

IWHSS2019, Aveiro, Portugal

IWHSS 19

IWI International
Workshop on Hadron
Structure and Spectroscopy
COMPASS Collaboration meeting
24-26 June, Aveiro, Portugal



LABORATÓRIO DE INSTRUMENTAÇÃO
E FÍSICA EXPERIMENTAL DE PARTÍCULAS
PARTICLES AND ACCELERATORS



universidade
de aveiro

i3N

INSTITUTO DE INVESTIGAÇÃO EM
NANOTECNOLOGIA E EM
NANOMATERIAIS



Report of Contributions

Contribution ID: 1

Type: **not specified**

Opening of the workshop

Monday, June 24, 2019 9:00 AM (5 minutes)

Opening of the workshop (5')

Presenter: VELOSO, João

Session Classification: Opening Session

Contribution ID: 2

Type: **not specified**

Welcoming to Aveiro and the University

Monday, June 24, 2019 9:05 AM (10 minutes)

Welcoming to Aveiro and the University (10')

Presenter: Prof. CASTRO, Doutor Luís (Vice-Reitor)

Session Classification: Opening Session

Contribution ID: 4

Type: **not specified**

Nambu-Goldstone modes and the emergence of mass

Monday, June 24, 2019 9:20 AM (40 minutes)

Nambu-Goldstone modes and the emergence of mass (35' + 5')

Presenter: ROBERTS, Craig (Argonne National Laboratory)

Session Classification: Session I - part 1

Contribution ID: 5

Type: **not specified**

Progress in unpolarised TMD extraction

Monday, June 24, 2019 10:00 AM (30 minutes)

Progress in unpolarised TMD extraction (25' + 5')

Presenter: Dr BERTONE, Valerio (Università degli studi di Pavia)

Session Classification: Session I - part 1

Contribution ID: 6

Type: **not specified**

TMD evolution from SIDIS data

Monday, June 24, 2019 11:00 AM (30 minutes)

TMD evolution from SIDIS data (25' + 5')

Abstract:

Obtaining information on transverse momentum dependent functions (TMDs) from data has tested our understanding of the underlying theory of strong interactions. At small to moderate values of the hard scale, it is of particular importance to make at least rough estimates of the applicability of factorization theorems. In this talk, I will discuss about how one may try to address this issue in SIDIS. I will focus on the unpolarized case, providing concrete examples of the challenges currently faced in the extraction of TMDs.

Presenter: GONZALEZ H., J. Osvaldo (University of Turin)**Session Classification:** Session I - part 2

Contribution ID: 7

Type: **not specified**

Experimental overview of TMD PDFs from SIDIS and DY data

Monday, June 24, 2019 11:30 AM (40 minutes)

Experimental overview of TMD PDFs from SIDIS and DY data (35' + 5')

Presenter: BRADAMANTE, Franco (Universita e INFN Trieste (IT))

Session Classification: Session I - part 2

Contribution ID: 8

Type: **not specified**

Drell-Yan results from COMPASS

Monday, June 24, 2019 12:10 PM (30 minutes)

Drell-Yan results from COMPASS (25' + 5')

Presenter: MEYER, Marco (Univ. Illinois at Urbana Champaign (US))

Session Classification: Session I - part 2

Contribution ID: 9

Type: **not specified**

Measurability of pressure inside the proton

Monday, June 24, 2019 2:30 PM (40 minutes)

Measurability of pressure inside the proton (35' + 5')

Presenter: KUMERICKI, Kresimir (University of Zagreb)

Session Classification: Session II - part 1

Contribution ID: **10**

Type: **not specified**

Generalized Parton Distributions - from experimental data to 3D structure of the nucleon

Monday, June 24, 2019 3:10 PM (30 minutes)

Generalized Parton Distributions - from experimental data to 3D structure of the nucleon (25' + 5')

Presenter: SZNAJDER, Paweł (National Centre for Nuclear Research)

Session Classification: Session II - part 1

Contribution ID: 11

Type: **not specified**

Generalised Parton Distribution studies through Deeply Virtual Compton Scattering at Jefferson Lab

Monday, June 24, 2019 4:20 PM (30 minutes)

Generalised Parton Distribution studies through Deeply Virtual Compton Scattering at Jefferson Lab (25' + 5')

Abstract:

Generalised Parton Distributions (GPDs), which relate the longitudinal momentum fraction of quarks and gluons to their transverse position, enable 3D tomographic imaging of the nucleon and can provide information on its spin composition and distribution of pressure. The golden channel for accessing GPDs experimentally is the exclusive process of deeply virtual Compton scattering (DVCS), in which a high energy electron scatters from a parton within a nucleon and a high energy photon is produced as a result. We present DVCS highlights from Jefferson Lab in the 6 GeV era and an overview of the 12 GeV programme.

Presenter: SOKHAN, Daria (University of Glasgow, UK)

Session Classification: Session II - part 2

Contribution ID: 12

Type: **not specified**

GPD Measurements at COMPASS

Monday, June 24, 2019 4:50 PM (30 minutes)

GPD Measurements at COMPASS (25' + 5')

Presenter: LIN, Po-Ju (University of Colorado at Boulder)

Session Classification: Session II - part 2

Contribution ID: 13

Type: **not specified**

Update on JPAC Activities in Hadron Spectroscopy

Tuesday, June 25, 2019 9:00 AM (40 minutes)

Update on JPAC Activities in Hadron Spectroscopy (35' + 5')

Presenter: JACKURA, Andrew (Indiana University)

Session Classification: Session III

Contribution ID: 14

Type: **not specified**

Experiment GlueX: Early results and future plans

Tuesday, June 25, 2019 9:40 AM (30 minutes)

Experiment GlueX: Early results and future plans (25' + 5')

Abstract:

The GlueX experiment in Hall D at Jefferson Lab has just finished the data taking for the first phase of the project. The main purpose of the experiment is the search for hybrid mesons in the light quark sector. The experiment studies interactions of a linearly polarized photon beam made by 11.7 GeV electrons with a hydrogen target, with the help of a nearly hermetic spectrometer for charged and neutral particles. About 25% of the data acquired have been analyzed. The first physics results include studies of photoproduction of light mesons by a linearly polarized beam, and a measurement of the J/ψ photoproduction close to threshold. The latter allows to search for the LHCb's pentaquarks in photoproduction. The first results on the search for hybrid mesons are expected after the whole data sample has been analyzed. The next stage of GlueX data taking will include a new detector for charged kaon identification, and will run at higher luminosity, in order to search for hybrid mesons decaying to strange particles, as well as to contribute to the spectroscopy of hyperons. I will also discuss a proposal to modify the Hall D facility in order to provide a KOL beam, which would allow to study strange baryons and mesons at a new level of precision.

Presenter: CHUDAKOV, Eugene (Jefferson Lab)**Session Classification:** Session III

Contribution ID: 15

Type: **not specified**

From Pions to Kaons - Hadron Spectroscopy at COMPASS/AMBER

Tuesday, June 25, 2019 10:10 AM (30 minutes)

From Pions to Kaons - Hadron Spectroscopy at COMPASS/AMBER (25' + 5')

Presenter: WAGNER, Mathias (University of Bonn (DE))

Session Classification: Session III

Contribution ID: 16

Type: **not specified**

The proton radius puzzle

Tuesday, June 25, 2019 11:10 AM (40 minutes)

The proton radius puzzle (35' + 5')

Presenter: STRAUCH, Steffen (University of South Carolina)

Session Classification: Session IV

Contribution ID: 17

Type: **not specified**

Proton Radius Measurement in High-Energy Muon Scattering at COMPASS++/AMBER

Tuesday, June 25, 2019 11:50 AM (30 minutes)

Proton Radius Measurement in High-Energy Muon Scattering at COMPASS++/AMBER (25' + 5')

Presenter: Mr DREISBACH, Christian (Technische Universitaet Muenchen (DE))

Session Classification: Session IV

Contribution ID: 18

Type: **not specified**

Achievements and open issues in the determination of fragmentation functions

Tuesday, June 25, 2019 2:30 PM (30 minutes)

Achievements and open issues in the determination of fragmentation functions (25' + 5')

Presenter: Dr NOCERA, Emanuele Roberto (University of Oxford)

Session Classification: Session V

Contribution ID: 19

Type: **not specified**

Single hadron multiplicities in SIDIS @ COMPASS

Tuesday, June 25, 2019 3:00 PM (30 minutes)

Single hadron multiplicities in SIDIS @ COMPASS (25' + 5')

Presenter: BEDFER, Yann (Université Paris-Saclay (FR))

Session Classification: Session V

Contribution ID: 20

Type: **not specified**

The Data Acquisition System for the COMPASS++/AMBER Experiment

Wednesday, June 26, 2019 10:30 AM (30 minutes)

The Data Acquisition System for the COMPASS++/AMBER Experiment (25' + 5')

Abstract:

COMPASS++/AMBER experiment is a multipurpose spectrometer at the CERN SPS. It will perform variety of measurements with different beams and targets addressing fundamental questions of Quantum Chromodynamics. The development of the data acquisition is challenged by diverse requirements of wide physics programs, difference in detectors compositions, and high precision measurements i.e. high statistics and high data rate. In order to be flexible and be able to cope with high data rate, the new DAQ employs trigger less free running front-end electronics. Depending on the physics program the amount of data streamed by the detectors may exceed 30 GB/s during the spill. A data reduction is performed by an integrated digital trigger processor, which defines a time of interest. The data within the time of interest are extracted, merged in one event, and transmitted to the Central Data Recording facility. The bandwidth of the CDR is limited to 2 GB/s. The architecture of the DAQ and the state of the development will be presented.

Presenter: KONOROV, Igor (Technische Universitaet Muenchen (DE))

Session Classification: Session VIII

Contribution ID: 27

Type: **not specified**

Anti-proton production cross sections and the search for dark matter

Tuesday, June 25, 2019 3:30 PM (30 minutes)

Anti-proton production cross sections and the search for dark matter (25' + 5')

Presenter: DONATO, Fiorenza (INFN - National Institute for Nuclear Physics)

Session Classification: Session VI

Contribution ID: 28

Type: **not specified**

Leading hadronic contribution to the muon $g-2$ from lattice QCD and experiment

Tuesday, June 25, 2019 4:30 PM (30 minutes)

Leading hadronic contribution to the muon $g-2$ from lattice QCD and experiment (25' + 5')

Presenter: KRSTIC MARINKOVIC, Marina (Trinity College Dublin (IE))

Session Classification: Session VII

Contribution ID: 29

Type: **not specified**

From lattice QCD correlators with static heavy quarks and dynamical light quarks to the unitary study of quarkonium resonances

Tuesday, June 25, 2019 5:00 PM (30 minutes)

From lattice QCD correlators with static heavy quarks and dynamical light quarks to the unitary study of quarkonium resonances (25' + 5')

Presenter: BICUDO, Pedro (IST Lisboa)

Session Classification: Session VII

Contribution ID: 31

Type: **not specified**

The RHIC Cold QCD Program: A Gaze into EIC Physics

Wednesday, June 26, 2019 11:00 AM (30 minutes)

The RHIC Cold QCD Program: A Gaze into EIC Physics (25' + 5')

Presenter: ASCHENAUER, Elke-Caroline (BNL)

Session Classification: Session VIII

Contribution ID: 32

Type: **not specified**

Physics Beyond Collider: fixed-target opportunities for QCD at CERN

Wednesday, June 26, 2019 11:30 AM (30 minutes)

Physics Beyond Collider: fixed-target opportunities for QCD at CERN (25' + 5')

Presenter: SCHNELL, Gunar

Session Classification: Session VIII

Contribution ID: **33**

Type: **not specified**

Closing remarks

Wednesday, June 26, 2019 12:00 PM (10 minutes)

Session Classification: Closing session