LHC students poster session

Report of Contributions

https://indico.cern.ch/e/180683

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

Ds production in pp collisions at 7 TeV with the ALICE detector and prospectives for the Pb-Pb analysis

Wednesday 21 March 2012 17:02 (1h 58m)

We will present the pt-differential cross section of Ds mesons in pp collisions at 7 TeV measured in the central rapidity region of the ALICE experiment.
The status of the Pb-Pb analysis at 2.76 TeV will also be discussed

Presenter: INNOCENTI, Gian Michele (Universita e INFN (IT))

Session Classification: Heavy Ion collisions

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

Measurement of the top quark mass in the dilepton channel at CMS.

Wednesday 21 March 2012 17:04 (1h 56m)

We present a measurement of the top quark mass mtop in the dilepton decay channel tt¯ ⟶ (l+νlb) (l−ν¯lb¯) in pp collisions at sqrt{s}=7 TeV. The data sample of the measurement corresponds to an integrated luminosity of 2.3 fb−1 collected with the CMS detector at the LHC. Events are selected by requiring two leptons, at least two jets and missing transverse energy. The mass is reconstructed from the kinematic characteristics of the events with a full kinematic analysis. A set of templates is constructed from simulated samples and a likelihood fit is performed to derive the mass. The result yields a measurement of mtop = 173.3+/-1.2(stat.)+/-2.6(syst.) GeV/c2, and it is the single most precise measurement in this decay channel.

Presenter: VISCHIA, Pietro (LIP Laboratorio de Instrumentacao e Fisica Experimental de Part)

Session Classification: Top quark physics

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

Baryon number transport at LHC energies with the ALICE experiment

Wednesday 21 March 2012 17:02 (1h 58m)

We present results on strangeness production in p+p collisions at different LHC energies (√s = 900GeV and 7 TeV). In particular, the rapidity and transverse momentum dependence of the antiLambda/Lambda, AntiXi+/Xi- and AntiOmega+/Omega- ratios will be shown

Presenter: BROZ, Michal (Comenius University (SK))

Session Classification: Heavy Ion collisions

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

Measurement of electrons from semi-electronic heavy-flavour hadron decays in proton-proton collisions at √s = 7 TeV with ALICE

Wednesday 21 March 2012 17:03 (1h 57m)

We present the differential cross section of electrons from heavy-flavour hadron decays in pp collisions at √s = 7 TeV. Results are compared to FONLL pQCD calculations.

Presenter: FASEL, Markus (GSI - Helmholtzzentrum fur Schwerionenforschung GmbH (DE))

Session Classification: Physics of heavy flavours

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

Search for a Standard Model Higgs Boson Decaying into Tau Leptons at CMS

Wednesday 21 March 2012 17:05 (1h 54m)

A search for the standard model Higgs boson decaying into tau leptons using CMS is described. The analysis is sensitive in a mass range
from 110 to 145 GeV. A description of the measurement of the tau identification efficiency for hadronic tau decays is given.

Presenter: CHAN, Matthew (Massachusetts Inst. of Technology (US))

Session Classification: Higgs searches

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

Determining the inelastic rate for the luminosity independent cross section measurement at TOTEM at the LHC

Wednesday 21 March 2012 17:01 (1h 59m)

The method for determining the inelastic rate for the luminosity independent cross section measurement will be presented. Main points include descriptions of corrections applied to the measured raw event rate as well as preliminary quantitative results.

Presenter: WELTI, Jan (Helsinki Institute of Physics (FI))

Session Classification: Jets and QCD studies

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

Jets with ALICE

Wednesday 21 March 2012 17:02 (1h 58m)

We present the performance and unique capabilities at the LHC of the ALICE detector in the jet reconstruction for proton-proton collisions complemented with an outlook for jet measurements in high background environment of heavy-ion collisions

Presenter: MA, Rongrong (Yale University (US))

Session Classification: Heavy Ion collisions

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

Electroweak Z and W bosons in pb-pb collisions with CMS

Wednesday 21 March 2012 17:02 (1h 58m)

Electroweak boson production is an important benchmark process at hadron colliders. Precise measurements of W and Z production in heavy-ion collisions can help to constrain nuclear PDFs as well as serve as a standard candle of the initial state in PbPb collisions at the LHC energies. The analysis and selected results of W and Z production in PbPb collisions at $\sqrt{s_{NN}} = 2.76$ TeV will presented.

Presenter: FLORENT, Alice (Ecole Polytechnique (FR))

Session Classification: Heavy Ion collisions

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

J/psi polarization in p-p collisions at √s = 7TeV with the ALICE experiment

Wednesday 21 March 2012 17:03 (1h 57m)

The first measurement of inclusive of J/psi polarization at the LHC was carried out in p-p collisions at √s = 7TeV, with the ALICE experiment. Reconstructing J/psi in the muon channel at forward rapidity (2.5 < y < 4), we have measured its polarization to be rather small, with a clearly finite value only for the lowest measured bin in transverse momentum, 2-3 GeV/c, in the helicity reference frame.

Presenter: BIANCHI, Livio (Universita e INFN (IT))

Session Classification: Physics of heavy flavours

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

Materiel budget in ALICE with the displaced vertex technique

Wednesday 21 March 2012 17:07 (1h 53m)

During the 2010 PbPb run, some collisions took place at different vertex location with respect to the nominal one in all LHC experiments. A non-negligible number of those “satellite collisions” have been recorded by the ALICE experiment. Using a displaced vertex technique, the knowledge of the ALICE material budget and geometry have been improved.

Presenter: MAXIME, Guilbaud (Univ. de Lyon, CNRS/IN2P3)

Session Classification: Detector performance studies

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

Suppression of Charged Particle Production at Large Transverse Momentum in Pb-Pb Collisions at √sNN = 2.76 TeV measured by ALICE

Wednesday 21 March 2012 17:02 (1h 58m)

Transverse momentum spectra of primary charged particles in Pb-Pb collisions measured with ALICE will be presented and compared to inelastic pp collisions in terms of RAA. The evolution of RAA as a function of collision centrality will be presented. Calculations from in-medium parton energy loss models will be compared to the measured RAA.

Presenter: KNICHEL, Michael Linus (GSI - Helmholtzzentrum fur Schwerionenforschung GmbH (DE))

Session Classification: Heavy Ion collisions

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

Measurements of prompt and non-prompt J/psi production at central rapidity in p-p collisions at sqrt(s) = 7 TeV with the ALICE experiment

Wednesday 21 March 2012 17:03 (1h 57m)

The ALICE experiment at the LHC has studied the J/psi production at mid-rapidity in pp collisions at sqrt(s) = 7 TeV through its electron pair decay. The fraction of J/psi from the decay of long-lived beauty hadrons was determined on a data sample corresponding to an integrated luminosity Lint = 5.6 nb−1 for J/psi candidates with transverse momentum pt > 1.3 GeV/c and rapidity |y| < 0.9. The cross section for prompt J/psi mesons and for the production of b-hadron decaying to J/psi were also determined in the rapidity range |y| < 0.9. Using the shape of the pt and y distributions of b-quarks predicted by pQCD-based calculations to extrapolate the measured cross section, the mid-rapidity dsigma /dy and the total production cross section of b b-bar pairs were derived.

Presenter: FIONDA, Fiorella (Universita e INFN (IT))

Session Classification: Physics of heavy flavours

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

J/psi suppression in Pb-Pb collisions at sqrt(s)=2.76 TeV at forward rapidity in ALICE

Wednesday 21 March 2012 17:02 (1h 58m)

We present the measurement of the production yields of J/psi in Pb-Pb collisions measured with their muon decays at forward rapidities in ALICE ($2.5 < y < 4$) in different collision centrality windows. The results are compared to the inclusive production cross-sections in p-p collisions and the nuclear modification factor is discussed.

Presenter: LAKOMOV, Igor (Universite de Paris-Sud 11 (FR))

Session Classification: Heavy Ion collisions

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

Measurement of prompt and non-prompt J/psi suppression in PbPb collisions at sqrt(s_NN) = 2.76 TeV with CMS

Wednesday 21 March 2012 17:02 (1h 58m)

CMS has measured the nuclear modification factors of non-prompt J/psi (from b-hadron decays) and prompt J/psi in PbPb collisions at $\sqrt{s_{NN}} = 2.76$ TeV. For prompt J/psi with relatively high pt (pt=6.5-30 GeV/c), a strong, centrality-dependent suppression is observed in PbPb collisions, compared to the yield in pp collisions scaled by the number of inelastic nucleon-nucleon collisions. In the same kinematic range, a suppression of non-prompt J/psi, which is sensitive to the in-medium b-quark energy loss, is measured for the first time.

Presenter: JO, Mihee (Korea University (KR))

Session Classification: Heavy Ion collisions

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

Search for the Standard Model Higgs boson through the H->ZZ decay channels with the ATLAS detector

Wednesday 21 March 2012 17:05 (1h 54m)

The search for the Standard Model Higgs boson via its decays into two Z bosons is presented, based on the 4.7-4.9 fb^{-1} of proton-proton collisions at a center-of-mass energy of 7 TeV, recorded in 2011 by the ATLAS experiment at the LHC.
The results obtained in the fully leptonic decay channel cover a wide range of Higgs boson mass hypotheses, between 110 GeV and 600 GeV. For Higgs boson masses above 200 GeV, the sensitivity is substantially enhanced by using channels in which one of the Z bosons decays into neutrinos or quarks. With the current integrated luminosity, a wide mass range is excluded at the 95% confidence level.

Presenter: PRICE, Joseph David (University of Liverpool (GB))

Session Classification: Higgs searches

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

Combination of the searches for the low-mass Standard Model Higgs boson with the ATLAS detector

Wednesday 21 March 2012 17:05 (1h 54m)

The search for a Higgs boson is one of the most important physics goals of the Large Hadron Collider program. The ATLA

Presenter: WANG, Haichen (University of Wisconsin (US))

Session Classification: Higgs searches

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

Search for the MSSM Higgs bosons with the ATLAS detector

Wednesday 21 March 2012 17:05 (1h 54m)

Inclusive searches for neutral Higgs bosons $h^0/A^0/H^0 \rightarrow$tau tau, based on 1.06 fb^{-1}, and for charged Higgs bosons $H^+ \rightarrow$tau nu, based on 4.6 fb^{-1} of ATLAS pp-collision data, are discussed.
No excess is observed. Limits on production cross-section × branching ratios are derived, and the findings are interpreted within the mhmax scenario of the MSSM.

Presenter: VON RADZIEWSKI, Holger (Albert-Ludwigs-Universitaet Freiburg (DE))

Session Classification: Higgs searches

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

Search for heavy quarks (t' and b') with the ATLAS detector

Wednesday 21 March 2012 17:05 (1h 55m)

Presenter: Mrs GAUTHIER, Lea (CEA - Centre d'Etudes de Saclay (FR))

Session Classification: BSM searches

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

Search for long-lived particles with the ATLAS detector

Wednesday 21 March 2012 17:05 (1h 55m)

A search for the decay of a light Higgs (120 - 140 GeV) to a pair of weakly-interacting, long-lived particles in 1.94/fb of proton-proton collisions at $\sqrt{s}$ = 7 TeV recorded in 2011 by the ATLAS detector is presented. The search strategy requires that both long-lived particles decay inside the muon spectrometer.

Presenter: VENTURA, Daniel (University of Massachusetts, Amherst (US))

Session Classification: BSM searches

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

A Search for ttbar Resonances with the ATLAS Detector

Wednesday 21 March 2012 17:05 (1h 55m)

A search for resonant production of ttbar pairs with data collected in 2011 by ATLAS. The analyses presented here concentrate on the lepton + jets and fully leptonic final states, with datasets corresponding to a total integrated luminosity of 2.05 and 1.04 fb-1 respectively. Limits are set on the production cross-section times branching ratio to top quark pairs of resonances predicted by key benchmark models. Prospects are also presented for an analysis tailored to the search for high mass resonances which decay to pairs of "boosted" top quarks with large transverse momenta.

Presenter: LIVERMORE, Sarah (University of Oxford (GB))

Session Classification: BSM searches

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

Search for supersymmetry in events with three leptons and missing transverse momentum with ATLAS

Wednesday 21 March 2012 17:05 (1h 54m)

A search for pair production of supersymmetric gauginos decaying into final states with three leptons and missing transverse momentum is presented. The analysis uses 2.1 fb-1 of 7 TeV proton-proton collision data delivered by the LHC and recorded with the ATLAS detector in 2011.

Presenter: DE GRAAT, Julien (LMU Munich)

Session Classification: BSM searches

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

Search for anomaly-mediated supersymmetry breaking based on a disappearing-track signature with ATLAS

Wednesday 21 March 2012 17:05 (1h 55m)

Presenter: AZUMA, Yuya (University of Tokyo (JP))

Session Classification: BSM searches

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

Jets in Heavy Ion Collisions at the ATLAS Detector

Wednesday 21 March 2012 17:02 (1h 58m)

Presenter: KOSEK, Tomas (Charles University (CZ))

Session Classification: Heavy Ion collisions

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

Measurement of top quark production at ATLAS

Wednesday 21 March 2012 17:04 (1h 56m)

Presenter: JOSHI, Kiran Daniel (University of Manchester (GB))

Session Classification: Top quark physics

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

Measurement of top quark properties at ATLAS

Wednesday 21 March 2012 17:04 (1h 56m)

Presenter: RUBBO, Francesco (Universitat Autònoma de Barcelona (ES))

Session Classification: Top quark physics

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

Standard Model Jet Measurements Using the ATLAS Detector

Wednesday 21 March 2012 17:01 (1h 59m)

A brief summary of standard model jet measurements made in the ATLAS detector. The 2010 data, corresponding to an integrated luminosity of 37 pb−1, and 2011 data, corresponding to an integrated luminosity of 4.8 fb-1, were used to probe perturbative quantum-chromodynamics. Inclusive jet cross sections, dijet mass cross sections, dijet production with a veto on additional central jet activity, multi-jet cross sections, and dijet azimuthal decorrelations are presented.

Presenter: MEYER, Christopher John (University of Chicago (US))

Session Classification: Jets and QCD studies

Contribution ID: **32** Type: **not specified**

Diffractive Dissociation of Protons in 7 TeV Collisions at the ATLAS Detector

Wednesday 21 March 2012 17:01 (1h 59m)

Pseudorapidity gap distributions in pp collisions at sqrt(s) = 7 TeV are studied using a minimum bias data sample. We present the total inelastic cross section as a function of Delta eta F, the larger of the pseudorapidity regions extending to the limits of the ATLAS sensitivity, at eta = +-4.9, in which no final state particles are produced above a transverse momentum threshold pT cut. The measurements span the region 0 < Delta eta F < 8 for 200 < pT cut < 800 MeV. The measurements at larger gap sizes are dominated by contributions from diffractive dissociation processes. The large rapidity gap data are used to constrain the value of the Pomeron intercept appropriate to triple Regge models of soft diffraction. The cross section integrated over all gap sizes is compared with other LHC inelastic cross section measurements.

Presenter: Mr MARTIN, Tim (University of Birmingham (GB))

Session Classification: Jets and QCD studies

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

Search for the Bs->mumu decay in ATLAS

Wednesday 21 March 2012 17:03 (1h 57m)

The Bs0 -> μμ decay is a Flavour Changing Neutral Current process, highly suppressed in the Standard Model (SM). The small SM prediction of 3 x 10-9 might be substantially enhanced by coupling to new heavy particles. An analysis based on 2.4 fb−1 of integrated luminosity, using a multivariate, multi-bin selection method is presented. A limit of BR (Bs0 -> μμ) ≤ 2.2E-8 at 95% CL is obtained.

Presenters: GAUR, Bakul (Universitaet Siegen (DE)); MUSTO, Elisa (Universita e INFN (IT))

Session Classification: Physics of heavy flavours

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

Radiative Chi_b and Chi_c decays in ATLAS

Wednesday 21 March 2012 17:03 (1h 57m)

An observation of the chi_c and chi_b quarkonium states in proton-proton collision data at sqrt(s) = 7 TeV recorded by the ATLAS experiment is presented. The chi_c and chi_b states are reconstructed from their radiative decays to J/psi and Upsilon(1S,2S) respectively. In the charmonium sector, the chi_c1,2(1P) charmonium states are observed. This represents the first step towards more advanced measurements of the chi_c system with ATLAS. In the bottomonium sector, in addition to the known chi_b(1P) and chi_b(2P) states, a new high mass structure is observed in radiative transitions to both Upsilon(1S) and Upsilon(2S). This observation is consistent with theoretical predictions for the chi_b(3P) system.

Presenter: CHISHOLM, Andrew Stephen (University of Birmingham (GB))

Session Classification: Physics of heavy flavours

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

ATLAS detector performance in 2011 - Calorimeters

Wednesday 21 March 2012 17:07 (1h 53m)

Presenters: MONTEJO BERLINGEN, Javier (IFAE - Barcelona (ES)); NIKIFOROU, Nikiforos (Columbia University (US))

Session Classification: Detector performance studies

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

ATLAS detector performance in 2011 - ID and forward detectors

Wednesday 21 March 2012 17:07 (1h 53m)

This poster describes the performance of 2 parts of ATLAS:
- The Inner Detector which consists of 3 subdetectors: the Pixel detector, the SemiConductor Tracker (or SCT) and the Transition Radiation Tracker (or TRT).
Here, we report on Pixel detector and SCT performance over 2011.
- ALFA detector which will determine the absolute luminosity of the CERN LHC at the ATLAS Interaction Point (IP), and the total proton-proton cross section,
by tracking elastically scattered protons at very small angles in the limit of the Coulomb Nuclear interference region.

Presenters: DAVIES, Eleanor Lucy (University of Oxford (GB)); WANG, Rui (University of New Mexico (US)); ABDEL KHALEK, Samah (Universite de Paris-Sud 11 (FR))

Session Classification: Detector performance studies

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

ATLAS detector performnace in 2011 - Muon system

Wednesday 21 March 2012 17:07 (1h 53m)

During the 2011 LHC Data taking period the ATLAS Detector recorded 5.22 fb-1 which is 96.5% of the delivered data from proton-proton collisions. The recorded data with Muon Spectrometer was at a level of more than 99% good for physics analysis. This illustrates an excellent performance. Starting the 2012 data taking period the Muon Spectrometer will perform to more than 99% operational fraction at the Level 1 trigger and at an average of more than 97.6% operational fraction of trigger and precision chambers. This poster presents the performance of the Muon Spectrometer trigger chambers as well as the precision chambers. In addition a combined Muon Spectrometer performance is presented.

Presenters: IAKOVIDIS, George (National Technical Univ. of Athens (GR)); LIU, Lulu (University of Michigan (US))

Session Classification: Detector performance studies

Contribution ID: **39** Type: **not specified**

Improvements to ATLAS Jet Triggers for 2012 Data-Taking

Wednesday 21 March 2012 19:02 (1h 52m)

Presenter: CHAPLEAU, Bertrand (McGill University (CA))

Session Classification: Trigger, computing, ...

Contribution ID: **40** Type: **not specified**

A Persistent Back-End for the ATLAS Online Information Service

Wednesday 21 March 2012 19:02 (1h 52m)

Presenter: SICOE, Alexandru Dan (CERN)

Session Classification: Trigger, computing, …

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

Rate Predictions and Trigger/DAQ Resource Monitoring in ATLAS

Wednesday 21 March 2012 19:02 (1h 52m)

Presenter: SCHAEFER, Douglas Michael (University of Pennsylvania (US))

Session Classification: Trigger, computing, ...

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

Electron reconstruction and identification with the ATLAS detector

Wednesday 21 March 2012 17:07 (1h 53m)

Presenter: LESTER, Chris (University of Pennsylvania (US))

Session Classification: Detector performance studies

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

ATLAS Muon Performance in the Presence of Pile-up

Wednesday 21 March 2012 17:07 (1h 53m)

Muons are a key ingredient for many physics analyses in ATLAS. A measurement of the performance of the muon reconstruction and identification on LHC collisions recorded in 2011 is presented, with a particular focus on the effects of pile-up and a comparison with Monte-Carlo simulations.

Presenter: VANADIA, Marco (Max-Planck-Institut fuer Physik (Werner-Heisenberg-Institut) (D)

Session Classification: Detector performance studies

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

Jet energy measuremnt and uncertainties in 2011 ATLAS data

Wednesday 21 March 2012 17:07 (1h 53m)

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

Session Classification: Detector performance studies

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

Track and vertex reconstruction in the ATLAS inner detector

Wednesday 21 March 2012 17:07 (1h 53m)

With an average number of up to 23 pile-up interactions per bunch crossing (μ) in 2011 data taking the ATLAS Inner Detector (ID) already reached its design specifications. This poster presents studies in data and simulation demonstrating that the ID track reconstruction is well-prepared for the high pile-up expected in 2012.

Presenter: WASICKI, Christoph (Deutsches Elektronen-Synchrotron (DE))

Session Classification: Detector performance studies

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

B-tagging performance in ATLAS

Wednesday 21 March 2012 17:07 (1h 53m)

Presenter: SAPP, Kevin (University of Pittsburgh (US))

Session Classification: Detector performance studies

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

Search for supersymmetry in single-lepton + jets events using the lepton-projection variable with the CMS experiment

Wednesday 21 March 2012 17:05 (1h 55m)

A search for supersymmetry using single lepton events at CMS is presented. A lepton-projection variable, based on W-polarization, is used to discriminate the dominant backgrounds arising from top and W production.

Presenter: GOUSKOS, Loukas (University of Athens (GR))

Session Classification: BSM searches

Contribution ID: **48** Type: **not specified**

Performance of ATLAS Tau Reconstruction and Identification in 2011

Wednesday 21 March 2012 17:07 (1h 53m)

Presenter: GODFREY, Jennifer Lynn (SFU Simon Fraser University (CA))

Session Classification: Detector performance studies

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

Measurement of the single-top t-channel inclusive cross section at CMS

Wednesday 21 March 2012 17:04 (1h 56m)

We present a measurement of the single top t-channel inclusive cross section in proton-proton collisions at sqrt(s) = 7 TeV with the CMS detector at LHC considering decay channels with a muon or an electron in the final state, using data samples corresponding to an integrated luminosity of 1.14/1.51 inverse fb for the muon/electron channel. After a selection optimized for the t-channel, data-driven estimations of the main background processes from data were performed to reduce the assumptions on their modeling. The t-channel cross section was extracted through a fit to the pseudodorapidity distribution of the jet stemming from the light quark recoiling against the top, resulting in a measured cross section of 70.2 +/- 5.2(stat.) +/- 10.4(syst.) +/- 3.4(lumi.) pb.

Presenter: IORIO, Alberto Orso Maria (Universita e INFN (IT))

Session Classification: Top quark physics

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

Observation of CP violation in B± → DK± decays at LHCb

Wednesday 21 March 2012 17:03 (1h 57m)

Presenter: GANDINI, Paolo (University of Oxford (GB))

Session Classification: Physics of heavy flavours

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

Differential measurements of the charge asymmetry in top quark pair production at CMS

Wednesday 21 March 2012 17:04 (1h 56m)

We present the recent measurement of the ttbar charge asymmetry in a dataset corresponding to an integrated luminosity of 4.7/fb, collected with the CMS detector at the LHC. In addition to the inclusive measurement, for the first time at the LHC also differential measurements are performed.

Presenter: BOSER, Christian (KIT - Karlsruhe Institute of Technology (DE))

Session Classification: Top quark physics

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

Measurement of direct CP asymmetry in the $B^0 \to K * \gamma$ decay in LHCb

Wednesday 21 March 2012 17:03 (1h 57m)

We present the measurement of direct CP asymmetry in the decay Bˆ0->K* gamma with the full 2011 dataset in LHCb. A comparison with the SM prediction, as well as previous results is given.

Presenter: VAZQUEZ GOMEZ, Ricardo (Depto. d' Estruc. i Cons. de la Mat-Facultad de Fisica-Universid)

Session Classification: Physics of heavy flavours

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

Optimisation and calibration of the LHCb opposite side flavour tagging

Wednesday 21 March 2012 17:03 (1h 57m)

The results of the LHCb opposite side flavour tagging optimisation and calibration on the 2011 dataset are presented.

Presenters: CAUET, Christophe (Technische Universitaet Dortmund (DE)); Mr BRAMBACH, Tobias (Technische Universitaet Dortmund (DE))

Session Classification: Physics of heavy flavours

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

Photon energy scale determination and commissioning with radiative Z decays in the CMS experiment

Wednesday 21 March 2012 17:07 (1h 53m)

Radiative Z decays to pairs of muons, where one of the muons emits a Bremsstrahlung photon, can be used for numerous dedicated photon calibration and measurement purposes : they can be cleanly selected and their kinematics are well-constrained by the Z boson mass and the precision on the muon momenta. This poster presents three use cases, based on data recorded by the CMS experiment in 2010 and 2011.

Presenter: BONDU, Olivier (Universite Claude Bernard-Lyon I (FR))

Session Classification: Detector performance studies

Contribution ID: **57** Type: **not specified**

Search for high-mass resonances decaying to tt in the lepton+jets channel with the CMS detector

Wednesday 21 March 2012 17:05 (1h 55m)

A model-independent search is presented for the production of narrow heavy resonance with mass greater 1TeV decaying into top quark pairs in 7 TeV pp collisions at the LHC using 2011 data in the lepton+jets channel. In absence of evidence for a signal, we evaluate 95% C.L. upper limits on $\sigma(pp \rightarrow Z' \rightarrow t\bar{t}) \cdot BR$ as a function of the invariant mass of the resonance.

Presenter: KHALATYAN, Samvel (University of Illinois at Chicago (US))

Session Classification: BSM searches

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

Search for the standard model Higgs Boson decaying into two photons at CMS

Wednesday 21 March 2012 17:05 (1h 54m)

A search for the standard model Higgs boson decaying into two photons using CMS is described. The analysis is sensitive in a mass range from 110 to 150 GeV. Multivariate analysis techniques have been deployed to optimize the search.

Presenter: YANG, Mingming (Massachusetts Inst. of Technology (US))

Session Classification: Higgs searches

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

Measurement of polarisation amplitudes and triple product asymmetries in the Bs -> phi phi decay at LHCb

Wednesday 21 March 2012 17:03 (1h 57m)

An untagged, time-integrated analysis of the Bs -> phi phi decay has been performed with 1 fb-1 of pp collision data at centre-of-mass (COM) energy \sqrt{s} = 7 TeV taken using the LHCb detector. Optimised selections have yielded 801 Bs -> phi phi events at high signal to background ratio. This has allowed for measurements of polarisation amplitudes ($|A_0|^2$, $|A_\perp|^2$, $|A_\parallel|^2$) and strong phase difference ($\cos\delta_\parallel$) to be performed. T-violating triple product asymmetries have yielded results A_U=-0.055 \pm 0.036(stat.) \pm 0.018(syst.) & A_V = 0.010 \pm 0.036(stat.) \pm 0.018(syst.).

Presenter: BENSON, Sean (University of Edinburgh (GB))

Session Classification: Physics of heavy flavours

Contribution ID: **60** Type: **not specified**

Searches for Supersymmetry with Same-Sign Di-Leptons, Jets and Missing Transverse Energy with the CMS Detector

Wednesday 21 March 2012 17:05 (1h 54m)

The results of a search for new physics in events with two same-sign isolated leptons (electrons, muons), hadronic jets, and missing transverse energy in the final state are presented. The analysis is based on a data sample corresponding to an integrated luminosity of 4.7 fb-1 collected by the CMS experiment at the LHC. The observed numbers of events agree with the Standard Model predictions and thus no evidence for new physics is found. The observations are used to set upper limits on possible new physics contributions and to constrain supersymmetric models.

Presenter: SKHIRTLADZE, Nikoloz (University of Florida (US))

Session Classification: BSM searches

Contribution ID: **61** Type: **not specified**

Measurement of Ds+ - Ds- Production Asymmetry at LHCb

Wednesday 21 March 2012 17:03 (1h 57m)

Heavy quark production in 7 TeV pp collisions at the LHC need not be flavour symmetric. Here the production asymmetry, Ap , between Ds+ and Ds- mesons is measured using the phi pi decay mode. The difference between pi+ and pi- detection efficiencies is measured using the ratio of fully reconstructed to partially reconstructed D* decays. Using 1 fbˆ-1 of data collected with the LHCb detector, we find Ap = (-0.39+/-0.22+/-0.08)%.

Presenter: XING, Zhou (Syracuse University (US))

Session Classification: Physics of heavy flavours

Contribution ID: **62** Type: **not specified**

Direct CP-asymmetries in $B^0 \to K\pi$ and $B_s^0 \to \pi K$ decays at LHCb

Wednesday 21 March 2012 17:03 (1h 57m)

The LHCb experiment is designed to perform flavour physics measurements at the Large Hadron Collider. Using a data sample corresponding to an integrated luminosity of 0.35 fb^{-1} collected by LHCb in 2011, we report measurements of the direct CP asymmetries in the $B^0 \to K^+\pi^-$ and $B_s^0 \to \pi^+K^-$ decays. The results obtained represent the first evidence of CP violation in the decays of B_s^0 mesons to $K\pi$ pairs with a significance of 3.3σ.
Furthermore, we report the first observation of CP violation in B0 decays at a hadron collider with a significance exceeding 6σ.

Presenter: Dr ZANGOLI, Maria (INFN and Università di Bologna (IT))

Session Classification: Physics of heavy flavours

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

Time-dependent CP violation in $B0 \to \pi^+\pi^-$ and $B0_s \to K^+K^-$ decays at LHCb

Wednesday 21 March 2012 17:03 (1h 57m)

Using an integrated luminosity of 0.69 fb-1 collected by LHCb in 2011, we report measurements of direct and mixing-induced CP violation in $B^0 \to \pi^+\pi^-$ and $B^0_s \to K^+K^-$ decays. The measurements of the B0→p+p- asymmetries are compatible with those from the B factories and yield 3.2s evidence of mixing-induced CP violation, whereas the Bs0→K+K- asymmetries are measured for the first time ever.

Presenter: PERAZZINI, Stefano (INFN Bologna (IT))

Session Classification: Physics of heavy flavours

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

b-Jet Identification in the CMS Experiment

Wednesday 21 March 2012 17:07 (1h 53m)

The CMS experiment has developed a variety of algorithms that use the impact parameters of charged-particle tracks, the properties of reconstructed decay vertices, the presence of a lepton or combinations of these quantities to select samples of jets with different b purities.The performance of the algorithms in terms of efficiency and misidentification probability has been measured from multijet events.

Presenter: Mr ZHANG, Jinzhong (Northeastern University (US))

Session Classification: Detector performance studies

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

Search for CP violation in $D^+ \to K^-K^+\pi^+$ decays at LHCb

Wednesday 21 March 2012 17:03 (1h 57m)

A model-independent search for direct CP violation in the Cabibbo suppressed decay $D^+ \to K^-K^+\pi^+$ in a sample of approximately 370,000 decays is described. The normalized Dalitz plot distributions for D^+ and D^- are compared using four different binning schemes that are sensitive to different manifestations of CP violation. No evidence for CP asymmetry is found.

Presenter: GORDON, Hamish (University of Oxford (GB))

Session Classification: Physics of heavy flavours

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

Search for supersymmetry using the razor variables with the CMS experiment

Wednesday 21 March 2012 17:05 (1h 55m)

A search is presented for new heavy particles using the razor variables. The search uses a mix of all-hadronic and leptonic samples to empirically model the various SM backgrounds. Constraints are placed on SUSY and exotic models.

Presenter: Mr CHEN, Yi (California Institute of Technology (US))

Session Classification: BSM searches

Contribution ID: **67** Type: **not specified**

Search for a Neutral MSSM Higgs Boson Decaying to Tau Pairs in pp collisions in CMS

Wednesday 21 March 2012 17:05 (1h 54m)

A search for a neutral MSSM Higgs boson decaying into tau leptons using CMS is described. The analysis is sensitive in a large range of Higgs boson masses from 90 to 500 GeV.

Presenter: SWANSON, Joshua James (University of Wisconsin (US))

Session Classification: Higgs searches

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

Search for Physics Beyond the Standard Model using Multileptonic signatures with the CMS detector

Wednesday 21 March 2012 17:05 (1h 55m)

A search for physics beyond the Standard Model using events with at least three leptons is described. Numerous exclusive channels are studied using data-driven techniques to quantify the SM backgrounds

Presenter: TROENDLE, Daniel Cedric (KIT - Karlsruhe Institute of Technology (DE))

Session Classification: BSM searches

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

Measurment of b-tagging efficiency using ttbar events in CMS

Wednesday 21 March 2012 17:04 (1h 56m)

Jet flavour tagging is one of the key ingredients of the diverse physics program of the CMS experiment.
Various flavour-taggers based on the lifetime and semileptonic decay of the heavy quarks have been implemented. They use jets, tracks, leptons and/or vertices. We exploit the \ttbar samples collected
at $\sqrt{s} = 7$ TeV running of the LHC during the first half of 2011, to extract the efficiencies for tagging the b-quark, and c-quark jets. Event samples identified as semileptonic and fully-leptonic decays of the $t\bar{t}$ are used. Different techniques based on extraction of high purity b-flavored jets, or on requiring the consistency between the observed and expected number of tags in the events are used to extract the performance of the heavy flavor algorithms directly from data and measure the differences between data and simulation.

Presenter: SEGALA, Michael Andrew (Brown University (US))

Session Classification: Top quark physics

Contribution ID: **70** Type: **not specified**

Search of H decaying into bb in ZH production with the CMS experiment

Wednesday 21 March 2012 17:05 (1h 54m)

This poster presents a direct search of the Higgs boson using a data sample of L=4.6 fb-1, recorded by CMS detector in pp collision at LHC at sqrs(s) = 7TeV. The analysis searches the Higgs boson, produced in association with a Z boson, in its decay to a bottom quark pair. The Zdecays in lepton and neutrinos pairs are considered in the analysis. The expected 95% upper limits are derived on the production cross section in the Higgs mass range between 110 and 135.

Presenter: BORTIGNON, Pierluigi (Eidgenoessische Tech. Hochschule Zuerich (CH))

Session Classification: Higgs searches

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

Angular correlation between B-hadrons produced in association with a Z boson at CMS

Wednesday 21 March 2012 17:00 (2 hours)

The production of b quark pairs in association with a Z/gamma* boson was studied at the CMS experiment using pp collision data collected in 2011. The normalized production cross section as function of the B hadron angular separation is compared with QCD predictions at tree-level and NLO accuracy. The identification of displaced secondary vertices is made with no use of jets, which allows to study B pair production at small angular separation.

Presenter: FAVARO, Carlotta (Universitaet Zuerich (CH))

Session Classification: EW gauge bosons

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

Tagged time-dependent angular analysis of Bs->J/psiphi decays at LHCb

Wednesday 21 March 2012 17:03 (1h 57m)

The determination of the CP-violating phase φs in B0s → J/ψφ decays is one of the key goals of the LHCb experiment. Its value is predicted to be very small in the Standard Model but can be significantly enhanced in many models of new physics. We present the world's best measurement of φs and the first observation of a non-zero ΔΓs based upon 1fb−1 of data collected at LHCb during 2011.

Presenter: DUPERTUIS, Frederic (EPFL - Lausanne)

Session Classification: Physics of heavy flavours

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

Jet quenching in CMS

Wednesday 21 March 2012 17:02 (1h 58m)

CMS has performed several measurements on the phenomenon of parton energy loss in QGP. This poster combines the conclusion of the jet based measurements.

Presenter: YILMAZ, Yetkin (Massachusetts Inst. of Technology (US))

Session Classification: Heavy Ion collisions

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

WH production with H decaying into bottom quarks in the CMS detector

Wednesday 21 March 2012 17:05 (1h 54m)

This poster presents a direct search of the Higgs boson using a data sample of L = 4.6/fb, recorded by the CMS detector in pp collisions at the LHC with sqrt(s) = 7 TeV. The analysis searches for the Higgs boson, produced in association with a W boson, in its decay into a bottom quark pair. The expected 95% upper limits on the production cross section are evaluated in the Higgs mass range between 110 GeV and 135 GeV for the WH production mechanism and for the combined search merging WH and ZH decay modes.

Presenter: MOONEY, Michael Ryan (Princeton University (US))

Session Classification: Higgs searches

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

Measurement of Top Quark Pair Differential Cross-Sections at CMS

Wednesday 21 March 2012 17:04 (1h 56m)

A measurement of normalized top quark pair differential cross-sections in pp collisions at sqrt(s)=7 TeV in 1.14 fbˆ-1 of data collected by the CMS detector is presented. The measurement is performed semileptonic and dileptonic final states, and provided as functions of the transverse momentum, (pseudo-)rapidity, and the invariant mass of the final state leptons, the top quarks, and of the top-antitop system.

Presenter: DORLAND, Tyler (DESY)

Session Classification: Top quark physics

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

Elastic and Total Cross Section with TOTEM

Wednesday 21 March 2012 17:01 (1h 59m)

TOTEM's recent results on differential elastic and total cross section of proton-proton scattering at the energy of 7 TeV.

Presenter: KASPAR, Jan (Division Elementary Particle Phys.-Institute of Physics-Acad. o)

Session Classification: Jets and QCD studies

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

Measurement of the Z/γ* + b(b) cross section in pp collisions at √s=7TeV with the CMS detector

Wednesday 21 March 2012 17:00 (2 hours)

A measurement of the Z/γ* + b(b) cross section is performed with the CMS detector in pp collissions at the LHC. The study has been done with a data sample from 2011 corresponding to an integrated luminosity of 2.1/fb.
The Z+bb and Z+b production rates are presented together with some of the key kinematic variables.

Presenter: CEARD, Ludivine (Universite Catholique de Louvain (BE))

Session Classification: EW gauge bosons

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

Search for a Standard Model Higgs boson in the decay channel H->ZZ(*)->4l with the CMS experiment

Wednesday 21 March 2012 17:05 (1h 54m)

We present the results of the search for a Standard Model Higgs boson in the 'golden' H->ZZ(*)->4l channel. A total of 4.7 fb-1 of 2011 data collected by the CMS detector is analyzed. No evidence of deviations from the Standard Model prediction is found, therefore a limit on its production cross-section is set.

Presenter: BOTTA, Cristina (Universita e INFN (IT))

Session Classification: Higgs searches

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

Measurement of Tau Polarization in W–> tau nu decays with the ATLAS Detector

Wednesday 21 March 2012 17:00 (2 hours)

Presenter: CUMMINGS, Jane Theresa (Yale University (US))

Session Classification: EW gauge bosons

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

First observation of B+ to pi mu mu, with LHCb

Wednesday 21 March 2012 17:03 (1h 57m)

A search for the decay B+ to pi mu mu is presented using 1.0˜fb^{-1} of pp collision data integrated luminosity collected with the LHCb experiment at the Large Hadron Collider during 2011.
This decay is observed for the first time with 5.2 σ significance, at a branching fraction \BR(\pimumu) = (2.4˜±˜0.6˜(stat)˜±˜0.2˜(syst))$\times 10^{-8}$.

Presenter: CIEZAREK, Gregory Max (Imperial College Sci., Tech. & Med. (GB))

Session Classification: Physics of heavy flavours

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

Search for the rare decays Bd->4mu and Bs->4mu at LHCb

Wednesday 21 March 2012 17:03 (1h 57m)

A search for the decays Bs->4mu and Bd->4mu in a data sample of 1.0 inverse femtobarns collected with the LHCb detector in 2011 is discussed. In the SM, the non-resonant \Bsmmmm branching fraction is expected to be <10ˆ(-10)
One signal candidate is observed in the B_d channel, and no signal candidates are observed in the B_s channel. These observed events are consistent with the expected backgrounds and upper limits on the branching fractions are set
at \\
$BR(Bs- > 4mu) < 1.3 \times 10^{-8}$ and
$BR(Bd- > 4mu) < 5.4 \times 10^{-9}$ at 95\% CL.

Presenter: Mr SEPP, Indrek

Session Classification: Physics of heavy flavours

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

Search for ADD in Di-Lepton Final State in pp Collisions at 7 TeV with CMS experiment

Wednesday 21 March 2012 17:05 (1h 55m)

We present the results of a search for large extra spatial dimensions in events with dilepton final state using the 2/fb of data collected with the CMS detector at the LHC. The observed dilepton invariant mass distribution is found to be consistent with standard model expectation. Depending on the number of extra dimensions, limits are set on the onset of quantum gravity scale.

Presenter: ETESAMI, Seyed Mohsen (School of Particles and Accelerator Inst. for Res. in Fundam. S)

Session Classification: BSM searches

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

Search for Bs and B0 decays to mu+mu- with the CMS detector

Wednesday 21 March 2012 17:03 (1h 57m)

A search for the rare decays Bs to mu+mu- and Bd to mu+mu- is presented, performed with the CMS detector with an integrated luminosity of 5 fbˆ-1.

Presenter: NAGELI, Christoph (Eidgenoessische Tech. Hochschule Zuerich (CH))

Session Classification: Physics of heavy flavours

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

Measurement of the pseudorapidity and centrality dependence of transverse energy flow in PbPb collisions at 2.76 TeV in CMS

Wednesday 21 March 2012 17:02 (1h 58m)

Transverse energy measurements offer insight into the dynamics of heavy ion collisions and the total entropy created. At very forward pseudorapidities they may also be sensitive to the low momentum components of the nuclear wave-function. CMS has almost hermetic calorimetry coverage with fine granularity and excellent resolution. In this poster the transverse energy measurements from 2.76 TeV PbPb collisions as a function of pseudorapidity and centrality are shown. They are also compared to lower energy data.

Presenter: KENNY, Pat (University of Kansas (US))

Session Classification: Heavy Ion collisions

Contribution ID: **85** Type: **not specified**

Quarkonium production in pp collisions at LHC in CMS

Wednesday 21 March 2012 17:03 (1h 57m)

We present an overview of J/psi, psi' and Upsilon production cross-section measurements in pp collisions at sqrt(s) = 7 TeV in the CMS experiment. First results from the 1P charmonium state and the exotic X(3872) are also discussed.

Presenters: DOZEN, Candan (Cukurova University); GOKBULUT, Gul (Cukurova University)

Session Classification: Physics of heavy flavours

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

Search for supersymmetry with jets+missing transverse energy in CMS

Wednesday 21 March 2012 17:05 (1h 55m)

A search for supersymmetry using events with multijets and missing energy collected at CMS is presented. Backgrounds are evaluated using various data-driven techniques, and the results are interpreted within the context of the cMSSM as well as several simplified models.

Presenter: STURDY, Jared (University of California Riverside (US))

Session Classification: BSM searches

Contribution ID: **87** Type: **not specified**

Studies of Upsilon states in PbPb collisions at 2.76 TeV in CMS

Wednesday 21 March 2012 17:02 (1h 58m)

The poster summarizes the measurements done by the CMS experiment on the various states of the Upsilon particle in PbPb collisions, compared to pp collisions. The results serve as a thermometer for the QCD matter created in the collisions, at extreme energy density.

Presenter: HU, Zhen (Purdue University (US))

Session Classification: Heavy Ion collisions

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

Studies of Upsilon states in PbPb collisions at 2.76 TeV

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

Exotic meson studies at LHCb

Wednesday 21 March 2012 17:03 (1h 57m)

In this poster, we present the narrow J/ψφ resonances X(4140) and X(4274) search as well as the X(3872) mass and productions cross-section measurements. These analysis have been done using pp collisions data collected at LHCb.

Presenter: BRESSIEUX, Joel (Ecole Polytechnique Federale de Lausanne (CH))

Session Classification: Physics of heavy flavours