiago de Compostela (ES))

Presenter: ARMESTO PEREZ, Nestor (Universidade de Santiago de Compostela (ES))

Session Classification: Future of DIS

Contribution ID: **353** Type: **not specified**

Status of HallD tagged photon beam facility and the GlueX detector

Tuesday, 27 March 2012 16:30 (25 minutes)

Primary author: ZIHLMANN, Benedikt (J)

Presenter: ZIHLMANN, Benedikt (J)

Session Classification: Future of DIS

Contribution ID: **354** Type: **not specified**

Soft-gluon resummation for high-pT hadrons at COMPASS

Thursday, 29 March 2012 12:20 (20 minutes)

We consider the cross section for the photoproduction reaction
gamma + p -> h+ X in fixed-target scattering at COMPASS, where the hadron is produced at large transverse momentum. We investigate the role played by higher-order corrections to the cross section. In particular we adress large logarithmic “threshold” corrections to the partonic cross sections, which we resum to all orders.

Primary author: Mrs PFEUFFER, Melanie (University of Regensburg)

Co-authors: SCHAEFER, Andreas; DE FLORIAN, Daniel (Universidad de Buenos Aires); VOGELSANG, Werner

Presenter: Mrs PFEUFFER, Melanie (University of Regensburg)

Session Classification: Spin physics

Track Classification: Spin physics

Contribution ID: **355** Type: **not specified**

Vector Meson Production and DVCS at CLAS and CLAS12

Wednesday, 28 March 2012 14:55 (20 minutes)

Generalised Parton Distributions (GPDs) offer an insight into the three-dimensional structure of the nucleon and its
internal dynamics, relating the transverse position of quarks to their longitudinal momentum. Two effective means of
accessing GPDs are Deeply Virtual Compton Scattering (DVCS) and Meson Production (DVMP), in which a high energy electron
scatters from a single quark in the nucleon and, respectively, a real photon or meson is produced as a result. Jefferson
Laboratory (JLab), USA, is ideally suited for measuring these processes and a very active experimental programme has been
underway in the recent years, making use of the lab's continuous electron beam up to 6 GeV in energy and its large angle
spectrometer CLAS. In the future, a vast, new, as-yet unprobed kinematic region will become experimentally accessible
when the current upgrade of the JLab accelerator to operate at a maximum energy of 12 GeV is completed in a few years. It
is being complemented by the construction of a new suite of detectors, CLAS12, a number of them optimised specifically
for exclusive reconstruction of DVCS and DVMP in the new kinematic region. We present a selection of recent results of
DVCS and DVMP measurements using CLAS and introduce the exciting experimental programme planned for the future with
CLAS12.

Primary author: Dr SOKHAN, Daria (in2p3)

Presenter: Dr SOKHAN, Daria (in2p3)

Session Classification: Combined: Diffraction and vector mesons/spin physics

Track Classification: Diffraction and vector mesons/spin physics

Contribution ID: **356** Type: **not specified**

maging partons using exclusive scattering processes

Presenter: DIEHL, Markus (DESY)

Contribution ID: **357** Type: **not specified**

Summary: Structure functions

Friday, 30 March 2012 09:00 (40 minutes)

Presenters: SARKAR, Amanda (University of Oxford (GB)); JIMENEZ-DELGADO, Pedro (University of Zürich); PLACAKYTE, Ringaile (Deutsches Elektronen-Synchrotron (DE))

Session Classification: Plenary

Contribution ID: **358** Type: **not specified**

Summary: Future of DIS

Friday, 30 March 2012 09:40 (40 minutes)

Presenters: NEWMAN, Paul Richard (University of Birmingham (GB)); ASCHENAUER, elke-caroline (BNL)

Session Classification: Plenary

Contribution ID: **359** Type: **not specified**

Summary: Electroweak and searches

Friday, 30 March 2012 11:30 (40 minutes)

Presenters: Dr SOUTH, David (DESY); YOO, Hwi Dong (Purdue University (US))

Session Classification: Plenary

Contribution ID: **360** Type: **not specified**

Summary: Diffraction and vector mesons

Friday, 30 March 2012 10:50 (40 minutes)

Presenters: COLFERAI, Dimitri (Unknown); RUSPA, Marta (Universita e INFN (IT)); POLIFKA, Richard (University of Toronto (CA))

Session Classification: Plenary

Contribution ID: **361** Type: **not specified**

Summary: Hadronic final states

Friday, 30 March 2012 13:30 (40 minutes)

Presenters: WINTER, Jan-Christopher; RABBERTZ, Klaus (KIT - Karlsruhe Institute of Technology (DE)); NOWAK, Krzysztof (Deutsches Elektronen-Synchrotron (DE))

Session Classification: Plenary

Contribution ID: **362** Type: **not specified**

Summary: Heavy flavours

Friday, 30 March 2012 14:10 (40 minutes)

Presenters: SCHIENBEIN, Ingo (Universite Joseph Fourier); BRODZICKA, Jolanta (INP PAS Krakow); CORRADI, Massimo (Universita e INFN (IT))

Session Classification: Plenary

Contribution ID: **363** Type: **not specified**

Summary: Spin physics

Friday, 30 March 2012 15:20 (40 minutes)

Presenters: Dr KUMERICKI, Kresimir (University of Zagreb); SCHLEGEL, Marc (University of Tuebingen); YASCHENKO, Sergey (DESY)

Session Classification: Plenary

Contribution ID: **364** Type: **not specified**

DIS Perspectives and the LHeC

Friday, 30 March 2012 16:00 (40 minutes)

Presenter: KLEIN, Max

Session Classification: Plenary

Contribution ID: **365** Type: **not specified**

Summary of IAC meeting

Friday, 30 March 2012 16:40 (10 minutes)

Presenter: LEVY, Aharon (Unknown)

Session Classification: Plenary

Contribution ID: **366** Type: **not specified**

Closing remarks

Friday, 30 March 2012 16:50 (10 minutes)

Presenter: BROCK, Ian (Universitaet Bonn (DE))

Session Classification: Plenary

Contribution ID: **367** Type: **not specified**

The Underlying Event in Herwig++

Thursday, 29 March 2012 12:20 (20 minutes)

We review the modelling of multiple interactions in the event generator Herwig++ and study implications of recent tuning efforts to Tevatron and LHC data. A crucial ingredient to a successful description of minimum bias and underlying event observables is a model for colour reconnection. Improvements to this model inspired by statistical physics are presented.

Primary author: ROEHR, Christian (K)

Co-authors: SIODMOK, Andrzej Konrad (KIT - Karlsruhe Institute of Technology (DE)); SEYMOUR, Mike (School of Physics and Astronomy Schuster Laboratory-University); Mr PLAETZER, Simon (DESY Hamburg); GIESEKE, Stefan (Unknown)

Presenter: ROEHR, Christian (K)

Session Classification: Hadronic final states

Track Classification: Hadronic final states

Contribution ID: **368** Type: **not specified**

Welcome

Monday, 26 March 2012 14:30 (5 minutes)

Presenter: MEISSNER, Ulf G. (University of Bonn)

Session Classification: Plenary

Contribution ID: **369** Type: **not specified**

Quantitative constraints on the gluon distribution function in the proton from collider isolated-photon data

Wednesday, 28 March 2012 11:30 (20 minutes)

The impact of isolated-photon data from proton-(anti)proton collisions at RHIC, SppbarS, Tevatron and LHC energies, on the parton distribution functions of the proton is studied using a recently developed Bayesian reweighting method. The impact on the gluon density of the 35 existing isolated-gamma measurements is quantified using next-to-leading order (NLO) perturbative QCD calculations complemented with the NNPDF2.1 parton densities. The NLO predictions are found to describe well most of the datasets from 200 GeV up to 7 TeV centre-of-mass energies. The isolated-photon spectra recently measured at the LHC are precise enough to constrain the gluon distribution and lead to a moderate reduction (up to 20%) of its uncertainties around fractional momenta x~0.02. As a particular case, we show that the improved gluon density reduces the PDF uncertainty for the Higgs boson production cross section in the gluon-fusion channel by more than 20% at the LHC. We conclude that present and future isolated-photon measurements constitute an interesting addition to coming global PDF analyses.

Primary author: D'ENTERRIA, David (CERN)

Presenter: D'ENTERRIA, David (CERN)

Session Classification: Structure functions

Track Classification: Structure functions