

# 4th International Conference on New Frontiers in Physics ICNFP2015

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## Book of Abstracts



# Contents

Opening . . . . .	1
The Constituent-Quark Model - Nowadays . . . . .	1
Hamiltonian Approach to QCD in Coulomb gauge-from the vacuum to finite temperatures . . . . .	1
Charmonium production on nuclei: a story of surprises . . . . .	1
Soft physics of heavy ion collisions . . . . .	1
Recent Results from the Telescope Array Ultra High Energy Cosmic Ray Observatory . . . . .	2
Social Event . . . . .	2
Dinner and Social Event . . . . .	2
Welcome from Organizers . . . . .	2
Welcome from the director of OAC . . . . .	2
History of OAC . . . . .	2
Photons walking the line . . . . .	2
Hagedorn temperature and physics of black holes . . . . .	3
Scales hierarchies in particle physics and cosmology . . . . .	3
Supersymmetry, Cosmological Constant and Inflation . . . . .	3
Thermal Dileptons and the QCD Phase Transitions . . . . .	3
QGP formation in small systems? . . . . .	3
The Physics of FAIR . . . . .	3
Conciliating SUSY with the Z-peaked excess . . . . .	3
Large Scale Data Analysis and Computing; past and future . . . . .	4
Flavour Physics at LHCb . . . . .	4
Observation of pentaquark resonances in $\Lambda_{cb} \rightarrow J/\psi K p$ decays . . . . .	4
Higgs boson combined results . . . . .	4

Particle Physics Outreach in the LHC era: Higgs - what's next? . . . . .	4
Archimedes Force on Casimir Apparatus . . . . .	4
The restless gamma-ray sky and clues on new physics: seven years of discoveries with Fermi Large Area Telescope . . . . .	4
Progress report for the AEGIS antimatter gravity experiment . . . . .	5
Social event . . . . .	5
Space research and radiobiology at FAIR . . . . .	5
Experimental techniques and methods in hadron spectroscopy . . . . .	5
Proton structure and PDFs from HERA . . . . .	5
Central Exclusive production at hadron colliders . . . . .	5
Nucleon structure studies with the COMPASS experiment at CERN . . . . .	5
Hadron production at SIS energies - overview of SIS18 results and prospect for SIS100 .	6
Highlights from Belle . . . . .	6
Precision Measurement of the Proton and Helium Fluxin Primary Cosmic Rays with AMS- 02 . . . . .	6
Chaotic vortical flows and their manifestations . . . . .	6
Standard Model results with the CMS experiment . . . . .	6
Searching for the QCD critical point through power-law fluctuations of the proton density in A+A collisions at 158A GeV . . . . .	6
Measurements of the properties of the Higgs boson using the ATLAS Detector . . . . .	7
Perfect Abelian dominance of confinement in mesons and baryons in SU(3) lattice QCD .	7
Highlights from the COMPASS experiment at CERN - Hadron spectroscopy and excitations . . . . .	7
Search for Annual and Daily Variations of Nucleus Decay Parameters . . . . .	7
LHCf experiment: forward physics at LHC for cosmic rays study . . . . .	7
New tests of variability of the speed of light . . . . .	7
Spin Physics Results from PHENIX . . . . .	8
Recent results from NA61/SHINE . . . . .	8
Precision measurements of Standard Model parameters and Review of Drell-Yan and vector boson plus jets measurements with the ATLAS detector . . . . .	8
Combination of couplings of the Higgs boson by the ATLAS experiment with Run 1 data	8
Very-high energy astrophysical neutrinos with IceCube . . . . .	8

Turbulent advection of a passive vector field: Effects of the anisotropy and finite correlation time . . . . .	9
Proton spin in leading order of the covariant approach . . . . .	9
Correlations and fluctuations in p+p and Be+Be collisions at the SPS energies from NA61/SHINE . . . . .	9
Search for Higgs Bosons produced in association with top quarks with the ATLAS detector . . . . .	9
Forward and small-x QCD physics (CMS) . . . . .	9
Exotica in CMS . . . . .	9
Recent results on soft QCD topics, and jet and photon production from ATLAS . . . . .	9
Review of $\phi_3$ measurements at Belle . . . . .	10
Searches for new physics with top- and bottom-quark signatures using the ATLAS detector . . . . .	10
Measurements of Multi-boson production, Trilinear and Quartic Gauge Couplings with the ATLAS detector . . . . .	10
Recent $D^{**}$ and $D^{**}_s$ observations at Belle . . . . .	10
Magnetic monopole search with the MoEDAL trapping detector . . . . .	10
Searches for Exotic physics beyond the Standard Model with the ATLAS detector . . . . .	10
Recent results on B-Physics and Quarkonia with the ATLAS detector . . . . .	11
Searches for new phenomena in high-mass (non)resonant production with the ATLAS detector . . . . .	11
Social event . . . . .	11
Introduction . . . . .	11
Hagedorn's Limiting Temperature and the Onset of Deconfinement . . . . .	11
Event by Event Analysis in Relativistic Nucleus-Nucleus Collisions . . . . .	11
Hagedorn mass spectrum and QCD thermodynamics . . . . .	11
Appearance of Hagedorn limiting temperature in microscopic model calculations . . . . .	12
A possible evidence of observation of two mixed phases in nuclear collisions . . . . .	12
High temperature Bose-Einstein condensation . . . . .	12
Beyond the thermal model . . . . .	12
Colour Particle States Behaviour in the QCD Vacuum . . . . .	12
Hot Universe . . . . .	12

Recent progresses in heavy flavor physics in URHIC . . . . .	13
Hydro-inspired freeze-out model with jets for relativistic heavy Ion collisions (HYDJET++) . . . . .	13
Top quark pair production measurements using the ATLAS detector at the LHC . . . . .	13
Muon Reconstruction Performance in ATLAS at Run-II . . . . .	13
SHiP: a new multipurpose beam-dump experiment at the SPS . . . . .	13
Coherent energy loss and forward production of hadrons in proton-nucleus collisions . .	13
What could the LHC teach us on spacetime structure? . . . . .	14
ICARUS T600: physics results and future activities . . . . .	14
Identified charged hadron production in pp and Pb-Pb collisions with ALICE at the LHC	14
Beyond 2 Generations with CMS . . . . .	14
Reconstruction and identification of tau leptons in CMS . . . . .	14
Future physics potential of CMS . . . . .	14
Results from the Double Chooz experiment . . . . .	14
Search for the dark photon in $\pi^0$ decay . . . . .	15
Single Top quark production cross section and properties using the ATLAS detector at the LHC . . . . .	15
Identified hadron production and study of collective phenomena in p-Pb collisions at the LHC with ALICE . . . . .	15
Performance of the ATLAS track reconstruction . . . . .	15
PHENIX Future Plans and Prospects . . . . .	15
Search for sterile neutrino mixing in the $\nu_\mu \rightarrow \nu_\tau$ appearance channel with the OPERA detector . . . . .	15
Neutrinoless Double Beta Decay in GERDA . . . . .	15
Top quark pair properties using the ATLAS detector at the LHC . . . . .	16
The reconstruction of jets, missing ET and boosted heavy particles with ATLAS in Run II	16
The NA62 experiment at CERN . . . . .	16
Search for Charged Lepton Flavour Violation with the MEG and MEG II experiments . .	16
Performance of the photon reconstruction and identification in ATLAS . . . . .	16
Update on the Majorana Demonstrator . . . . .	16
CMS detector performance . . . . .	17

Schrödinger operator with delta'-interaction supported by non-closed curve . . . . .	17
Searches for direct pair production of third generation squarks with the ATLAS detector . . . . .	17
Open-charm production measurements with ALICE at the LHC . . . . .	17
Analytical Formulae linking Quark Confinement and Chiral Symmetry Breaking . . . . .	17
The Universal Wave Function Interpretation of String Theory . . . . .	18
Bose-Einstein correlations of charged and neutral kaons in p-p and Pb-Pb collisions with the ALICE experiment at the LHC . . . . .	18
Investigation of Particle Coherence in Pb+Pb Collisions at LHC . . . . .	18
Non-photonic electrons in central U+U collisions at STAR . . . . .	18
Leaky quantum wires. On relation between geometry and spectrum . . . . .	18
SUSY with the CMS experiment . . . . .	18
Chiral symmetry breaking of compactified (2+1)-dimensional Gross-Neveu model in presence of external magnetic field . . . . .	19
Duality of Psychological and Intrinsic Time in Artworks . . . . .	19
Interacting relativistic quantum dynamics for multi-time wave functions . . . . .	19
The magnetic polarizabilities and g-factor of the charged and neutral rho mesons in a strong magnetic field on the lattice . . . . .	19
Two-particle correlations using THERMINATOR model for BES program . . . . .	19
A New Approach to Analytic, Non-Perturbative Gauge-Invariant QCD Renormalization is described, with applications to high energy elastic p-p scattering . . . . .	19
Searches for electroweak production of supersymmetric gauginos and sleptons with the ATLAS detector . . . . .	20
Einstein's Credo and modern physics . . . . .	20
New Quantum Effect: Emission of Cosmic X- or -rays by Moving Unstable Particles at Late Times . . . . .	20
Polarizability of pseudoscalar mesons from the lattice calculations . . . . .	20
Absence of the Gribov ambiguity in a quadratic gauge . . . . .	20
Inclusive searches for squarks and gluinos with the ATLAS detector . . . . .	20
Opto-Box: Optical Modules and Mini-Crate for ATLAS Pixel and IBL Detectors . . . . .	21
Dual condensates at finite isospin chemical potential . . . . .	21
On Discrete (Digital) Physics: as a Perfect Deterministic Structure for Reality - And the Fundamental Field Equations of Physics . . . . .	21

Search for long-lived neutral particles decaying into lepton jets in 20.3 fb <sup>-1</sup> proton–proton collisions at $\sqrt{s} = 8$ TeV with the ATLAS detector . . . . .	21
Modelling of interaction of material plane with spinor field in the framework of the Symanzik approach . . . . .	21
Femtoscopy with unlike-sign kaons at STAR in 200GeV Au+Au collisions . . . . .	21
Commutative fuzzy geometry and Nonlinear Quantum Dynamics . . . . .	22
Long range force and Y-Bosonic strings in Baryons . . . . .	22
False vacuum as a quantum unstable state . . . . .	22
Performance Studies of Micromegas Chambers for the New Small Wheel Upgrade Project	22
Particles composition and interactions using the NUON Model . . . . .	22
On light dilaton extensions of the standard model . . . . .	22
Search for new particles in events with one lepton and missing transverse momentum in pp collisions at $\sqrt{s} = 8$ TeV . . . . .	23
Antihydrogen dynamics in the AEGIS experiment . . . . .	23
Search for space charge effects in the ICARUS T600 LAr-TPC . . . . .	23
If God Plays Dice, Must We do the Same? Quantum Entanglement as a Deterministic Phenomenon . . . . .	23
Muon reconstruction performance in ATLAS at Run-II . . . . .	23
Spinorial Regge Trajectories and Hagedorn-like temperatures . . . . .	23
Spinorial Space-Time and the origin of Quantum Mechanics . . . . .	23
Performance of the ALICE secondary vertex b-tagging algorithm . . . . .	24
Massive Gravi-Electromagnetism in Terms of Octons . . . . .	24
First evidence of LPM effect in LHCf, an LHC experiment . . . . .	24
Observation of resonant J/Psi_p states in Lambda_b decays . . . . .	24
Social event . . . . .	24
Thermalization in strongly coupled confining gauge theories . . . . .	24
ALICE overview . . . . .	25
Overview of recent ATLAS results . . . . .	25
CMS overview . . . . .	25
Overview of ATLAS Standard Model Measurements . . . . .	25
Higgs results from CMS . . . . .	25



Higgs results from ATLAS . . . . .	25
Supersymmetry searches in ATLAS . . . . .	26
Top quark physics from run 1 of the LHC . . . . .	26
Interaction of Relativistic Highly Charged Ions with crystals: from collisions towards high resolution spectroscopy . . . . .	26
The MoEDAL Experiment at the LHC - Exploring Beyond the Standard Model . . . . .	26
Results from the OPERA experiment at the CNGS beam . . . . .	26
Educational projects . . . . .	26
Anomalous transport in second order hydrodynamics . . . . .	26
Double unification of particles with fields and gravity with electricity under Aristotle's nonempty space can rid of Coulombs divergences and metric singularities . . . . .	27
Recent HERA results on hard QCD and heavy flavour production . . . . .	27
Aspects of meson condensation . . . . .	27
New Ferroelectric Transitions in Magnetic Hydroxyl Salts $\text{Co}_2(\text{OD})_3\text{Cl}$ and $\text{Co}_2(\text{OD})_3\text{Br}$ . . . . .	27
Beyond-the-Standard Model Higgs Physics using the ATLAS Experiment . . . . .	27
Oblique corrections in the Dine-Fischler-Srednicki axion model . . . . .	27
Anisotropic Flow Fluctuations in Pb+Pb collisions at LHC (HYDJET++ Model) . . . . .	27
On 3D minimal massive gravity . . . . .	28
Recent HERA results on diffraction and exclusive final states . . . . .	28
On the base quantities of oscimodes of valence $q'$ $q$ bar and $3q$ states . . . . .	28
New frontiers in photonic functions . . . . .	28
Searches for new physics with lepton flavors and multi-lepton final states with the ATLAS detector . . . . .	28
Advanced Virgo - Status & Perspective of the upgraded Gravitational Wave detector . . . . .	28
Phenomenology of charmed mesons in a chiral symmetric model . . . . .	29
Quarkonia with STAR at RHIC . . . . .	29
Precision X-ray spectroscopy of kaonic atoms as a probe of kaon-nucleon/nuclei interaction at low energy . . . . .	29
The Compact Linear Collider study . . . . .	29
Highlights from Super-Kamiokande . . . . .	29
Highlights from T2k . . . . .	29

Recent Results from the Daya Bay Reactor Neutrino Experiment . . . . .	30
Recent Borexino results and prospects for the near future . . . . .	30
An Experimental Programme at the DUNE Experiment . . . . .	30
Heavy flavors in nucleus-nucleus and proton-nucleus . . . . .	30
Heavy-flavour measurements at the LHC . . . . .	30
Open heavy flavor at RHIC . . . . .	30
Review of recent results on jet physics in Heavy Ion from LHC . . . . .	30
Transport phenomena in a plasma of confining gluons . . . . .	31
Heavy Ion Results Highlights (STAR) . . . . .	31
Recent highlights of PHENIX at RHIC . . . . .	31
Angular correlations in pp collisions - overview . . . . .	31
Highlights of DAMA/LIBRA . . . . .	31
AGN observations with a 100 GeV threshold using H.E.S.S.II . . . . .	31
Recent physics results from BaBar . . . . .	31
Physics and Philosophy: Tao Source Physics . . . . .	32
Discrete Symmetries CP, T, CPT . . . . .	32
Neutrino Oscillation and Resolving the Neutrino Mass Ordering . . . . .	32
Status of the NICA project at JINR . . . . .	32
Electromagnetic probes of QCD matter: an experimental overview . . . . .	32
Determination of $\alpha_s$ from the QCD static energy . . . . .	32
Exotics with Effective Field Theories . . . . .	32
New quantum reality as revealed by weak measurements . . . . .	33
Big Bang, inflation, standard Physics... and the potentialities of new Physics and alternative cosmologies . . . . .	33
Overview of the CLIC detector and its physics potential . . . . .	33
A search for very-high-energy emission by gamma ray bursts with HAWC . . . . .	33
Prospects of new physics searches short and long term future . . . . .	33
Future Accelerators at the High Energy Frontier . . . . .	33
Perspectives for New Physics at the LHC . . . . .	34
Quark Matter in Compact Stars and in Heavy-Ion Collisions . . . . .	34

Closing . . . . .	34
Social event . . . . .	34
Social event . . . . .	34
The effect of finite chemical potential in the production of electromagnetic radiation . . .	34
Two-particle angular correlations in small systems at the LHC in ALICE . . . . .	34
Multiplicity Distributions and fluctuations in Heavy-Ion Collisions . . . . .	35
Evolution of quark-gluon plasma and quark-hadron phase transition . . . . .	35
Transformations Between Accelerated Frames with the Equivalence Principle and Lie Group Technique . . . . .	35
Long range force in the baryon at finite T . . . . .	35
High multiplicity proton-proton events: a new horizon in multi-particle production . . .	35
Bose-Einstein effects in angular correlations and balance function in pp collisions using PYTHIA8 simulations . . . . .	35
Reception . . . . .	36
Universality of particle production and energy balance in hadronic and nuclear collisions	36
Inclusive photon production at forward rapidities in pp collisions at LHC energies . . . .	36
B physics results from CMS . . . . .	36
Heavy Quark dynamics in the Quark-Gluon Plasma and the puzzling relation between $R_{AA}$ and $v_2$ . . . . .	36
The q-statistics and QCD thermodynamics at LHC . . . . .	36
Event-by-event fluctuation and correlation measurements at the LHC energies in ALICE	36
Local Efficiency Corrections to Higher Order Cumulants . . . . .	37
BESIII Physics Highlights . . . . .	37
Recent results from NA61/SHINE . . . . .	37



**Lectures / 442**

## Opening

**Corresponding Author:** larissa.bravina@fys.uio.no**Lectures / 199**

## The Constituent-Quark Model - Nowadays

**Corresponding Author:** plessas@uni-graz.at**Summary:**

The notion of (constituent) quarks has been introduced more than fifty years ago. Quantum chromodynamics (QCD) was invented more than forty years ago, and it has not yet been amenable to a satisfactory solution up till now. The more there is the need for an effective description of hadrons at low and intermediate energies in view of the wealth of phenomenological data accumulated over the past decades. I discuss the present performance of a modern constituent-quark model as an effective tool for the description of baryons in the non-perturbative regime of QCD. In particular, I address a relativistic constituent-quark model capable of describing all known baryons with flavors u, d, s, c, and b universally in a single framework. Hereby baryons are considered as systems of three relativistic constituent quarks, whose flavor-dependent interactions are based on the exchange of Goldstone bosons within  $SU(5)_F$  and implemented into a Poincaré-invariant interacting mass operator. Predictions for the spectroscopy of baryons containing all flavors u, d, s, c, and b compare well with the existing phenomenology and with modern results available from lattice QCD. Similarly the structures of baryons as revealed under electromagnetic, weak, hadronic, and gravitational interactions are consistently described. Covariant results so far obtained for electromagnetic, axial, strong, and gravitational form factors of the nucleons, the deltas, and the hyperons turn out to be in good agreement with experimental data as well as insights obtained from lattice QCD. The presented relativistic constituent-quark model should provide a solid basis for introducing QCD effects consistently into a variety of processes involving hadrons, reaching from particle to nuclear physics.

**Lectures / 202**

## Hamiltonian Approach to QCD in Coulomb gauge-from the vacuum to finite temperatures

**Corresponding Author:** h.reinhardt@uni-tuebingen.de**Lectures / 201**

## Charmonium production on nuclei: a story of surprises

**Corresponding Author:** boris.kopeliovich@usm.cl**Lectures / 200**

## Soft physics of heavy ion collisions

**Corresponding Author:** csernai@fi.uib.no

Lectures / 203

## **Recent Results from the Telescope Array Ultra High Energy Cosmic Ray Observatory**

**Corresponding Author:** jnm@cosmic.utah.edu

0

## **Social Event**

1

## **Dinner and Social Event**

Plenaries: Session 1 / 444

## **Welcome from Organizers**

**Corresponding Author:** yiota.foka@cern.ch

Plenaries: Session 1 / 450

## **Welcome from the director of OAC**

Plenaries: Session 1 / 445

## **History of OAC**

Plenaries: Session 1 / 206

## **Photons walking the line**

**Corresponding Author:** igor.jex@cern.ch

**Plenaries: Session 1 / 205**

## **Hagedorn temperature and physics of black holes**

**Corresponding Author:** [vzakharov@itep.ru](mailto:vzakharov@itep.ru)

**Plenaries: Session 1 / 233**

## **Scales hierarchies in particle physics and cosmology**

**Corresponding Author:** [ignatios.antoniadis@cern.ch](mailto:ignatios.antoniadis@cern.ch)

**Plenaries: Session 1 / 207**

## **Supersymmetry, Cosmological Constant and Inflation**

**Corresponding Author:** [nikolaos.mavromatos@cern.ch](mailto:nikolaos.mavromatos@cern.ch)

**Plenaries: Session 2 / 208**

## **Thermal Dileptons and the QCD Phase Transitions**

**Corresponding Author:** [hans.specht@cern.ch](mailto:hans.specht@cern.ch)

**Plenaries: Session 2 / 209**

## **QGP formation in small systems?**

**Corresponding Author:** [itzhak.tserruya@cern.ch](mailto:itzhak.tserruya@cern.ch)

**Plenaries: Session 2 / 210**

## **The Physics of FAIR**

**Corresponding Author:** [j.stroth@gsi.de](mailto:j.stroth@gsi.de)

**Plenaries: Session 2 / 211**

## **Conciliating SUSY with the Z-peaked excess**

**Corresponding Author:** [vasiliki.mitsou@cern.ch](mailto:vasiliki.mitsou@cern.ch)

Plenaries: Session 2 / 212

## **Large Scale Data Analysis and Computing; past and future**

Corresponding Author: rene.brun@cern.ch

Plenaries: Session 3 / 213

## **Flavour Physics at LHCb**

Corresponding Author: bernardo.adeva@usc.es

Plenaries: Session 3 / 214

## **Observation of pentaquark resonances in $\Lambda_b \rightarrow J/\psi K p$ decays**

Corresponding Author: bernardo.adeva@usc.es

Plenaries: Session 3 / 215

## **Higgs boson combined results**

Corresponding Author: pvanlaer@ulb.ac.be

Plenaries: Session 3 / 216

## **Particle Physics Outreach in the LHC era: Higgs - what's next?**

Corresponding Author: hans.peter.beck@cern.ch

Plenaries: Session 4 / 274

## **Archimedes Force on Casimir Apparatus**

Corresponding Author: vladimir.shevchenko@cern.ch

Plenaries: Session 4 / 217

## **The restless gamma-ray sky and clues on new physics: seven years of discoveries with Fermi Large Area Telescope**



**Corresponding Author:** sara.cutini@asdc.asi.it

**Plenaries: Session 4 / 218**

## **Progress report for the AEGIS antimatter gravity experiment**

**Corresponding Author:** alban.kellerbauer@cern.ch

2

## **Social event**

**Plenaries: Session 1 / 219**

## **Space research and radiobiology at FAIR**

**Corresponding Author:** r.pleskac@gsi.de

**Plenaries: Session 1 / 220**

## **Experimental techniques and methods in hadron spectroscopy**

**Corresponding Author:** frank.nerling@cern.ch

**Plenaries: Session 1 / 221**

## **Proton structure and PDFs from HERA**

**Corresponding Author:** shekeln@mail.desy.de

**Plenaries: Session 1 / 222**

## **Central Exclusive production at hadron colliders**

**Corresponding Author:** v.a.khoze@durham.ac.uk

**Plenaries: Session 2 / 223**

## **Nucleon structure studies with the COMPASS experiment at CERN**

**Corresponding Author:** stephane.platchkov@cern.ch

**Plenaries: Session 2 / 224**

## **Hadron production at SIS energies - overview of SIS18 results and prospect for SIS100**

**Corresponding Author:** kugler@ujf.cas.cz

**Plenaries: Session 2 / 225**

## **Highlights from Belle**

**Corresponding Author:** yjkwon63@yonsei.ac.kr

**Plenaries: Session 2 / 267**

## **Precision Measurement of the Proton and Helium Fluxin Primary Cosmic Rays with AMS-02**

**Corresponding Author:** melanie.heil@cern.ch

**Plenaries: Session 2 / 227**

## **Chaotic vortical flows and their manifestations**

**Corresponding Author:** alexander.sorin@cern.ch

**Parallel 6 / 285**

## **Standard Model results with the CMS experiment**

**Corresponding Author:** ludivine.ceard@cern.ch

**Parallel 3 / 367**

## **Searching for the QCD critical point through power-law fluctuations of the proton density in A+A collisions at 158A GeV**

**Corresponding Author:** nikolaos.davis@cern.ch

Parallel 2 / 388

### **Measurements of the properties of the Higgs boson using the ATLAS Detector**

**Corresponding Author:** michaela.queitsch-maitland@cern.ch

Parallel 4 / 391

### **Perfect Abelian dominance of confinement in mesons and baryons in SU(3) lattice QCD**

**Corresponding Author:** sakumichi@gmail.com

Parallel 1 / 397

### **Highlights from the COMPASS experiment at CERN - Hadron spectroscopy and excitations**

**Corresponding Author:** frank.nerling@cern.ch

Parallel 5 / 396

### **Search for Annual and Daily Variations of Nucleus Decay Parameters**

**Corresponding Author:** mayburov@mail.ru

Parallel 5 / 300

### **LHCf experiment: forward physics at LHC for cosmic rays study**

**Corresponding Author:** marina.del.prete@cern.ch

Parallel 4 / 294

### **New tests of variability of the speed of light**

**Corresponding Author:** mpdabfz@onet.eu

Parallel 1 / 398

## **Spin Physics Results from PHENIX**

**Corresponding Author:** ralf.seidl@gmail.com

Parallel 3 / 368

## **Recent results from NA61/SHINE**

**Corresponding Author:** evgeny.andronov@cern.ch

### **Summary:**

The NA61/SHINE experiment aims to discover the critical point of strongly interacting matter and study the properties of the onset of deconfinement. For this goal the scan through two dimensional phase diagram ( $T-\mu_B$ ) is being performed at the SPS by measurements of hadron production in proton-proton, proton-nucleus and nucleus-nucleus interactions as a function of collision energy and system size.

In this contribution intriguing results on the energy dependence of hadron spectra and yields in inelastic p+p and centrality selected Be+Be collisions will be presented. In particular, the energy dependence of the signals of deconfinement, the “horn”, “step” and “kink”, in p+p interactions will be presented and compared with the corresponding results from central Pb+Pb collisions from NA49.

Parallel 6 / 384

## **Precision measurements of Standard Model parameters and Review of Drell-Yan and vector boson plus jets measurements with the ATLAS detector**

**Corresponding Author:** noemi.calace@cern.ch

Parallel 2 / 390

## **Combination of couplings of the Higgs boson by the ATLAS experiment with Run 1 data**

**Author:** Nan Lu<sup>1</sup>

<sup>1</sup> *University of Michigan (US)*

**Corresponding Author:** nan.lu@cern.ch

Parallel 5 / 381

## **Very-high energy astrophysical neutrinos with IceCube**

**Corresponding Author:** itaboada@gatech.edu

Parallel 4 / 296

## **Turbulent advection of a passive vector field: Effects of the anisotropy and finite correlation time**

Corresponding Author: kollya12@mail.ru

Parallel 1 / 399

## **Proton spin in leading order of the covariant approach**

Corresponding Author: zavada@fzu.cz

Parallel 3 / 369

## **Correlations and fluctuations in p+p and Be+Be collisions at the SPS energies from NA61/SHINE**

Corresponding Author: andrey.seryakov@cern.ch

Parallel 2 / 389

## **Search for Higgs Bosons produced in association with top quarks with the ATLAS detector**

Corresponding Author: yang.qin@cern.ch

Parallel 6 / 385

## **Forward and small-x QCD physics (CMS)**

Corresponding Author: paolo.gunnellini@cern.ch

Parallel 1 / 289

## **Exotica in CMS**

Corresponding Author: claudia.wulz@cern.ch

Parallel 6 / 288

## **Recent results on soft QCD topics, and jet and photon production from ATLAS**

Corresponding Author: roger.jones@cern.ch

Parallel 5 / 298

## **Review of $\varphi_3$ measurements at Belle**

Corresponding Author: cervenkov@ipnp.mff.cuni.cz

Parallel 2 / 291

## **Searches for new physics with top- and bottom-quark signatures using the ATLAS detector**

Corresponding Author: farida.fassi@cern.ch

Parallel 6 / 286

## **Measurements of Multi-boson production, Trilinear and Quartic Gauge Couplings with the ATLAS detector**

Corresponding Author: maurice.becker@cern.ch

Parallel 5 / 299

## **Recent $D^{**}$ and $D^{**}_s$ observations at Belle**

Corresponding Author: d.v.matvienko@inp.nsk.su

Parallel 2 / 292

## **Magnetic monopole search with the MoEDAL trapping detector**

Corresponding Author: akshay.k@cern.ch

Parallel 1 / 290

## **Searches for Exotic physics beyond the Standard Model with the ATLAS detector**

**Corresponding Author:** joseph.haley@cern.ch

Parallel 5 / 297

## **Recent results on B-Physics and Quarkonia with the ATLAS detector**

**Corresponding Author:** roger.jones@cern.ch

Parallel 2 / 293

## **Searches for new phenomena in high-mass (non)resonant production with the ATLAS detector**

**Corresponding Author:** cora.fischer@cern.ch

4

## **Social event**

Plenaries: Session 1 / 440

## **Introduction**

**Corresponding Author:** johann.rafelski@cern.ch

Plenaries: Session 1 / 229

## **Hagedorn's Limiting Temperature and the Onset of Deconfinement**

**Corresponding Author:** goren@bitp.kiev.ua

Plenaries: Session 1 / 230

## **Event by Event Analysis in Relativistic Nucleus-Nucleus Collisions**

**Corresponding Author:** stock@ikf.uni-frankfurt.de

Plenaries: Session 1 / 231

## **Hagedorn mass spectrum and QCD thermodynamics**

Corresponding Author: k.redlich@gsi.de

Plenaries: Session 1 / 232

## **Appearance of Hagedorn limiting temperature in microscopic model calculations**

Corresponding Author: eugen.zabrodin@fys.uio.no

Plenaries: Session 2 / 234

## **A possible evidence of observation of two mixed phases in nuclear collisions**

Corresponding Author: kyrylo.bugaiev@cern.ch

Plenaries: Session 2 / 235

## **High temperature Bose-Einstein condensation**

Corresponding Author: begun@fias.uni-frankfurt.de

Plenaries: Session 2 / 236

## **Beyond the thermal model**

Corresponding Author: wolschin@uni-hd.de

Plenaries: Session 2 / 237

## **Colour Particle States Behaviour in the QCD Vacuum**

Corresponding Author: kuvshinov2003@tut.by

Plenaries: Session 2 / 238

## **Hot Universe**



**Corresponding Author:** johann.rafelski@cern.ch

Plenaries: Session 3 / 282

## **Recent progresses in heavy flavor physics in URHIC**

**Corresponding Author:** gossiaux@subatech.in2p3.fr

Plenaries: Session 3 / 437

## **Hydro-inspired freeze-out model with jets for relativistic heavy Ion collisions (HYDJET++)**

**Corresponding Author:** gyulnara.eyyubova@cern.ch

Parallel 2 / 308

## **Top quark pair production measurements using the ATLAS detector at the LHC**

**Corresponding Author:** c.bertsche@cern.ch

Parallel 6 / 303

## **Muon Reconstruction Performance in ATLAS at Run-II**

**Corresponding Author:** nathan.rogers.bernard@cern.ch

Parallel 1 / 332

## **SHiP: a new multipurpose beam-dump experiment at the SPS**

**Corresponding Author:** hans.dijkstra@cern.ch

Parallel 3 / 344

## **Coherent energy loss and forward production of hadrons in proton-nucleus collisions**

**Corresponding Author:** rodion.kolevatov@cern.ch

**Parallel 4 / 324**

## **What could the LHC teach us on spacetime structure?**

**Corresponding Author:** gtriantaphyllou@aya.yale.edu

**Parallel 5 / 325**

## **ICARUS T600: physics results and future activities**

**Corresponding Author:** andrea.zani@cern.ch

**Parallel 3 / 313**

## **Identified charged hadron production in pp and Pb-Pb collisions with ALICE at the LHC**

**Corresponding Author:** maria.vasileiou@cern.ch

**Parallel 2 / 309**

## **Beyond 2 Generations with CMS**

**Corresponding Author:** georgios.anagnostou@cern.ch

**Parallel 6 / 304**

## **Reconstruction and identification of tau leptons in CMS**

**Corresponding Author:** francesco.romeo@cern.ch

**Parallel 1 / 333**

## **Future physics potential of CMS**

**Corresponding Author:** kerstin.hoepfner@cern.ch

**Parallel 5 / 326**

## **Results from the Double Chooz experiment**

**Corresponding Author:** kaneda@hep.phys.titech.ac.jp

Parallel 4 / 373

## **Search for the dark photon in $\pi^0$ decay**

Corresponding Author: roberto.piandani@cern.ch

Parallel 2 / 310

## **Single Top quark production cross section and properties using the ATLAS detector at the LHC**

Corresponding Author: andrew.chegwidden@cern.ch

Parallel 3 / 315

## **Identified hadron production and study of collective phenomena in p-Pb collisions at the LHC with ALICE**

Corresponding Author: yasser.corrales.morales@cern.ch

Parallel 6 / 305

## **Performance of the ATLAS track reconstruction**

Corresponding Author: silviami@cern.ch

Parallel 1 / 334

## **PHENIX Future Plans and Prospects**

Corresponding Author: mccumber@bnl.gov

Parallel 5 / 327

## **Search for sterile neutrino mixing in the $\nu_\mu \rightarrow \nu_\tau$ appearance channel with the OPERA detector**

Corresponding Author: nicoletta.mauri@cern.ch

Parallel 4 / 395

## **Neutrinoless Double Beta Decay in GERDA**

**Corresponding Author:** mark.heisel@mpi-hd.mpg.de

**Parallel 2 / 312**

## **Top quark pair properties using the ATLAS detector at the LHC**

**Corresponding Author:** gaetano.barone@cern.ch

**Parallel 6 / 306**

## **The reconstruction of jets, missing ET and boosted heavy particles with ATLAS in Run II**

**Corresponding Author:** claudio.santoni@cern.ch

**Parallel 1 / 336**

## **The NA62 experiment at CERN**

**Corresponding Author:** mauro.piccini@cern.ch

**Parallel 5 / 329**

## **Search for Charged Lepton Flavour Violation with the MEG and MEG II experiments**

**Corresponding Author:** marco.venturini@pi.infn.it

**Parallel 6 / 428**

## **Performance of the photon reconstruction and identification in ATLAS**

**Corresponding Author:** phillip.george.hamnett@cern.ch

**Parallel 5 / 441**

## **Update on the Majorana Demonstrator**

**Corresponding Author:** awbradley@lbl.gov

Parallel 6 / 307

## **CMS detector performance**

**Author:** Shervin Nourbakhsh<sup>1</sup>

<sup>1</sup> *University of Minnesota (US)*

**Corresponding Author:** shervin.nourbakhsh@cern.ch

Parallel 5 / 377

## **Schrödinger operator with delta'-interaction supported by non-closed curve**

**Corresponding Author:** michal.j@centrum.cz

Parallel 6 / 337

## **Searches for direct pair production of third generation squarks with the ATLAS detector**

**Corresponding Author:** john.kenneth.anders@cern.ch

Parallel 2 / 341

## **Open-charm production measurements with ALICE at the LHC**

**Corresponding Author:** paola.pagano@cern.ch

Parallel 4 / 349

## **Analytical Formulae linking Quark Confinement and Chiral Symmetry Breaking**

**Corresponding Author:** doi@ruby.scphys.kyoto-u.ac.jp

### **Summary:**

Quark confinement and chiral symmetry breaking are two outstanding nonperturbative properties of QCD, and their relation has been one of the important issues in particle and nuclear physics. For the Polyakov and Wilson loops, we derive analytical formulae between quark confinement and Dirac eigenvalues in the lattice QCD formalism. For the temporal lattice with an odd-number, we find that the Polyakov loop is simply expressed with the Dirac eigenvalues [1]. Also, we obtain a similar relation between the Wilson loop and the Dirac eigenvalues. From these formulae, we find that the contribution from the low-lying Dirac eigenvalues is found to be negligibly small for quark confinement, while the

low-lying Dirac modes are essential for chiral symmetry breaking, as was numerically shown in lattice QCD simulations [2]. We also our present recent study on Polyakov-loop fluctuations in the Dirac eigenmode expansion [3] in the context of deconfinement transition in thermal QCD [4].

[1] T.M. Doi, H. Suganuma and T. Iritani, Phys. Rev. D90 (2014) 094505.

[2] T. Iritani and H. Suganuma, Prog. Theor. Exp. Phys. 2014 (2014) 033B03.

[3] T. M. Doi, K. Redlich, C. Sasaki and H. Suganuma, arXiv:1505.05752 [hep-lat].

[4] P.M. Lo, B. Friman, O. Kaczmarek, K. Redlich and C. Sasaki, Phys. Rev. D88, 074502 (2013).

**Parallel 1 / 356**

## **The Universal Wave Function Interpretation of String Theory**

**Corresponding Author:** rulinxiu@gmail.com

**Parallel 3 / 345**

## **Bose–Einstein correlations of charged and neutral kaons in p-p and Pb-Pb collisions with the ALICE experiment at the LHC**

**Corresponding Author:** elena.rogochaya@cern.ch

**Parallel 3 / 346**

## **Investigation of Particle Coherence in Pb+Pb Collisions at LHC**

**Corresponding Author:** bhjohan@uio.no

**Parallel 2 / 343**

## **Non-photonic electrons in central U+U collisions at STAR**

**Corresponding Author:** katka.gajdosova19@gmail.com

**Parallel 5 / 378**

## **Leaky quantum wires. On relation between geometry and spectrum**

**Corresponding Author:** s.kondej@if.uz.zgora.pl

Parallel 6 / 338

## **SUSY with the CMS experiment**

Corresponding Author: mario.maschiovecchio@cern.ch

Parallel 4 / 350

## **Chiral symmetry breaking of compactified (2+1)-dimensional Gross-Neveu model in presence of external magnetic field**

Corresponding Author: rzn95@mail.ru

Parallel 1 / 357

## **Duality of Psychological and Intrinsic Time in Artworks**

Corresponding Author: milosxm@gmail.com

Parallel 5 / 379

## **Interacting relativistic quantum dynamics for multi-time wave functions**

Corresponding Author: lienert@math.lmu.de

Parallel 2 / 392

## **The magnetic polarizabilities and g-factor of the charged and neutral rho mesons in a strong magnetic field on the lattice**

Corresponding Author: cooper\_ts@mail.ru

Parallel 3 / 348

## **Two-particle correlations using THERMINATOR model for BES program**

Corresponding Author: hanna.zbroszczyk@cern.ch

Parallel 4 / 351

**A New Approach to Analytic, Non-Perturbative Gauge-Invariant QCD Renormalization is described, with applications to high energy elastic p-p scattering**

Corresponding Author: higgsboson@gmail.com

Parallel 6 / 339

**Searches for electroweak production of supersymmetric gauginos and sleptons with the ATLAS detector**

Corresponding Author: huan.ren@cern.ch

Parallel 1 / 358

**Einstein's Credo and modern physics**

Corresponding Author: thomas.naumann@desy.de

Parallel 5 / 380

**New Quantum Effect: Emission of Cosmic X- or  $\gamma$ -rays by Moving Unstable Particles at Late Times**

Corresponding Author: k.urbanowski@if.uz.zgora.pl

Parallel 2 / 393

**Polarizability of pseudoscalar mesons from the lattice calculations**

Parallel 4 / 323

**Absence of the Gribov ambiguity in a quadratic gauge**

Corresponding Author: haresh.ein@gmail.com

Parallel 6 / 340

**Inclusive searches for squarks and gluinos with the ATLAS detector**



**Corresponding Author:** ingrid.deigaard@cern.ch

Poster session - Board: 14 / 401

### **Opto-Box: Optical Modules and Mini-Crate for ATLAS Pixel and IBL Detectors**

**Corresponding Author:** david.bertsche@cern.ch

Poster session - Board: 3 / 423

### **Dual condensates at finite isospin chemical potential**

**Corresponding Author:** zhaozhang@pku.org.cn

Poster session - Board: 12 / 422

### **On Discrete (Digital) Physics: as a Perfect Deterministic Structure for Reality - And the Fundamental Field Equations of Physics**

**Corresponding Author:** zahedi@let.hokudai.ac.jp

Poster session - Board: 19 / 416

### **Search for long-lived neutral particles decaying into lepton jets in 20.3 fb<sup>-1</sup> proton-proton collisions at $\sqrt{s} = 8$ TeV with the ATLAS detector**

**Corresponding Author:** marco.schioppa@cern.ch

Poster session - Board: 10 / 417

### **Modelling of interaction of material plane with spinor field in the framework of the Symanzik approach**

**Corresponding Author:** dashap2@gmail.com

Poster session - Board: 5 / 410

### **Femtoscopy with unlike-sign kaons at STAR in 200GeV Au+Au collisions**

**Corresponding Author:** lidryjin@fjfi.cvut.cz

**Poster session** - Board: 2 / 411

## **Commutative fuzzy geometry and Nonlinear Quantum Dynamics**

**Corresponding Author:** mayburov@mail.ru

**Poster session** - Board: 30 / 447

## **Long range force and Y-Bosonic strings in Baryons**

**Author:** Ahmed Bakry<sup>1</sup>

<sup>1</sup> *Institute of Modern Physics*

**Corresponding Author:** abakry@impcas.ac.cn

**Poster session** - Board: 4 / 421

## **False vacuum as a quantum unstable state**

**Corresponding Author:** k.urbanowski@if.uz.zgora.pl

**Poster session** - Board: 16 / 424

## **Performance Studies of Micromegas Chambers for the New Small Wheel Upgrade Project**

**Corresponding Authors:** stefanos.leontsinis@cern.ch, konstantinos.ntekas@cern.ch

**Poster session** - Board: 15 / 427

## **Particles composition and interactions using the NUON Model**

**Corresponding Author:** rene.brun@cern.ch

**Poster session** - Board: 13 / 412

## **On light dilaton extensions of the standard model**

**Corresponding Author:** emegias@ifae.es

**Poster session** - Board: 1 / 420

### **Search for new particles in events with one lepton and missing transverse momentum in pp collisions at $\sqrt{s} = 8$ TeV**

**Corresponding Author:** nikolaos.tsirintanis@cern.ch

**Poster session** - Board: 23 / 418

### **Antihydrogen dynamics in the AEGIS experiment**

**Corresponding Author:** izabela.strojek@cern.ch

**Poster session** - Board: 20 / 419

### **Search for space charge effects in the ICARUS T600 LAr-TPC**

**Corresponding Author:** marta.torti@cern.ch

**Poster session** - Board: 25 / 438

### **If God Plays Dice, Must We do the Same? Quantum Entanglement as a Deterministic Phenomenon**

**Corresponding Author:** suleiman@psy.haifa.ac.il

**Poster session** - Board: 11 / 434

### **Muon reconstruction performance in ATLAS at Run-II**

**Corresponding Author:** gaetano.barone@cern.ch

**Poster session** - Board: 21 / 406

### **Spinorial Regge Trajectories and Hagedorn-like temperatures**

**Corresponding Author:** lgm\_sci@yahoo.fr

**Poster session** - Board: 22 / 405

## **Spinorial Space-Time and the origin of Quantum Mechanics**

**Corresponding Author:** lgm\_sci@yahoo.fr

**Poster session** - Board: 18 / 404

## **Performance of the ALICE secondary vertex b-tagging algorithm**

**Corresponding Authors:** gyulnara.eyyubova@cern.ch, lukas.kramarik@cern.ch

**Poster session** - Board: 8 / 403

## **Massive Gravi-Electromagnetism in Terms of Octons**

**Corresponding Author:** sudemir@anadolu.edu.tr

**Poster session** - Board: 6 / 402

## **First evidence of LPM effect in LHCf, an LHC experiment**

**Corresponding Author:** marina.del.prete@cern.ch

**Poster session** - Board: 29 / 446

## **Observation of resonant J/Psi\_p states in Lambda\_b decays**

**Author:** Bernardo Adeva<sup>1</sup>

<sup>1</sup> *Universidad de Santiago de Compostela (ES)*

**Corresponding Author:** bernardo.adeva@usc.es

5

## **Social event**

**Plenaries: Session 1 / 239**

## **Thermalization in strongly coupled confining gauge theories**

**Corresponding Author:** kiritsis@apc.univ-paris7.fr

**Plenaries: Session 1 / 240**

## **ALICE overview**

**Corresponding Author:** sami.s.rasanen@jyu.fi

**Plenaries: Session 1 / 241**

## **Overview of recent ATLAS results**

**Corresponding Authors:** fares.djama@cern.ch, djama@cppm.in2p3.fr

**Plenaries: Session 1 / 242**

## **CMS overview**

**Corresponding Author:** tommaso.dorigo@cern.ch

**Plenaries: Session 2 / 244**

## **Overview of ATLAS Standard Model Measurements**

**Corresponding Author:** will@cern.ch

**Plenaries: Session 2 / 245**

## **Higgs results from CMS**

**Corresponding Author:** rainer.mankel@cern.ch

**Plenaries: Session 2 / 429**

## **Higgs results from ATLAS**

**Author:** Xin Chen<sup>1</sup>

<sup>1</sup> *Tsinghua University (CN)*

**Corresponding Author:** xin.chen@cern.ch

**Plenaries: Session 2 / 247**

## **Supersymmetry searches in ATLAS**

**Corresponding Author:** emma.sian.kuwertz@cern.ch

**Plenaries: Session 2 / 243**

## **Top quark physics from run 1 of the LHC**

**Corresponding Author:** antonio.onofre@cern.ch

**Plenaries: Session 3 / 249**

## **Interaction of Relativistic Highly Charged Ions with crystals: from collisions towards high resolution spectroscopy**

**Plenaries: Session 3 / 280**

## **The MoEDAL Experiment at the LHC - Exploring Beyond the Standard Model**

**Corresponding Author:** james.pinfold@cern.ch

**Plenaries: Session 3 / 328**

## **Results from the OPERA experiment at the CNGS beam**

**Corresponding Author:** nicoletta.mauri@cern.ch

**Plenaries: Session 3 / 251**

## **Educational projects**

**Corresponding Author:** christine.kourkoumelis@cern.ch

**Parallel 3 / 364**

## **Anomalous transport in second order hydrodynamics**

**Corresponding Author:** emegias@ifae.es

Parallel 1 / 383

### **Double unification of particles with fields and gravity with electricity under Aristotle's nonempty space can rid of Coulombs divergences and metric singularities**

Corresponding Author: [bulyzhenkov.ie@mipt.ru](mailto:bulyzhenkov.ie@mipt.ru)

Parallel 2 / 386

### **Recent HERA results on hard QCD and heavy flavour production**

Corresponding Author: [pawel.sopicki@cern.ch](mailto:pawel.sopicki@cern.ch)

Parallel 4 / 321

### **Aspects of meson condensation**

Corresponding Author: [andrea.mammarella@lngs.infn.it](mailto:andrea.mammarella@lngs.infn.it)

Parallel 5 / 353

### **New Ferroelectric Transitions in Magnetic Hydroxyl Salts $\text{Co}_2(\text{OD})_3\text{Cl}$ and $\text{Co}_2(\text{OD})_3\text{Br}$**

Corresponding Author: [zheng@cc.saga-u.ac.jp](mailto:zheng@cc.saga-u.ac.jp)

Parallel 6 / 359

### **Beyond-the-Standard Model Higgs Physics using the ATLAS Experiment**

Corresponding Author: [loan.truong@cern.ch](mailto:loan.truong@cern.ch)

Parallel 6 / 360

### **Oblique corrections in the Dine-Fischler-Srednicki axion model**

Corresponding Author: [alice.katanaeva@gmail.com](mailto:alice.katanaeva@gmail.com)

Parallel 3 / 365

### **Anisotropic Flow Fluctuations in Pb+Pb collisions at LHC (HYD-JET++ Model)**

Corresponding Author: larissa.bravina@fys.uio.no

Parallel 1 / 382

### **On 3D minimal massive gravity**

Corresponding Author: m.qaemmaqami@ipm.ir

Parallel 2 / 387

### **Recent HERA results on diffraction and exclusive final states**

Corresponding Author: ada.solano@cern.ch

Parallel 4 / 320

### **On the base quantities of oscimodes of valence $q$ , $q$ bar and $3q$ states**

Corresponding Author: peter.minkowski@cern.ch

Parallel 5 / 354

### **New frontiers in photonic functions**

Corresponding Author: cn-xu@aist.go.jp

Parallel 6 / 361

### **Searches for new physics with lepton flavors and multi-lepton final states with the ATLAS detector**

Corresponding Author: romain.madar@cern.ch

Parallel 1 / 376



## **Advanced Virgo - Status & Perspective of the upgraded Gravitational Wave detector**

Corresponding Author: niels.van.bakel@cern.ch

Parallel 4 / 322

## **Phenomenology of charmed mesons in a chiral symmetric model**

Corresponding Author: weshraim@th.physik.uni-frankfurt.de

Parallel 3 / 318

## **Quarkonia with STAR at RHIC**

Corresponding Author: sonja.kabana@cern.ch

Parallel 5 / 355

## **Precision X-ray spectroscopy of kaonic atoms as a probe of kaon-nucleon/nuclei interaction at low energy**

Corresponding Author: hexi.shi@lnf.infn.it

Parallel 6 / 331

## **The Compact Linear Collider study**

Corresponding Author: nuria.catalan.lasheras@cern.ch

Plenaries: Session 1 / 252

## **Highlights from Super-Kamiokande**

Corresponding Author: hamuhiro@gmail.com

Plenaries: Session 1 / 253

## **Highlights from T2k**

Corresponding Author: anna.dabrowska@ifj.edu.pl

**Plenaries: Session 1 / 254**

## **Recent Results from the Daya Bay Reactor Neutrino Experiment**

**Corresponding Author:** ming.chung.chu@cern.ch

**Plenaries: Session 1 / 255**

## **Recent Borexino results and prospects for the near future**

**Corresponding Author:** davide.dangelo@mi.infn.it

**Plenaries: Session 1 / 256**

## **An Experimental Programme at the DUNE Experiment**

**Corresponding Author:** j.nowak@lancaster.ac.uk

**Plenaries: Session 2 / 260**

## **Heavy flavors in nucleus-nucleus and proton-nucleus**

**Corresponding Author:** marziacc.nardi@gmail.com

**Plenaries: Session 2 / 262**

## **Heavy-flavour measurements at the LHC**

**Corresponding Author:** min.jung.kweon@cern.ch

**Plenaries: Session 2 / 261**

## **Open heavy flavor at RHIC**

**Corresponding Author:** jaroslav.bielcik@fffi.cvut.cz

**Plenaries: Session 2 / 258**

## **Review of recent results on jet physics in Heavy Ion from LHC**

**Corresponding Author:** alexandre.shabetai@cern.ch

**Plenaries: Session 2 / 259**

## **Transport phenomena in a plasma of confining gluons**

**Corresponding Author:** radoslaw.ryblewski@ifj.edu.pl

**Plenaries: Session 3 / 263**

## **Heavy Ion Results Highlights (STAR)**

**Plenaries: Session 3 / 264**

## **Recent highlights of PHENIX at RHIC**

**Corresponding Author:** norbert.novitzky@cern.ch

**Plenaries: Session 3 / 265**

## **Angular correlations in pp collisions - overview**

**Corresponding Author:** malgorzata.anna.janik@cern.ch

**Plenaries: Session 4 / 250**

## **Highlights of DAMA/LIBRA**

**Corresponding Author:** antonella.incicchitti@roma1.infn.it

**Plenaries: Session 4 / 268**

## **AGN observations with a 100 GeV threshold using H.E.S.S.II**

**Corresponding Author:** taylora@cp.dias.ie

**Plenaries: Session 4 / 269**

## **Recent physics results from BaBar**

**Corresponding Author:** fnc@slac.stanford.edu

**Plenaries: Session 4 / 448**

## **Physics and Philosophy: Tao Source Physics**

**Corresponding Author:** rulinxiu@gmail.com

**Plenaries: Session 1 / 270**

## **Discrete Symmetries CP, T, CPT**

**Corresponding Author:** jose.bernabeu.alberola@cern.ch

**Plenaries: Session 1 / 271**

## **Neutrino Oscillation and Resolving the Neutrino Mass Ordering**

**Corresponding Author:** koskinen@nbi.ku.dk

**Plenaries: Session 1 / 272**

## **Status of the NICA project at JINR**

**Corresponding Author:** vladimir.kekelidze@cern.ch

**Plenaries: Session 1 / 273**

## **Electromagnetic probes of QCD matter: an experimental overview**

**Corresponding Author:** t.galatyuk@gsi.de

**Plenaries: Session 2 / 275**

## **Determination of $\alpha_s$ from the QCD static energy**

**Corresponding Author:** antonio.vairo@ph.tum.de

**Plenaries: Session 2 / 276**

## **Exotics with Effective Field Theories**

**Corresponding Author:** nora.brambilla@cern.ch

**Plenaries: Session 2 / 204**

## **New quantum reality as revealed by weak measurements**

**Corresponding Author:** aharonov@chapman.edu

**Plenaries: Session 2 / 277**

## **Big Bang, inflation, standard Physics... and the potentialities of new Physics and alternative cosmologies**

**Corresponding Author:** lgm\_sci@yahoo.fr

**Plenaries: Session 3 / 279**

## **Overview of the CLIC detector and its physics potential**

**Corresponding Author:** marko.petric@cern.ch

**Plenaries: Session 3 / 375**

## **A search for very-high-energy emission by gamma ray bursts with HAWC**

**Corresponding Author:** itaboada@gatech.edu

**Plenaries: Session 3 / 281**

## **Prospects of new physics searches short and long term future**

**Corresponding Author:** jessica.metcalfe@gmail.com

**Plenaries: Session 4 / 283**

## **Future Accelerators at the High Energy Frontier**

**Corresponding Author:** emmanuel.tesmelis@cern.ch

**Plenaries: Session 4 / 278**

## **Perspectives for New Physics at the LHC**

**Corresponding Author:** abdelhak.djouadi@cern.ch

**Plenaries: Session 4 / 284**

## **Quark Matter in Compact Stars and in Heavy-Ion Collisions**

**Corresponding Author:** david.blaschke@gmail.com

**Closing session / 449**

## **Closing**

**Corresponding Author:** sonja.kabana@cern.ch

**6**

## **Social event**

**29**

## **Social event**

**Board: 24 / 407**

## **The effect of finite chemical potential in the production of electromagnetic radiation**

**Corresponding Author:** poonam.jn1@gmail.com

**Board: 27 / 347**

## **Two-particle angular correlations in small systems at the LHC in ALICE**

**Corresponding Author:** subikash.choudhury@cern.ch

Board: 28 / 366

## **Multiplicity Distributions and fluctuations in Heavy-Ion Collisions**

**Corresponding Author:** maitreyee.mukherjee@cern.ch

363

## **Evolution of quark-gluon plasma and quark-hadron phase transition**

**Corresponding Author:** yogesh.du81@gmail.com

295

## **Transformations Between Accelerated Frames with the Equivalence Principle and Lie Group Technique**

**Corresponding Author:** georg@bgu.ac.il

Board: 29 / 319

## **Long range force in the baryon at finite T**

**Corresponding Author:** abakry@impcas.ac.cn

314

## **High multiplicity proton-proton events: a new horizon in multi-particle production**

**Corresponding Author:** premomoy.ghosh@cern.ch

Board: 1 / 415

## **Bose-Einstein effects in angular correlations and balance function in pp collisions using PYTHIA8 simulations**

**Corresponding Author:** d.i.neverov@gmail.com

3

## Reception

362

### Universality of particle production and energy balance in hadronic and nuclear collisions

Corresponding Author: edward.sarkisyan-grinbaum@cern.ch

301

### Inclusive photon production at forward rapidities in pp collisions at LHC energies

Corresponding Author: premomoy.ghosh@cern.ch

248

## B physics results from CMS

Author: Niladribihari Sahoo<sup>1</sup>

<sup>1</sup> National Institute of Science Education and Research (IN)

Corresponding Author: niladribihari.sahoo@cern.ch

257

### Heavy Quark dynamics in the Quark-Gluon Plasma and the puzzling relation between $R_{AA}$ and $v_2$

Corresponding Author: greco@lns.infn.it

371

## The q-statistics and QCD thermodynamics at LHC

Corresponding Author: raghunath.sahoo@cern.ch



## Event-by-event fluctuation and correlation measurements at the LHC energies in ALICE

**Corresponding Author:** sumit.basu@cern.ch

Board: 7 / 413

## Local Efficiency Corrections to Higher Order Cumulants

**Corresponding Author:** maitreyee.mukherjee@cern.ch

226

## BESIII Physics Highlights

**Corresponding Author:** wolfgang.kuehn@cern.ch

160

## Recent results from NA61/SHINE

**Author:** Evgeny Andronov<sup>1</sup>

<sup>1</sup> *St. Petersburg State University (RU)*

**Corresponding Author:** evgeny.andronov@cern.ch

The NA61/SHINE experiment aims to discover the critical point of strongly interacting matter and study the properties of the onset of deconfinement. For this goal the scan through two dimensional phase diagram ( $T-\mu_B$ ) is being performed at the SPS by measurements of hadron production in proton-proton, proton-nucleus and nucleus-nucleus interactions as a function of collision energy and system size.

In this contribution intriguing results on the energy dependence of hadron spectra and yields in inelastic p+p and centrality selected Be+Be collisions will be presented. In particular, the energy dependence of the signals of deconfinement, the “horn”, “step” and “kink”, in p+p interactions will be presented and compared with the corresponding results from central Pb+Pb collisions from NA49.