

1st International Conference on New Frontiers in Physics 2012

EPJ Web of Conferences Volume 70 (2014)

**Kolymbari, Crete, Greece
10-16 June 2012**

Editors:

**Larissa Bravina
Yiota Foka
Sonia Kabana**

ISBN: 978-1-63266-564-5

Printed from e-media with permission by:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571



Some format issues inherent in the e-media version may also appear in this print version.

This work is licensed under a Creative Commons Attribution license:

<http://creativecommons.org/licenses/by/2.0/>

You are free to:

Share – copy and redistribute the material in any medium or format.

Adapt – remix, transform, and build upon the material for any purpose, even commercial.

The licensor cannot revoke these freedoms as long as you follow the license terms.

Under the following terms:

You must give appropriate credit, provide a link to the license, and indicate if changes were made.

You may do so in any reasonable manner, but not in any way that suggests the licensor endorses you or your use. The copyright is retained by the corresponding authors.

Printed by Curran Associates, Inc. (2014)

For additional information, please contact EDP Sciences – Web of Conferences at the address below.

EDP Sciences – Web of Conferences
17, Avenue du Hoggar
Parc d'Activité de Courtabœuf
BP 112
F-91944 Les Ulis Cedex A
France

Phone: +33 (0) 1 69 18 75 75
Fax: +33 (0) 1 69 28 84 91

contact@webofconferences.org

Additional copies of this publication are available from:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571 USA
Phone: 845-758-0400
Fax: 845-758-2634
Email: curran@proceedings.com
Web: www.proceedings.com

TABLE OF CONTENTS

Entanglement, Information, Causality.....	1
<i>Gennaro Auletta</i>	
Higgs Boson Search at the CMS Experiment	19
<i>Somnath Choudhury</i>	
Classical and Quantum Information Acquisition: Measurement and POVM.....	32
<i>Gennaro Auletta</i>	
Strings and Extra Dimensions: Mass Hierarchies and Experimental Signatures	39
<i>I. Antoniadis</i>	
Finite Theories Predictions vs. the Discovery of a Higgs-Like Boson at the LHC.....	49
<i>Sven Heinemeyer, Myriam Mondragón, George Zoupanos</i>	
Search for the Standard Model Higgs Boson at CMS in the 4-Lepton Channel	61
<i>Meneghelli Marco</i>	
W\pm Z and Diboson Physics at ATLAS.....	69
<i>Nick Edwards</i>	
Recent Results from Experiment D0	82
<i>V. Šimák</i>	
The Tsallis Distribution at the LHC.....	96
<i>Jean Cleymans</i>	
Anisotropic Flow in HYDJET++: Interplay Between Soft and Hard Physics	102
<i>E. Zabrodin, L. Bravina, B. H. Brusheim Johansson, G. Eyyubova</i>	
Time Evolution of the sQGP with Hydrodynamic Models.....	108
<i>M. Csanád</i>	
Incurable Adler Relation for Soft Neutrino Interactions	115
<i>B. Z. Kopeliovich, I. K. Potashnikova, Iván Schmidt, M. Siddikov</i>	
The Coulomb Law and Atomic Levels in a Superstrong B	123
<i>M. I. Vysotsky</i>	
Fermiophobic Higgs Boson and Supersymmetry	130
<i>Antonio Racioppi</i>	
Proton-Proton Collisions at Ultra-Relativistic Energies in Quark-Gluon String Model	139
<i>L. Bravina, J. Bleibel, L. Malinina, M. S. Nilsson, E. Zabrodin</i>	
Measurements of the Z Boson in Lepton Pair Decays in Heavy Ion Collisions at ATLAS.....	147
<i>Valery Pozdnyakov</i>	
Hadronic Observables in Hydrokinetic Picture of A+A Collisions at RHIC and LHC	153
<i>Yuriy Sinyukov, Iurii Karpenko</i>	
Thermal Characteristics Confronting Trace Anomaly and Intrinsic Canonical Structure of QCD: A Traceback from Hypotheses of Mainly Second Order Phase Transition with Respect to Energy Density in QCD	162
<i>Peter Minkowski, Sonia Kabana</i>	
Understanding Color Confinement	177
<i>A. Di Giacomo</i>	
Highlights from the ATLAS Experiment.....	182
<i>Sally Seidel</i>	
Recent Results of the CMS Experiment.....	198
<i>Tommaso Dorigo</i>	
The Strongly Interacting Quark Gluon Plasma at RHIC and LHC.....	213
<i>Itzhak Tserruya</i>	
Overview of Results from ALICE at the CERN LHC	225
<i>Panos Christakoglou</i>	
New States with Heavy Quarks	237
<i>Marek Karliner, Harry J. Lipkin, Nils A. Törnqvist</i>	
Limits on Compact Halo Objects As Dark Matter from Gravitational Microlensing	248
<i>Philippe Jetzer</i>	
AMS-02 on the International Space Station	258
<i>Francesca R. Spada</i>	
QCD vs. the Centrifugal Barrier: A New QCD Effect.....	269
<i>Tamar Friedmann</i>	

CMS Detector Performance	278
<i>Daniel Teyssier</i>	
Event Reconstruction and Particle Identification in the ALICE Experiment at the LHC	285
<i>Iouri Belikov</i>	
Hard And Soft QCD Physics In ATLAS	294
<i>Stefanie Adomeit</i>	
Hard-Thermal-Loop QCD Thermodynamics and Quark Number Susceptibility	302
<i>Sylvain Mogliacci, Nan Su</i>	
Clustering of Color Sources and the Equation of State of the QGP	312
<i>Brijesh K. Srivastava</i>	
The Old New Frontier: Studying the CERN-SPS Energy Range with NA61/SHINE	320
<i>Marek Szuba</i>	
New Bottomonium(-like) Resonances' Spectroscopy and Decays at Belle	329
<i>Umberto Tamponi</i>	
Pre-Big Bang, Fundamental Physics and Noncyclic Cosmologies: Possible Alternatives to Standard Concepts and Laws	335
<i>L. Gonzalez-Mestres</i>	
Heavy Ion Physics Highlights from ATLAS	346
<i>Zvi Citron</i>	
Production and Spectroscopy at LHCb	355
<i>Andrea Contu</i>	
Can a Future Choice Affect a Past Measurement's Outcome?	370
<i>Y. Aharonov, E. Cohen, D. Grossman, A. C. Elizur</i>	
Transaction and Non Locality in Quantum Field Theory	380
<i>Ignazio Licata</i>	
On Novel String Theories from 4d Gauge Theories	387
<i>Elias Kiritsis</i>	
Holographic Description of the QCD Phase Diagram and Out of Equilibrium Dynamics	405
<i>Nick Evans</i>	
Primordial Scalar Perturbations Via Conformal Mechanisms: Statistical Anisotropy	418
<i>Sabir Ramazanov, Grigory Rubtsov</i>	
The Dark Matter Annual Modulation Results from DAMA/LIBRA	430
<i>R. Bernabei, P. Belli, F. Cappella, V. Caracciolo, R. Cerulli, C. J. Dai, A. D'Angelo, A. Di Marco, H. L. He, A. Incicchitti, X. H. Ma, F. Montecchia, X. D. Sheng, R. G. Wang, Z. P. Ye</i>	
Present and Future Strategies for Neutrinoless Double Beta Decay Searches	443
<i>Marco Vignati</i>	
Highlights from the OPERA Experiment	452
<i>N. Mauri</i>	
The Relevance of Very Light Dark Matter	466
<i>Urjit A. Yajnik</i>	
High-Energy Cosmic Rays and Tests of Basic Principles of Physics: Looking at the Planck Scale and Beyond	473
<i>L. Gonzalez-Mestres</i>	
Cosmology in a Petri Dish? Simulation of Collective of Colloids at Fluid Interfaces	484
<i>J. Bleibel</i>	
Indirect Dark Matter Search with the ANTARES Deep-Sea Cherenkov Detector	493
<i>Paolo Fermani</i>	
New Physics Searches with ATLAS	501
<i>Alaettin Serhan Mete</i>	
Unification with Mirror Fermions	510
<i>George Triantaphyllou</i>	
The HERA Proton	520
<i>Shiraz Habib</i>	
Unusual Interactions of Pre-and-Post-Selected Particles	526
<i>Y. Aharonov, E. Cohen, S. Ben-Moshe</i>	
EPR Measurement and the Origin of Cosmic Density Fluctuations	532
<i>Masahiro Morikawa</i>	
The ICARUS Experiment at LNGS Underground Laboratory	538
<i>Nicola Cianci</i>	
Generation of High-Energy Particles, Neutrino and Fotons in Magnetosphere of Collapsing Star	547
<i>Volodymyr Kryvdyk</i>	

Open Heavy Flavor and Quarkonia Measurements in Heavy-Ion Collisions at RHIC	562
<i>Jaroslav Bielcik</i>	
Heavy Flavour Production at LHC: An Overview	569
<i>Giuseppe Eugenio Bruno</i>	
Open Heavy-Flavour Measurements in pp and Pb-Pb Collisions with ALICE at the LHC	578
<i>Sarah Lapointe</i>	
J/ψ Measurements with the ALICE Experiment at the LHC	587
<i>Christoph Blume</i>	
Charmonium Dissociation and Heavy Quark Transport in Hot Quenched Lattice QCD	595
<i>H.-T. Ding, A. Francis, O. Kaczmarek, F. Karsch, H. Satz, W. Söldner</i>	
The International Linear Collider	604
<i>Benoit List</i>	
CP Violation in D-Meson Decays	616
<i>M. I. Vysotsky</i>	
The eRHIC Project	625
<i>Thomas Burton</i>	
The String and the Cosmic Bounce	632
<i>V. Bozza</i>	
Present and Future Investigations of Hadron Formation Mechanisms in Pb–Pb Collisions at the LHC with the ALICE Experiment	643
<i>Christian Kuhn</i>	
J/ψ Production Off Nuclei: A Detour from SPS to LHC	651
<i>B. Z. Kopeliovich, I. K. Potashnikova, Iván Schmidt</i>	
J/ψ Photoproduction in Ultra-Peripheral Heavy Ion Collisions with the ALICE Experiment	665
<i>M. Rodríguez Cahuantzi</i>	
International Particle Physics Masterclasses with LHC Data	669
<i>Panagiota Foka</i>	
The Neutrino Telescope ANTARES	678
<i>Andreas Gleixner</i>	
Top Quark Physics at the LHC	688
<i>Tae Jeong Kim</i>	
Highlights from SUSY Searches with ATLAS	706
<i>Vasiliki A. Mitsou</i>	
Neutron Emission from Electromagnetic Dissociation of Pb Nuclei at $\sqrt{s_{NN}} = 2.76$ TeV Measured with the ALICE ZDC	715
<i>P. Cortese</i>	
Charged-Hadron Production in the Three-Sources RDM at LHC Energies	729
<i>David Röhrscheid, Georg Wolschin</i>	
Charged Particle Directed Flow in Pb-Pb Collisions At $\sqrt{s_{NN}} = 2.76$ TeV Measured with ALICE at the LHC	742
<i>Eyyubova Gyulnara</i>	
NOvA Experiment in Light of Large θ_{13}	749
<i>Denis Perevalov</i>	
Mixing and CP Violation in the Beauty and Charm Sectors at LHCb	757
<i>Neus López March</i>	
CP Violation and Electroweak Baryogenesis in the Standard Model	766
<i>Tomáš Brauner</i>	
Charmless B Decays	774
<i>Aurélien Martens</i>	
Recent Results from PHENIX on the Evolution of Hot QCD	783
<i>Norbert Novitzky</i>	
Realization of Dynamical Electronic Systems	792
<i>Elena Hammari, Francky Cattoor, Leonidas Iasemidis, Per Gunnar Kjeldsberg, Jos Huiskens, Konstantinos Tsakalis</i>	
Newtonian Gravity on Quantum Spacetime	802
<i>Shahn Majid</i>	
Some Aspects of String Cosmology and the LHC	812
<i>Nick E. Mavromatos</i>	
NICA Complex and JINR - Status and Plans	826
<i>Vladimir Kekelidze, Alexander Kovalenko, Richard Lednický, Viktor Matveev, Igor Meshkov, Alexander Sorin, Grigory Trubnikov</i>	

CLIC: Status and Plan833

André Sailer

Author Index