QCD@Work - International Workshop on QCD - Theory and Experiment

Report of Contributions

https://agenda.infn.it/e/6998

Contribution ID: **1** Type: **Poster**

Color-ordered form factors for the four-gluon amplitudes

The string-derived Bern-Kosower formalism was originally developed for the computation of on-shell gluon amplitudes. In previous work we have, using worldline methods, shown how to extend and optimize this formalism as a tool for obtaining form-factor decompositions of the off-shell 1PI gluon amplitudes. Following an earlier rederivation of the three-gluon (Ball-Chiu) form factor decomposition, here we present the first explicit form factor decomposition of the one-loop four-gluon amplitudes, unifying the scalar, spinor and gluon loop cases. As in the three-gluon case, this unification is made possible by the fact that the treatment of the gluon loop in the string-derived formalism is equivalent to the background field method in quantum Feynman gauge. Differently from the three-point case, however, at four points for achieving this unification it is also essential that the formalism naturally leads to a color-ordered form of the amplitudes. A particularly simple structure emerges in the N=4 SYM case.

Primary author: Mr AHMADINIAZ, Naser (Instituto de Física y Matemáticas (IFM) Universidad Michoacana de San Nicolás de Hidalgo (UMSNH) (Un)

Presenter: Mr AHMADINIAZ, Naser (Instituto de Física y Matemáticas (IFM) Universidad Michoacana de San Nicolás de Hidalgo (UMSNH) (Un)

Contribution ID: **5** Type: **Poster**

Analysis of rho condensation in a Nambu-Jona-Lasinio model

A non-local Nambu-Jona-Lasinio model can be derived from QCD in the low-energy limit. In this way, it is possible to fix all the free parameters of the model with physical ones. We use this approach to derive a local limit to the Nambu-Jona-Lasinio model with the parameters those obtained from QCD in order to fix the physical parameters of ρ condensation. ρ condensation is a consequence of the highly non-trivial behavior of the QCD vacuum in presence a very strong magnetic field giving rising to superconductive behavior in quark matter. We extend previous computations with an analysis of the ρ decay and considering finite temperature effects.

Primary author: Dr FRASCA, Marco (MBDA)

Presenter: Dr FRASCA, Marco (MBDA)

Contribution ID: **7** Type: **Poster**

Nonextensive thermodynamics for hadrons with finite chemical potentials

QCD at finite temperature has been usually studied within the standard Boltzmann-Gibbs statistics. One of the standard properties of this is that entropy is extensive, which means that for two systems A and B which are independent (in the sense that the probabilities of the states of A+B factorize into those of A and B), the entropy of the joint system S(A+B) is equal to the sum of the individual entropies S(A)+S(B). Very recently it has been shown that the thermodynamics of hadronic systems show some signals of non-extensivity, in particular recent LHC experiment have confirmed that the fireball description based on the BG thermodynamics cannot completely describe the experimental data for pt-distributions for several hadrons produced in p+p collisions, while the descriptions based on Tsallis statistics has been successful in describing the same data [1]. In the Tsallis formalism the entropy of the joint system is S(A+B) = S(A) + S(B) + (1-q) S(A) S(B), where q is a measuring of the degree of nonextensivity. Tsallis statistics is a generalization of the BG statistics [2].

In this work we derive the nonextensive thermodynamics of an ideal gas composed by bosons and/or fermions from its partition function for systems with finite chemical potentials [3]. It is shown that the thermodynamical quantities derived in the present work are in agreement with those obtained in previous works [4]. It is studied in details the chemical freeze-out transition line in the T-mu diagram of QCD, and the effect of non-extensivity on it.

We show that the nonextensive statistics provides a harder equation of state than that predicted by the Boltzmann-Gibbs statistics, i.e. higher values of the pressure for a given energy density. This fact induced us to apply this formalism to study the proto-neutron star stability by solving the Tolman-Oppenheimer-Volkoff (TOV) equations [5]. The most recent experimental measurements demand a larger value for the radius of neutron stars as compared to the prediction from current models, and this implies the need of a harder equation of state [6]. Our results based on a simple thermodynamical description of the neutron star matter within the non extensive statistics go in the right direction to explain star stability.

[1] J. Cleymans, G.I. Lykasov, A.S. Parvan, A.S. Sorin, O.V. Teryaev, Phys. Lett. B 723 (2013) 351-354.
[2] C. Tsallis, J. Stat. Phys. 52 (1988) 479.
[3] E. Megías, D.P. Menezes, A. Deppman, arXiv:1312.7134[hep-ph] (2013).
[4] J.M. Conroy, H.G. Miller and A.R. Plastino, Physics Letters A 374 (2010) 4581-4584.
[5] R.C. Tolman, Phys. Rev. 55, 364 (1939); J.R. Oppenheimer and G.M. Volkoff, Phys. Rev. 55, 374 (1939).
[6] J. Antoniadis et al, Science 26, 340 n. 6131 (2013).

Primary author: Dr MEGIAS, Eugenio (Universitat Autonoma de Barcelona)

Co-authors: Prof. DEPPMAN, Airton (University of São Paulo); Prof. MENEZES, Debora P. (Universidade Federal de Santa Catarina, Brazil)

Presenter: Dr MEGIAS, Eugenio (Universitat Autonoma de Barcelona)

Contribution ID: **8** Type: **Poster**

Exotic mesons in a holographic approach to QCD

Since quarks interact with each other through the exchange of colored self-interacting gluons, QCD predicts the existence of hybrid configurations, composed by a quark, an antiquark and an excited gluon. This structure gives rise to hybrid mesons, whose J^{PC} quantum numbers can be either ordinary or exotic. In the former case hybrid configurations are not easily observable because they mix with standard quark-antiquark states having the same ordinary quantum numbers. Conversely, mesons with exotic quantum numbers cannot be represented as quark-antiquark pairs, so their detection would point out the existence of non-standard structures comprising gluons as constituents. Several QCD models indicate the hybrid meson with quantum numbers $J^{PC} = 1^{-+}$ as the lowest-lying exotic state.

We explore the properties of such configuration by means of holographic QCD, a phenomenological approach inspired by the gauge/gravity correspondence. This technique has been used to evaluate relevant physical quantities, such as the mass spectrum and the decay constants of 1^{-+} hybrid mesons. The computed masses, compared to the experimental values of the 1^{-+} candidates $\pi_1(1400)$, $\pi_1(1600)$ and $\pi_1(2015)$, favour $\pi_1(1400)$ as the lightest hybrid exotic state. The behaviour of 1^{-+} hybrid mesons at finite temperature has been studied through the calculation of the spectral function. This analysis has shown that dissociation occurs at a lower temperature than for light vector and scalar mesons, and scalar glueballs. Our result can be interpreted as an indication that hybrid quark-gluon configurations, although present in the meson spectrum, suffer of larger instabilities with respect to other kind of states.

Moreover, the relatively low melting temperature could explain why it is difficult to detect hybrid mesons in experiments.

Primary authors: GIANNUZZI, Floriana (BA); BELLANTUONO, Loredana (BA); COLANGELO, Pietro (BA)

Presenter: BELLANTUONO, Loredana (BA)

Contribution ID: **23** Type: **Poster**

Relations between the QCD sum rules with baryon distribution amplitudes

Recently we have proposed unitary symmetry relations between the Light-Cone QCD sum rules with meson and photon distribution amplitudes (DA's). But they are not suitable if one deals with the baryon DA's because in this case interpolating currents have different nature: one of them is baryon current while the other one is either a meson or a photon current. As the resulting formules with baryon DA's are even more complicated then for the sum rules with the meson or photon DA's it would be of interest to search unitary symmetry relations between various sum rules.

We have succeded in deriving the relations between the LC QCD sum rules with the baryon DA's for the electromagnetic form factors of the Λ and the corresponding transition $\Sigma^0\Lambda$ quantities. We have proved their validity in the NRQM and also proved that these SR's should be identical (up to a factor).

Primary author: Dr ZAMIRALOV, Valeriy (skobeltsyn institute of nuclear physics of the lomonosov moscow state university)

Co-author: Prof. OZPINECI, Altug (Middle-East Technical University, Ankara,Turkey)

Presenter: Dr ZAMIRALOV, Valeriy (skobeltsyn institute of nuclear physics of the lomonosov moscow state university)

Contribution ID: **26** Type: **Poster**

Semirelativistic Bound-State Equations: A Few Trivial Considerations

Observing renewed interest in (semi-) relativistic descriptions of bound states, we would like to make a few comments on the eigenvalue problem posed by the spinless Salpeter equation and, illustrated by the example of the Woods-Saxon potential, recall various elementary tools that practitioners looking for analytic albeit approximate solutions might find useful in their quest.

Primary author: LUCHA, Wolfgang (Austrian Academy of Sciences)

Presenter: LUCHA, Wolfgang (Austrian Academy of Sciences)

Contribution ID: **28** Type: **Poster**

On the recent anomalies in semileptonic B decays

In the LHC era, the discovery of New Physics signals is the major ambition of the high energy physics community and flavor physics can provide access to new heavy particles (Kaluza—Klein modes, supersymmetric particles ⋯) in complementary way with respect to direct searches. Signals of possible deviations with respect to the Standard Model (SM) have been recently claimed both by BaBar and LHCb through the analyses of specific semileptonic B meson decays. I'll focus on those decays with a tau lepton in the final state for which new BaBar measurements are available, showing a deviation from the Standard Model at 3.4 sigma level. I study the effects of new operators in the effective weak Hamiltonian on a set of observables, in semileptonic B —> D^ (*) modes as well as in semileptonic B and B_s decays to excited charmed mesons (P.Biancofiore, P. Colangelo and F. De Fazio, Phys. Rev. D 87, 074010 (2013)). Moreover, I'll discuss the phenomenology of the semileptonic decay B —> K* mu^+ mu^-, in the framework of a warped extra-dimensional scenario. Since a complete set of form-factor independent observables have been recently measured by the LHCb collaboration, with few sizable deviations with respect to the Standard Models in some of them, it'd be interesting to put constraints on New Physics models from the transition b —> s l^+ l^- (P.Biancofiore, P. Colangelo and F. De Fazio, arXiv:1403.2944).

Primary author: BIANCOFIORE, Pietro (University of Bari and INFN)

Presenter: BIANCOFIORE, Pietro (University of Bari and INFN)

Contribution ID: **30** Type: **Poster**

Charmed Pseudoscalar and Vector Mesons: a Comprehensive QCD Sum-Rule View of Their Decay Constants

In spite of undeniable similarities of the applied techniques, rather different challenges are encountered when extracting, from QCD sum rules for two-point correlators of appropriate heavy-light interpolating currents, the decay constants of charmed mesons of, on the one hand, pseudoscalar nature and, on the other hand, vector nature. This observation justifies a careful reassessment of the corresponding findings.

Primary author: LUCHA, Wolfgang (Austrian Academy of Sciences)

Co-authors: Prof. MELIKHOV, Dmitri (Moscow State University); SIMULA, Silvano (ROMA3)

Presenter: LUCHA, Wolfgang (Austrian Academy of Sciences)

Contribution ID: **36** Type: **Poster**

Dense hadronic matter in compact stars

The existence of stars with masses up to 2 M_S and the hints of the existence of stars with radii smaller than about 11 km seem to require, at the same time, a stiff and a soft hadronic equation of state at large densities. We argue that these two apparently contradicting constraints could be actually an indication of the existence of two families of compact stars: hadronic stars, whose equation of state is soft, can be very compact, while quark stars, whose equation of state is stiff, can be very massive. In this respect, a crucial role is played, in the hadronic equation of state, by the delta isobars whose early appearance shifts to large densities the formation of hyperons.

Primary author: LAVAGNO, Andrea (TO)

Co-authors: DRAGO, Alessandro (FE); PAGLIARA, Giuseppe (FE)

Presenter: LAVAGNO, Andrea (TO)

Contribution ID: **40** Type: **Poster**

B and D mesons in nuclear matter via QCD Sum Rules

We calculate the shifts in the masses and decay constants of B and D mesons in nuclear medium in the frame work of QCD sum rules. We write the shifts in the masses and decay constants in terms of B-N and D-N scattering lengths and an extra phenomenological parameter entered to calculations. Computing an approciate forward scattering correlation function, we derive the QCD sum rules for the B-N and D-N scattering lengths and the extra phenomenological parameter in terms of various operators in nuclear medium. We numerically find the shifts in the masses and decay constants of the mesons under consideration and compare the obtained results with the existing predictions in the literature.

Primary author: Dr SUNDU PAMUK, Hayriye (Kocaeli University)

Co-authors: Dr AZIZI, Kazım (Dogus University); Dr ER, Nuray (Abant Izzet Baysal University)

Presenter: Dr SUNDU PAMUK, Hayriye (Kocaeli University)

Contribution ID: **41** Type: **Poster**

Padé approximants in eta and eta' transition form factors

The η transition form factor is analyzed for the first time in both space-like and time-like regions at low and intermediate energies in a model-independent approach through the use of rational approximants. With the release of the η → e+e−γ data on the very low energy region by the A2 Collaboration we extract the most precise slope and curvature parameters of the form factors as well as their values at zero and infinity. The impact of these results on several observables are also discussed.

Primary author: ESCRIBANO, Rafel (Universitat Autònoma de Barcelona)

Presenter: ESCRIBANO, Rafel (Universitat Autònoma de Barcelona)

Contribution ID: **42** Type: **Poster**

Accurate determinations of the rho and sigma poles through Padé Approximants

Based on the mathematically well defined Pade Theory, a theoretically safe new procedure for the extraction of the pole mass and width of a resonance is proposed. In particular, thanks to the Montessus de Ballore theorem we are able to unfold the Second Riemann Sheet of an amplitude to search for the position of the resonant pole in the complex plane (arXiv:1306.6308 [hep-ph]). The method is systematic and provides a model-independent treatment of the prediction and the corresponding errors of the approximation. When the Pade approximants are applied in combination with the Roy-like GKPY equations (arXiv:1102.2183 [hep-ph]) we are able to extract not only precise but actually accurate determinations of the rho and sigma poles, compatible and with errors of a similar size as in previous determinations.

Primary authors: Dr RUIZ DE ELVIRA, Jacobo (Helmholtz-Institut f\"ur Strahlen- und Kernphysik, Universit\"at Bonn, D-53115 Bonn, Germany); Dr SANZ-CILLERO, Juan Jose (Universidad Autónoma de Madrid); Dr MASJUAN, Pere (Institut f\"ur Kernphysik, Johannes Gutenberg-Universit\"at, D-55099 Mainz, Germany)

Presenter: Dr SANZ-CILLERO, Juan Jose (Universidad Autónoma de Madrid)

Contribution ID: **43** Type: **Poster**

Production of light flavour hadrons in pp, p–Pb and Pb–Pb collisions at the LHC energies measured with ALICE

In the first three years of the LHC operation, ALICE has measured identified light flavour hadrons in a wide transverse momentum range. The measurements have been performed in the three collision systems: pp at $\sqrt(s)$ = 0.9, 2.76 and 7 TeV, p-Pb at $\sqrt(s_{NN})$ = 5.02 TeV and Pb–Pb at $\sqrt(s_{NN})$ = 2.76 TeV.
In this poster, the latest results on transverse momentum distributions, particle ratios and integrated production yields for pi, K, p, Λ, Ξ and Ω will be reported. The system-size dependence of particle ratios will be discussed and a detailed comparison of the yields with thermal model predictions will be made.

Primary author: BARILE, Francesco (BA)

Presenter: BARILE, Francesco (BA)

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

Delta I=1/2 rule: 2014

Monday, 16 June 2014 09:00 (30 minutes)

Presenter: BURAS, Andrzej (TUM)

Session Classification: Session 1

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

The NA62 experiment at CERN SPS

Monday, 16 June 2014 10:30 (30 minutes)

Presenter: KOZHUHAROV, Venelin (LNF)

Session Classification: Session 1

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

Low energy constraints and scalar leptoquarks

Monday, 16 June 2014 10:00 (30 minutes)

Presenter: FAJFER, Svjetlana (University of Ljubljana and J. Stefan Institute)

Session Classification: Session 1

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

Latest LHCb results

Monday, 16 June 2014 09:30 (30 minutes)

Presenter: MARTINELLI, Maurizio (INFN)

Session Classification: Session 1

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

Conventional and exotic quarkonium at BABAR

Monday, 16 June 2014 12:00 (20 minutes)

Presenter: SANTORO, Valentina (INFN Ferrara)

Session Classification: Session 2

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

Quarkonium production in pp collisions with the CMS detector

Monday, 16 June 2014 12:40 (20 minutes)

Presenter: POMPILI, Alexis (B)

Session Classification: Session 2

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

News in quarkonium physics

Monday, 16 June 2014 11:30 (30 minutes)

Presenter: BRAMBILLA, Nora (TUM - Munich)

Session Classification: Session 2

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

X(3872) and Its Degenerate Partners in Heavy Quark QCD

Monday, 16 June 2014 12:20 (20 minutes)

Presenter: OZPINECI, Altug (METU - Ankara)

Session Classification: Session 2

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

Analysis of B_c−>D_s l l in the QCD sum Rules

Presenter: BASHIRI, Vali

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

Anomalous Transport: Holography, QCD and (Semi-)Metals

Monday, 16 June 2014 15:00 (30 minutes)

Presenter: LANDSTEINER, Karl (Instituto de Fisica Teorica CSIC/UAM)

Session Classification: Session 3

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

An asymptotic solution of large-N QCD and of n=1 SUSY QCD

Monday, 16 June 2014 15:30 (20 minutes)

Presenter: BOCHICCHIO, Marco (ROMA1)

Session Classification: Session 3

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

Thermodynamical and transport properties of sQGP from holographic QCD

Monday, 16 June 2014 15:50 (30 minutes)

Presenter: HUANG, Mei (IHEP - CAS)

Session Classification: Session 3

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

Anomalous Transport in Field Theory and Holography

Monday, 16 June 2014 16:20 (20 minutes)

Presenter: MEGIAS, Eugenio (Universitat Autonoma de Barcelona)

Session Classification: Session 3

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

Gluon Condensate at finite temperature and density in holographic QCD

Monday, 16 June 2014 17:30 (20 minutes)

Presenter: GIANNUZZI, Floriana (BA)

Session Classification: Session 4

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

Fuzzy bags, Polyakov loop and gauge/string duality

Monday, 16 June 2014 17:10 (20 minutes)

Presenter: ZUO, Fen

Session Classification: Session 4

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

Callan-Symanzik approach to infrared Yang-Mills theory

Wednesday, 18 June 2014 17:10 (20 minutes)

Presenter: WEBER, Axel (Univ. Mihocana - Morelia)

Session Classification: Session 10

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

Effective actions for dilaton interactions

Monday, 16 June 2014 17:50 (20 minutes)

Presenter: SERINO, Mirko (LE)

Session Classification: Session 4

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

Selected Issues in Non-Perturbative QCD

Tuesday, 17 June 2014 08:30 (30 minutes)

Presenter: TRENTADUE, Luca (PR)

Session Classification: Session 5

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

ATLAS QCD measurements for Higgs studies and New Physics searches

Tuesday, 17 June 2014 10:00 (30 minutes)

Presenter: PROISSL, Manuel (Univ. Edinburgh)

Session Classification: Session 5

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

Bottom fragmentation in top decays and impact on the top mass measurement

Tuesday, 17 June 2014 09:30 (30 minutes)

Presenter: CORCELLA, Gennaro (LNF)

Session Classification: Session 5

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

Results of the CMS experiment at the LHC

Tuesday, 17 June 2014 09:00 (30 minutes)

Presenter: ISILDAK, Bora (Ozyegin University)

Session Classification: Session 5

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

Developments in the parton distribution functions of the proton

Tuesday, 17 June 2014 11:30 (30 minutes)

Presenter: GUZZI, Marco (INFN)

Session Classification: Session 6

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

Precision QCD measurements at HERA

Tuesday, 17 June 2014 12:00 (20 minutes)

Presenter: PIRUMOV, Hayk (DESY)

Session Classification: Session 6

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

Rapidity evolution of Wilson lines at the next-to-leading order: Balitsky-JIMWLK equation at NLO

Tuesday, 17 June 2014 12:40 (20 minutes)

Presenter: CHIRILLI, Giovanni Antonio (The Ohio State University)

Session Classification: Session 6

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

Latest results on nucleon spin and QCD fits from COMPASS

Tuesday, 17 June 2014 12:20 (20 minutes)

Presenter: ANDRIEUX, Vincent (CEA Saclay)

Session Classification: Session 6

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

Helicity dependencies in jet substructures for boosted top quarks

Tuesday, 17 June 2014 15:40 (20 minutes)

Presenter: KITADONO, Yoshio (Academia Sinica)

Session Classification: Session 6a

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

Review of recent ALICE results

Wednesday, 18 June 2014 09:00 (30 minutes)

Presenter: ARNALDI, Roberta (INFN-Torino)

Session Classification: Session 7

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

Bottomonium in the plasma - lattice results.

Wednesday, 18 June 2014 09:30 (30 minutes)

Presenter: LOMBARDO, Maria Paola (LNF)

Session Classification: Session 7

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

Loop functions in thermal QCD

Wednesday, 18 June 2014 10:00 (30 minutes)

Presenter: VAIRO, Antonio (TUM)

Session Classification: Session 7

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

Heavy Flavour Production at HERA

Wednesday, 18 June 2014 10:50 (20 minutes)

Presenter: BRUGNERA, Riccardo (PD)

Session Classification: Session 7

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

Quark matter in neutron stars

Wednesday, 18 June 2014 11:40 (30 minutes)

Presenter: ALFORD, Mark (Washington University in St. Louis)

Session Classification: Session 8

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

Torsional oscillations of strange stars

Wednesday, 18 June 2014 12:10 (20 minutes)

Presenter: MANNARELLI, Massimo (LNGS)

Session Classification: Session 8

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

Isotropization and Thermalization of Quark-Gluon Plasma

Wednesday, 18 June 2014 12:50 (20 minutes)

Presenter: RUGGIERI, Marco (Yukawa Institute for Theoretical Physics, Kyoto University)

Session Classification: Session 8

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

Charged Pion Crystal in dense QCD

Wednesday, 18 June 2014 12:30 (20 minutes)

Presenter: ABUKI, Hiroaki (BA)

Session Classification: Session 8

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

Recent results from the COMPASS hadron program

Thursday, 19 June 2014 09:50 (30 minutes)

Presenter: UHL, Sebastian (Technische Universität München)

Session Classification: Session 11

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

Hadronic contributions to (g-2)_\mu: a new approach to light-by-light

Thursday, 19 June 2014 11:50 (30 minutes)

Presenter: COLANGELO, Gilberto (Berna University)

Session Classification: Session 12

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

Susceptibility of the chiral condensate

Thursday, 19 June 2014 09:00 (30 minutes)

Presenter: BECIREVIC, Damir (CNRS and Universite' Paris Sud XI)

Session Classification: Session 11

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

EW chiral Lagrangians and the Higgs properties at the one-loop level

Thursday, 19 June 2014 10:20 (20 minutes)

Presenter: SANZ-CILLERO, Juan Jose (Universidad Autónoma de Madrid)

Session Classification: Session 11

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

Hadronic cross section and the muon g-2

Thursday, 19 June 2014 11:30 (20 minutes)

Presenter: CARTARO, Concetta (SLAC)

Session Classification: Session 12

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

Analysis of BaBar data for three meson tau decay modes using the Tauola generator

Thursday, 19 June 2014 11:10 (20 minutes)

Presenter: SHEKHOVTSOVA, Olga (IFJ PAN)

Session Classification: Session 12

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

Neutron electric dipole moment from colored scalars

Wednesday, 18 June 2014 16:50 (20 minutes)

Presenter: EEG, Jan (Dep. Phys. Oslo Univ.)

Session Classification: Session 10

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

Performance of the Heavy Flavor Tracker of STAR experiment at RHIC

Tuesday, 17 June 2014 15:00 (20 minutes)

Presenter: MARGETIS, Spyridon (Kent State University)

Session Classification: Session 6a

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

Decay constants of heavy mesons from QCD sum rules

Wednesday, 18 June 2014 15:00 (20 minutes)

Presenter: MELIKHOV, Dmitri (Moscow State University)

Session Classification: Session 9

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

B(s)->J/Psihh [on behalf of the LHCb Collaboration]

Wednesday, 18 June 2014 16:00 (20 minutes)

Presenter: ESEN, Sevda (Heidelberg University)

Session Classification: Session 9

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

On the ”DeltaA_CP” saga

Thursday, 19 June 2014 09:30 (20 minutes)

Presenter: SANTORELLI, Pietro (NA)

Session Classification: Session 11

Contribution ID: **92** Type: **not specified**

Rapidity resummation for B-meson wavefunctions

Wednesday, 18 June 2014 15:40 (20 minutes)

Presenter: WANG, Yu-Ming (TU Munich)

Session Classification: Session 9

Contribution ID: **93** Type: **not specified**

Recent QCD results from ATLAS

Tuesday, 17 June 2014 15:20 (20 minutes)

Presenter: TASSI, Enrico (Universita della Calabria and INFN Cosenza)

Session Classification: Session 6a

Contribution ID: **94** Type: **not specified**

Sum rules and spectral density flow in QCD and in superconformal theories

Wednesday, 18 June 2014 17:30 (20 minutes)

Presenter: DELLE ROSE, Luigi (INFN Lecce)

Session Classification: Session 10

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

String Theory of the Regge Intercept

Presenter: HELLERMAN, Simeon (Kavli IPMU, The University of Tokyo)

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

Quarkonium production in pp, p-Pb and Pb-Pb collisions with ALICE at LHC

Wednesday, 18 June 2014 10:30 (20 minutes)

Presenter: DAS, Indranil (Institut de Physique Nucleaire d'Orsay)

Session Classification: Session 7

Contribution ID: **99** Type: **not specified**

Coupling Constant Calculation of the D*_2(2460) -> D+ pi- Transition via QCD Sum Rules

Wednesday, 18 June 2014 15:20 (20 minutes)

Presenter: SARAC OYMAK, Yasemin (Atilim University)

Session Classification: Session 9

Contribution ID: **101** Type: **Poster**

Evidence for the Higgs boson in the tautau decay channel using the CMS detector

A search for the Standard Model Higgs boson decaying to tau pair has been performed in pp collision data recorded by CMS detector at LHC at centre-of-mass energy 8 TeV (7 TeV) corresponding to an integrated luminosity 20/fb (5/fb). The production modes considered are gluon-gluon fusion, VBF and associated production with a vector boson. The analysis strategy will be reported, focusing on the estimation of background process (QCD multijet, W+jets) by data-driven methods and the resulting evidence for the Higgs boson in tau pair channel.

Primary author: VENDITTI, ROSAMARIA (BA)

Presenter: VENDITTI, ROSAMARIA (BA)

Contribution ID: **102** Type: **Poster**

Measurement of azimuthal correlations between D mesons and charged hadrons with ALICE at the LHC

Heavy quarks (charm and beauty) are excellent probes to investigate the properties of the strongly interacting matter formed in heavy-ion collisions, where a Quark-Gluon Plasma (QGP) is produced. Due to their large mass, charm and beauty quarks are produced in hard partonic scattering processes in the initial stages of the collision, before the formation of the QGP. While traversing the medium they experience the full evolution of the QGP and interact with it.
ALICE measured a significant suppression of D-meson production in a wide momentum range in central Pb-Pb collisions with respect to the expectation based on the cross section measured in pp collisions, scaled by the number of binary collisions. This effect can be, at least partially, attributed to the energy loss of charm quarks while traversing the medium. The comparison of angular correlations between charmed mesons and charged hadrons produced in pp, p-Pb and Pb-Pb collisions can give insight into the mechanisms through which charm quarks lose energy and help to spot possible modifications of their hadronization induced by the presence of the medium. The analysis of pp and p-Pb data and the comparison with predictions from pQCD calculations, besides constituting the necessary baseline for the interpretation of Pb-Pb data, can provide relevant information on charm production and fragmentation processes. In addition, possible differences between the results from pp and p-Pb collisions can provide information on the presence of cold nuclear matter effects, affecting the charm production and hadronization in the latter collision system.
We will present a study of azimuthal correlations between D0, D+, and D*+ mesons and charged hadrons in pp collisions at $\sqrt{s}$ = 7 TeV and p-Pb collisions at $\sqrt{s_{NN}}$ = 5.02 TeV. D mesons were reconstructed from their hadronic decays at central rapidity in the transverse momentum range $3 \leq p_T \leq 16$ GeV/c and were correlated to charged particles reconstructed in the pseudorapidity range $|\eta|<0.8$. Perspectives for the measurement in Pb-Pb collisions at $\sqrt{s_{NN}}$ = 2.76 TeV will also be presented.

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Perspectives of heavy-flavour measurements in ALICE with the upgraded Inner Tracking System

The ALICE detector at the LHC is specifically designed to investigate the properties of the hot and dense medium, consisting of deconfined quarks and gluons (QGP), created in highenergy heavy-ion collisions. Heavy–flavour particles are very special probes to investigate the properties of such a medium, since they are mainly produced in the initial phase and could experience the full evolution of the collision. Thanks to the excellent performance of the ALICE detector, in particular of the Inner Tracking System (ITS) which play a crucial role for heavyflavour particle studies, interesting results have been obtained by analyzing pp, p–Pb and Pb–Pb data collected so far.

The upgrade of the inner tracker, which has been recently approved, combined with the upgrade of LHC luminosity in Pb–Pb collisions, will allow to improve significantly the current performances of heavy-flavour measurements, in particular in the low momentum region, and in some cases they will be available for the first time (e. g. Λ_{c} barion in Pb–Pb collisions).

The perspectives for heavy-flavour measurements expected after the second long shut-down (LS2) of LHC will be discussed.

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