

Wednesday, July 4

Lectures. 8:45

1. Opening. — 15 min.
2. David Blaschke
Was GW170817 indeed a merger of two neutron stars? — 45 min.
3. Michal Eckstein
NCG overview. — 45 min.

Coffee Break. 10:30 – 11:00

4. Kyrill Bugaev
Chemical Freeze-out Parameters Found by Hadron Resonance Gas Model with Induced Surface Tension. — 45 min.
5. Gordon Semenoff
Dynamical violation of scale invariance and the dilaton in a cold Fermi gas. — 45 min.
6. Lawrence Gibbons
Status of $g-2$ for the Muon. — 45 min.

Lunch. 13:30 – 15:00

7. Thiago Guerreiro
Quantum entanglement and wave particle duality. — 60 min.

Coffee Break. 16:00 – 16:30

Blessing in the OAC Chapel (19:00 – 20:00)

**After dinner talk in the open veranda of OAC
"History of Crete" by Emanuela Larentzakis
(20:30 – 21:15)**

Thursday, July 5

Plenary Session (Room 1, 8:20)

1. Opening of the conference. — 40 min.
2. Slava Mukhanov
Bekenstein Entropy and Hawking Radiation-Reminiscences. — 30 min.
3. Robert Pisarki
The phase diagram of QCD: Critical endpoint vs a pseudo-Lifshitz point. — 30 min.
4. Chihiro Sasaki
Parity doubling in QCD thermodynamics. — 30 min.

Coffee Break. 10:30 – 11:00

Special session on QCD – from vacuum to finite temperatures (Room 1, 11:00)

1. Hugo Reinhardt
Hamiltonian approach to finite temperature QCD by compactification of a spatial dimension. — 30 min.
2. Willibald Plessas
Relativistic Coupled-Channels Quark Model for Baryon Ground and Resonant States. — 30 min.
3. Herbert Weigel
Exotic Baryons in Chiral Soliton Models. — 30 min.
4. Krzysztof Redlich
Exploring chiral symmetry restoration in heavy-ion collisions with fluctuation observables. — 30 min.
5. Ralf Hofmann
 $SU(2)$ Yang-Mills thermodynamics and Cosmology. — 30 min.

**Mini Workshop on Instruments and Methods in HEP
(Room 2, 11:00)**

1. Martina Ressegotti
Overview of the CMS detector performance at LHC Run 2. — 30 min.
2. Christos Lampoudis
The Micromegas construction project for the ATLAS New Small Wheel. — 30 min.
3. Georgios Tsiledakis
Large high-efficiency thermal neutron detectors based on the Micromegas technology. — 30 min.
4. Dragos-Victor Anghel
Ultrasensitive superconducting photon detectors for axions observation. — 30 min.

Lunch. 13:30 – 15:00

5. Oleksandr Starodubtsev
ELI-NP gamma beam characterization. Beam imager and a new-concept gamma calorimeter. — 30 min.
6. Nadir Daci
CMS Trigger Performances. — 30 min.

**Special session on Astro-Cosmo-Gravity
(Room 3, 11:00)**

1. Angela Gligorova
The AEGIS experiment: current status and outlook. — 30 min.
2. Camilla Maggio
MAGIC: from Astrophysics to Fundamental Physics. Presentation of the latest results . — 30 min.
3. Jorge Alfaro
 δ Gravity, δ matter and the accelerated expansion of the Universe. — 30 min.
4. Martin Pohl
Magnetic field in intergalactic space. — 30 min.

5. Xavier Defay
Identification of Dark Matter with the CRESST-III Experiment. — 30 min.

Lunch. 13:30 – 15:00

6. Nikolay Gulitskiy
Two-loop calculations for a compressible turbulence: Renormalization group analysis of stochastic Navier-Stokes equation. — 20 min.
7. Tomasz Miller
Causal evolution of probability measures. — 20 min.
8. Vladimir Dzhunushaliev
Mass gap, deconfinement and Λ_{QCD} in non-perturbative quantization à la Heisenberg. — 20 min.

Parallel Section (Room 4, 11:00)

1. Ivan Ravasenga
Studying collective phenomena and very low p_T pion production in pp, Pb-Pb and Xe-Xe collisions with the ALICE experiment. — 20 min.
2. Mikhail Zubkov
Momentum space topology and non - dissipative currents. — 20 min.
3. Alexandru Catalin Ene
Monte Carlo event generator predictions for forward physics in $\sqrt{s} = 7$ TeV proton-proton collisions. — 20 min.
4. Guglielmo Baccani
Muon radiography of an Etruscan mine: the San Silvestro archaeological park near Campiglia Marittima (Tuscany). — 20 min.
5. Federica Mingrone
Neutron-induced reaction measurements at the n_TOF facility of CERN. — 20 min.
6. Frigyes Janos Nemes
Elastic and Total Cross-Section Measurements by TOTEM: Past and Future. — 20 min.
7. Zahra Ghorbanimoghaddam
Search for Boosted Dark Matter at ProtoDUNE. — 20 min.

**Parallel session A High Energy Particle Physics
(Room 1, 15:00)**

1. Diego Martinez Santos
Probing SUSY effects in $K^0 S \rightarrow \mu_+ + \mu_-$. — 20 min.
2. Francesco Gonnella
Search for $K_+ \rightarrow \pi_+ \nu \nu_+$ search for exotic particles at NA62. — 25 min.
3. Murat Ali Guler
Study of charm hadroproduction and tau neutrino production at CERN SPS. — 20 min.

Coffee Break. 16:00 – 16:30

4. Ashot Gasparian
Neutral Pion Radiative Decay Width Precision Measurement at Jefferson Lab. — 20 min.

Parallel session B Heavy Ion Collisions and Critical Phenomena (Room 4, 15:00)

1. Andrea Alici
Charmed meson and baryon production with ALICE at the LHC. — 30 min.
2. Anastasia Merzlaya
Open charm measurements at CERN SPS energies with the new Vertex Detector of the NA61/SHINE experiment - status and plans. — 30 min.

Special session on QCD – from vacuum to finite temperatures (Room 1, 17:00)

1. Stanley Brodsky
Supersymmetric Features of Hadron Physics and other Novel Properties of Quantum Chromodynamics from Light-Front holography and Superconformal Algebra. — 35 min.

Welcome Concert (21:20 – 22:30)

Friday, July 6

Plenary Session (Room 1, 8:30)

1. Diego Martinez Santos
Highlights from LHCb. — 30 min.
2. Saranya Samik Ghosh
CMS Highlights. — 30 min.
3. Xingguo Li
ATLAS Highlights. — 30 min.
4. Francesco Noferini
ALICE Highlights. — 30 min.

Coffee Break. 10:30 – 11:00

Main Conference Section (Room 1, 11:00)

1. Diane Cinca
Higgs physics at ATLAS. — 30 min.
2. Yusheng Wu
Probing the Electroweak Sector and QCD with the ATLAS Detector. — 30 min.
3. Claudio Caputo
Higgs (CMS). — 30 min.
4. Katharina Mueller
Flavour Anomalies in Rare Decays at LHCb. — 30 min.
5. Katharina Mueller
CP violation in B decays at LHCb. — 30 min.

Lunch. 13:30 – 15:00

6. Robert Harris
Search for narrow and broad dijet resonances at CMS. — 30 min.

**Special session on QCD – from vacuum to finite
temperatures (Room 2, 11:00)**

1. Thomas Cohen
The QCD Vacuum and the theta term. — 30 min.
2. Leonid Glozman
Chiralspin symmetry and its implications for QCD. — 30 min.
3. Thierry Grandou
Perturbative peculiarities of quantum fields at non-zero temperature. — 30 min.
4. Peter Lowdon
Probing the analytic structure of QCD propagators. — 30 min.
5. Roman Rogalev
The Longitudinal Gluon Propagator in Lattice $SU(2)$ Gluodynamics at the Criticality. — 30 min.

**Special session on Astro-Cosmo-Gravity
(Room 3, 11:00)**

1. Anna Pollmann
Neutrino and beyond standard model physics with IceCube. — 30 min.
2. Vitaly Kudryavtsev
LUX results and LZ sensitivity to dark matter WIMPs. — 30 min.
3. Filip Simovic
A Holographic Approach To Gravitational Screens. — 30 min.
4. Matteo Sanguineti
ANTARES and KM3NeT: latest results of the neutrino telescopes in the Mediterranean. — 30 min.
5. Haidar Sheikhahmadi
Quasi-bi-Field Spectroscopy for Primordial Perturbations in Schwinger-Keldysh formalism. — 30 min.

Friday, July 6

Excursion to Chania (16:00 – 23:30)

Historical Talk (19:00)

**Concert of classical music and
Public Talk by Dr. Despina Hatzifotiadou
(19:30 – 21:00)**

Saturday, July 7

Lev's Lipatov Memorial Session (Plenary Session, Room 1, 8:30)

1. Victor Fadin
Memories of Lev Lipatov, a scientist and a man. — 30 min.
2. Carl Bender
Nonlinear eigenvalue problems. — 30 min.
3. Arkady Vainshtein
On vacuum angle (in)dependence in the Higgs regime. — 30 min.
4. Valentin Zakharov
Towards understanding the origin of the micro states of large black holes. — 30 min.

Coffee Break. 10:30 – 11:00

Lev's Lipatov Memorial Session (Room 1, 11:00)

1. R. Muradyan (piano), S. Nor (violin), V. Nor (cello)
"In memory of a great artist", Trio by P.I. Tchaikovsky, Part II-A. — 30 min.
2. Roland Kirschner
High-energy scattering in QCD and Yangian symmetry. — 30 min.
3. Dmitry Kazakov
Kinematically Dependent Renormalization. — 30 min.
4. Agustin Sabio Vera
Gravity in the high energy limit. — 30 min.
5. Irina Aref'eva
Effects of non-zero chemical potential in the holographic QCD. — 30 min.

Lunch. 13:30 – 15:00

6. Victor Kim
High-energy QCD asymptotics at collider energies. — 30 min.

7. Henri Kowalski
Unexpected properties of the discrete BFKL solution. — 30 min.

Coffee Break. 16:00– 16:30

8. Victor Fadin
Regge cuts in QCD amplitudes. — 30 min.

9. Alex Prygarin
Subleading corrections to the BFKL equation: singlet versus color adjoint state. — 30 min.

10. Jamal Jalilian-Marian
Particle production at high energy: DGLAP, BFKL and beyond. — 30 min.

11. Luca Trentadue
Radiative corrections for a novel evaluation of the Hadronic Leading Order Contribution to the $g-2$ of the Muon. — 30 min.

12. Gennady Volkov
On the geometry of the new fermion exotic "spin"-structure. — 30 min.

**Parallel session A High Energy Particle Physics
(Room 2, 11:00)**

1. Music in Room 1.
"In memory of a great artist", Trio by P.I.Tchaikovsky, Part II-A. — 30 min.

2. Florian Kuchler
Searches for electric dipole moments (EDM) Overview of status and new experimental efforts. — 30 min.

3. Nandita Raha
The current status of the Fermilab Muon $g-2$ Experiment. — 30 min.

4. Laura Patrizii
Status of the searches for magnetic monopoles. — 30 min.

5. Maria Vasileiou
Hadronic resonance production measured by ALICE at the LHC. — 30 min.

Parallel session B Heavy Ion Collisions and Critical Phenomena (Room 3, 11:00)

1. Music in Room 1.
"In memory of a great artist", Trio by P.I.Tchaikovsky, Part II-A. — 30 min.
2. Rachid Nouicer
Charm and Bottom Measurements as Precision Probes of QCD Medium at RHIC. — 30 min.
3. Yorito Yamaguchi
Direct photon results from PHENIX at RHIC. — 30 min.
4. Dag Larsen
Upgrade of the NA61/SHINE facility beyond 2020 for an expanded physics programme. — 30 min.
5. Meera Machado
The Angular Power Spectrum of Heavy Ion Collisions. — 30 min.

Special session on Astro-Cosmo-Gravity (Room 4, 11:00)

1. Music in Room 1.
"In memory of a great artist", Trio by P.I.Tchaikovsky, Part II-A. — 30 min.
2. Fabio Bellini
First Result on the Neutrinoless Double Beta Decay of ^{82}Se with CUPID-0. — 30 min.
3. Georgy Burde
Cosmological models arising from relativity with a privileged frame. — 30 min.
4. Carla Maria Cattadori
Highlights from GERDA project. — 30 min.

5. Fabio Ferrarotto
The investigation on the dark sector at the PADME experiment. — 30 min.

Lunch. 13:30 – 15:00

6. Mario Mastromarco
 $n + {}^7\text{Be}$ cross-sections of astrophysical interest at the CERN n -TOF facility. — 30 min.
7. Alessandro Di Marco
Recent developments and results on double beta decays with crystal scintillators and HPGe spectrometry. — 30 min.

Coffee Break. 16:00 – 16:30

8. Alessio Caminata
Results from the CUORE experiment. — 30 min.
9. Liliana Caballero
Neutrino emission from magnetized neutron star mergers: equation-of-state effects. — 30 min.
10. Alexander Ayriyan
Bayesian analysis for extracting properties of the nuclear equation of state from observational data. — 30 min.
11. Lino Miramonti
Solar Neutrinos Spectroscopy with Borexino Phase-II. — 30 min.
12. Hovik Grigorian
The role of the equation of state in compact star physics and phenomenology. — 30 min.

Physics Education and Outreach (Room 6, 11:00)

1. Despina Hatzifotiadou
Outreach Masterclass — 150 min.

Lunch. 13:30 – 15:00

2. Despina Hatzifotiadou
The Extreme Energy Events Project : Science in the Schools. — 20 min.

3. Kasper van Dam
The HiSPARC Experiment. — 20 min.

4. Antonios Leisos
Hellenic Lyceum Cosmic Observatories Network (HELYCON): a status report. — 20 min.

Coffee Break. 16:00 – 16:30

5. CERN speaker
TBA. — 20 min.

6. Zhigong Xing
Outreach as a particle physics blogger in China. — 20 min.

7. Francesco Gonnella
Public Engagement with Particle Physics at the University of Birmingham, UK. — 20 min.

8. Dariusz Gora
Cosmic Ray Extremely Distributed Observatory: status and perspectives. — 20 min.

Mini Workshop on Instruments and Methods in HEP (Room 3, 15:00)

1. Rita Borgheresi
A characterization system for the monitoring of ELI-NP gamma beam. — 30 min.

2. A Carla Sbarra
The LUCID-2 detector. — 30 min.

Coffee Break. 16:00 – 16:30

3. Nicholas Tsoupas
The Use of Permanent Magnets in High Energy Physics. — 30 min.

Guided tour to Gonia Monastery (19:00 – 20:30)

Sunday, July 8

Excursions.

1. *A full day trip to the Palace of Knossos and the Museum of Herakleion.*

- 6.30 – Departure from OAC
- 9.00 – Arrival to Knossos
- 11.00 – Departure from Knossos
- 11.30 – Arrival to Archeological Museum of Heraklion
- 13.30 – Departure from Archeological Museum of Heraklion
- 14.00 – Arrival to Taverna Petoussis
- 16.00 – Departure from Taverna Petoussis
- 19.00 – Arrival to OAC

2. *An excursion to two famous Cretan monasteries: monastery of Chrysopigi and monastery of Agia Triada.*

- 6:00 – Departure from OAC
- 6:50 – Metamorphosis Monastery
- 10:00 – Excursion and Breakfast in Agia Kyriaki Monastery
- 11:40 – Excursion and Lunch in Chrysopigi Monastery
- 14:00 – Agia Triada Monastery Excursion
- 16:00 – Venizelos Graves
- 17:00 – Arrival to OAC

3. *A trip to Falassarna beach.*

- 10.30 – Departure from OAC
- 11.30 – Arrival to Falassarna beach
- 13.30 – Arrival to Taverna at Falassarna Beach
- 15.00 – Departure from Taverna at Falassarna Beach
- 17.00 – Departure from Falassarna beach
- 18.00 – Arrival to OAC

Monday, July 9

Plenary Session (Room 1, 8:30)

1. Harald Fritzsch
Composite Weak Bosons and Dark Matter. — 30 min.
2. Paul Frampton
Doubly-Charged Bileptons at the LHC. — 30 min.
3. Nicolo Trevisani
Collider searches for Dark Matter (ATLAS+CMS). — 30 min.
4. Ignatios Antoniadis
Inflation from supersymmetry breaking. — 30 min.

Coffee Break. 10:30 – 11:00

Mini-workshop on Correlations and Fluctuations in Relativistic Heavy Ion Collisions (Room 1, 11:00)

1. Antoine Lardeux
Recent results on quarkonia in AA collisions from ALICE at the LHC. — 30 min.
2. Julia Velkovska
PHENIX insights on the inner workings of the quark-gluon plasma. — 30 min.
3. Sonja Kabana
Highlights from the Heavy Ion Program of the STAR experiment at RHIC. — 30 min.
4. Laszlo Pal Csernai
Hadronization of QGP over timelike hypersurfaces and its extension to fusion reactions with nano-plasmonics. — 30 min.
5. Evgeny Zabrodin
Influence of spatial and dynamical anisotropies on flow and femtoscropy radii in relativistic heavy-ion collisions at LHC. — 30 min.

Lunch. 13:30 – 15:00

6. Edward Sarkisyan-Grinbaum
Multihadron production: universality, correlations and search for new physics. — 30 min.
7. Agustin Sabio Vera
Multiparticle production in the Multi-Regge limit. — 30 min.

Coffee Break. 16:00 – 16:30

8. Vladimir Vechernin
Strongly intensive observables in the model with string fusion. — 25 min.

Workshop on Frontiers in Gravitation, Astrophysics, and Cosmology (Room 2, 11:00)

1. Damian Ejlli
Vacuum polarization and superluminal photons in the era of gravitational waves. — 30 min.
2. Michael Good
A Unitary Black Hole Evaporation Model. — 30 min.
3. George Livadiotis
Statistical physics and thermodynamics of space and astrophysical plasmas. — 30 min.
4. Hyung Mok Lee
Dynamical processes for the formation of compact binaries in dense star clusters. — 30 min.

Lunch. 13:30 – 15:00

5. Masahiro Morikawa
Supermassive black holes and dark halo from the Bose-condensed dark matter. — 30 min.
6. Jong Hyuk Yoon
Hamiltonian Reduction for Einstein's Equations without isometries. — 30 min.

**Workshop on New physics paradigms after Higgs and
gravitational wave discoveries (Room 3, 11:00)**

1. Karim Benakli
Higgs Boson Alignment. — 45 min.
2. Stephane Lavignac
*Lepton flavour and the matter-antimatter asymmetry of the Uni-
verse.* — 45 min.
3. Jean-Pierre Derendinger
Supersymmetry breaking. — 45 min.

Lunch. 13:30 – 15:00

4. Yifan Chen
Gravitino Dark Matter. — 45 min.

Coffee Break. 16:00 – 16:30

5. Herv Partouche
Quantum no-scale regimes in string theory. — 45 min.
6. Ioannis Florakis
*Supersymmetry breaking in heterotic strings and corrections to
gauge couplings.* — 45 min.

**Workshop on Frontiers in Gravitation, Astrophysics, and
Cosmology (Room 4, 11:00)**

1. Kei-ichi Maeda
Massive Graviton Geons and Dark Matter. — 30 min.
2. Paul Frampton
Primordial Intermediate-Mass Black Holes as Dark Matter. — 30 min.
3. Sung-Won Kim
Wormhole and the Universe. — 30 min.
4. Yuuki Nakano
*Search for neutrinos in Super-Kamiokande associated with gravi-
tational wave events.* — 30 min.

Lunch. 13:30 – 15:00

5. Aniello Mennella
*QUBIC: Exploring the primordial Universe with the Q&U Bolo-
metric Interferometer.* — 30 min.
6. Pierluigi Belli
First model independent results from DAMA/LIBRA- phase2 . — 30 min.

Coffee Break. 16:00 – 16:30

7. Margaret Carrington
*Renormalisation of non-perturbative calculations in scalar theo-
ries.* — 30 min.

Workshop on Resurgent Asymptotics in Physics and Mathematics (Room 5, 11:00)

1. Carl Bender
PT-symmetric quantum field theory. — 50 min.
2. Ovidiu Costin
Resurgence: foundations, universality and applications. — 50 min.
3. Yasuyuki Hatsuda
Instantons in the Hofstadter butterfly. — 50 min.

Lunch. 13:30 – 15:00

4. Pavel Putrov
Resurgence in Chern-Simons theory. — 50 min.

Workshop on Heavy Neutral Leptons (Room 6, 11:00)

1. Kyrylo Bondarenko
*Searches for heavy neutral leptons at Intensity Frontier Experi-
ments.* — 30 min.
2. Dmytro Iakubovskiy
*Reionization and 21cm absorption in WDM and sterile neutrino
DM cosmologies.* — 30 min.

3. Oleg Ruchayskiy/Alexey Boyarsky
Status of the 3.5 keV line and Lyman-alpha forest. — 30 min.
4. Dmitry Gorbunov
Dark matter sterile neutrino and scalar field. — 30 min.
5. Vsevolod Syvolap
Supernova emission of sterile neutrino mixed with flavors. — 30 min.

Parallel Section (Room 1, 16:55)

1. Burt Ovrut
Non-Perturbative Superpotentials in Heterotic String Theory. — 25 min.

Coffee Break. 16:00 – 16:30

2. Peter Minkowski
Towards a basic gauging of space orientation – the sole seed of local field interactions. — 30 min.
3. Stefan Pokorski
Nambu-Goldstone bosons in particle physics and cosmology. A review. — 30 min.

Parallel Section A High Energy Particle Physics (Room 2, 16:30)

1. Priyanka Priyanka
Single top quark production in CMS. — 25 min.
2. Nikolaos Kidonakis
Total and differential cross sections for Higgs and top-quark production. — 25 min.
3. Sergey Mironov
Gauges in generalized Galileon theories. — 30 min.

**Parallel Section A High Energy Particle Physics
(Room 5, 16:30)**

1. Alessandro Paoloni
New results from the OPERA experiment in the CNGS neutrino beam. — 30 min.

Lecture (Room 1, 18:30)

1. Avshalom Elitzur
Subtle Quantum Measurements Straining Ordinary Causality. — 60 min.

Poster Session (19:30–20:30)

Best Poster Award Ceremony (20:30 – 21:30)

Classical music (21:30 – 22:30)

Tuesday, July 10

Plenary Session (Room 1, 8:30)

1. Louis Fayard
BEH at LHC from the start of data taking until precision measurements and HL-LHC . — 30 min.
2. Alexander Sorin
Vorticity, hydrodynamic helicity and polarization in baryon-rich matter. — 30 min.
3. Onur Hosten
Quantum metrology frontiers with cold atoms. — 30 min.
4. Pawel Horodecki
From quantum correlations to no-signaling and beyond. — 30 min.

Coffee Break. 10:30 – 11:00

Workshop on Physics at FAIR-NICA-SPS-BES/RHIC (Room 1, 11:00)

1. Pawel Piotr Staszal
Strong interaction program of the NA61/SHINE experiment - recent results and plans. — 30 min.
2. Pavel Batyuk
Studies of baryonic matter at BM@N JINR. — 30 min.
3. Alexandru Jipa
Simulation results on bulk properties and hydrodynamic behaviours of the high excited and dense nuclear matter in relativistic nuclear collisions at FAIR energies. — 30 min.
4. Vadim Kolesnikov
Prospects for heavy-ion physics with the MPD detector at NICA. — 30 min.
5. Myroslav Kavatsyuk
The PANDA experiment at FAIR. — 30 min.

Lunch. 13:30 – 15:00

6. Kyrill Bugaev
New signals of two QCD phase transitions in heavy ion collisions. — 30 min.
7. Larisa Bravina
Flow and Freeze out in Microscopic Models in relativistic A+A collisions. — 30 min.

Workshop on Quantum Foundations and Quantum Information (Room 2, 11:00)

1. Xiao-Ye Xu
Measurement of Nonlocal Observables and Its Applications. — 30 min.
2. Fabrizio Piacentini
Novel measurement protocols: from Protective Measurements to Robust Weak Measurements. — 30 min.
3. Aharon Brodutch
Towards an ontological theory with weak values. — 30 min.
4. Ralph Silva
Anomalous weak values without post-selection. — 30 min.

Lunch. 13:30 – 14:30

5. Andrea Alberti
Revealing Quantum Statistics with a Pair of Distant Atoms. — 30 min.
6. Yutaka Shikano
Geometric Phase with Decoherence. — 30 min.
7. Sorin Paraoanu
Superadiabatic stimulated Raman passage via synthetic Aharonov-Bohm phases. — 30 min.

Coffee Break. 16:00 – 16:30

8. Eli Pollak
Consequences of time averaging of weak values. — 30 min.

9. C Aris Dreismann
Weak values and weak measurement in elementary scattering and reflectivity a new effect. — 30 min.
10. Daniel Rohrlich
Deriving classical and quantum mechanics in parallel. — 30 min.

**Workshop on New physics paradigms after Higgs and gravitational wave discoveries
(Room 3, 11:00)**

1. Carlo Angelantonj
Heterotic thresholds: universality and the decompactification problem. — 45 min.
2. Giovanni Losurdo
Gravitational wave observations: achievements and perspectives. — 45 min.
3. Nikos Tsamis
TBA. — 45 min.

Lunch. 13:30 – 14:30

4. Vincent Vennin
Stochastic Inflation and Primordial Black Holes. — 45 min.
5. Jerome Martin
Obstructions to Bell CMB Experiments. — 45 min.

Workshop on Frontiers in Gravitation, Astrophysics, and Cosmology (Room 4, 11:00)

1. Jerome Martin
Inflation after Planck. — 30 min.
2. Claudio Bunster
Hamiltonian of the electromagnetic and gravitational fields on asymptotically null space-like surfaces. — 30 min.

Break. 12:00 – 12:30

3. Vincent Vennin
Quantum decoherence during inflation. — 30 min.

4. David Edward Bruschi
Work drives time evolution. — 30 min.

Lunch. 13:30 – 15:00

5. Zacharias Roupas
Relativistic Gravitational Instability and the Weight of Heat. — 20 min.

6. Victoria Volkova
Wormholes in generalized Galileon theories. — 20 min.

7. Jacques Rubin
Physical justifications and possible astrophysical manifestations of the projective theory of relativity. — 20 min.

Coffee Break. 16:00 – 16:30

8. Sudipta Sarkar
Holography, Second Law, and Higher Curvature Gravity. — 30 min.

9. Kunihito Uzawa
No-Go theorems for ekpyrosis from ten-dimensional supergravity. — 30 min.

Workshop on Resurgent Asymptotics in Physics and Mathematics (Room 5, 11:00)

1. Ricardo Schiappa
Resurgence in String Theory. — 50 min.

2. Martin Schnabl
Asymptotics of the rolling tachyon. — 50 min.

3. Marcel Vonk
Analytic Transseries Summation for Painlevé I. — 50 min.

Parallel Section B Heavy Ion Collisions and Critical Phenomena (Room 6, 11:30)

1. Peter Kalinak
Strange and multi-strange particle production in pp and PbPb collisions with ALICE at the LHC. — 30 min.
2. Yasir Ali
Study of Transverse momentum distribution in the p-Pb collisions at LHC energies. — 30 min.
3. Lais Ozelin De Lima Pimentel
Charged-particle multiplicity distributions in pp and p-Pb collisions with ALICE. — 30 min.
4. Mattia Dalla Brida
Precision determination of α_s from lattice QCD. — 30 min.

Lunch. 13:30 – 15:00

5. Spyridon Margetis
Measurement of open charm production and flow in 200 GeV Au+Au collisions. — 30 min.
6. Nachiketa Sarkar
Thermalization in small colliding systems at LHC and RHIC. — 30 min.

Parallel Section (Room 1, 16:30)

1. Junichi Yokoyama
Self-anisotropizing inflationary universe in Horndeski theory and beyond. — 20 min.
2. Harald Fritzsch
Flavour Mixing, Neutrino Oscillations and Neutrino Masses. — 20 min.
3. Antonios Gardikiotis
Searching for dark photons in the NA64 experiment at CERN. — 20 min.

**Workshop on Physics at FAIR-NICA-SPS-BES/RHIC
(Room 3, 16:30)**

1. Yogesh Kumar
A simple statistical model for QGP equation of state. — 30 min.
2. Nikolaos Davis
Electromagnetic effects at CERN SPS: from nuclear physics of the spectator system to the space-time evolution of the quark gluon plasma. — 30 min.
3. Saumen Datta
Quark number susceptibilities and equation of state in QCD at finite baryon chemical potential. — 30 min.

**Parallel Section
(Room 5, 15:00)**

1. Maxime Jacquet
The influence of spacetime curvature on spontaneous emission in optical analogues to gravity. — 30 min.
2. David Hayrapetyan
Theoretical investigation of optical properties of quasi two-dimensional excitonic complexes in ellipsoidal quantum dots. — 30 min.

Coffee Break. 16:00 – 16:30

3. Liping Gan
Probes for Fundamental Symmetries and Dark Gauge Bosons via η Decays. — 20 min.
4. Dmitriy Beznosko
New Physics emergence in Ultra-high energy cosmic rays events. — 20 min.

Parallel Section (Room 6, 16:30)

1. Petr Satunin
One-loop correction to the photon velocity in Lorentz-violating QED. — 30 min.
2. Konstantin Astapov
On photon splitting in Lorentz-violating QED. — 30 min.

Tuesday, July 10

Lecture (Room 1, 17:45)

Yakir Aharonov

Weak Reality in the Quantum Domain

— 60 min.

Public talk (Room 1, 19:00)

Albert De Roeck

Public Talk in English: The Status of our Understanding of Neutrinos and Future Prospects

— 60 min.

Opera Gala (21:30 – 22:30)

Wednesday, July 11

Plenary Session (Room 1, 8:30)

1. Yongmin Cho
Cosmological Implications of Electroweak Monopole. — 30 min.
2. Nick Mavromatos
CPT Violation: from matter-antimatter asymmetry in the Early Universe to entangled quantum states. — 30 min.
3. Marek Czachor
Flow and superpositions of quantum time: An old experiment and some new ideas. — 30 min.
4. Ebrahim Karimi
Twisted Quantum Waves. — 30 min.

Coffee Break. 10:30 – 11:00

Main Conference Section (Room 1, 11:00)

1. James Pinfold
The MoEDAL Experiment at the LHC - a Progress Report from the High Energy Frontier. — 30 min.
2. Katharina Mueller
Recent LHCb Results in Charm Spectroscopy. — 30 min.
3. Paolo Branchini
The Belle II Experiment: Status and Prospects. — 30 min.
4. Tommaso Dorigo
Hadron collider searches for new physics with boson pairs. — 30 min.
5. Colin Philip Jessop
Upgrades, future plans and prospects (CMS). — 30 min.

Workshop on Quantum Foundations and Quantum Information (Room 2, 11:00)

1. Pieter Kruit
*O*Interaction Free Measurements in Electron Microscopy. — 30 min.
2. Vincenzo Grillo
Quantum experiments with a Transmission electron microscope. — 30 min.
3. Luis Sanchez-Soto
TBA. — 30 min.
4. Dmitry Karlovets
Non-paraxial effects in the quantum scattering of wave packets. — 30 min.

Lunch. 13:30 – 14:30

5. Yuval Gefen
How to Directly Observe Quantum Discord. — 30 min.
6. Alessandro Romito
Thermodynamics of weakly measured quantum systems. — 30 min.
7. Moshe Goldstein
Anyonic statistics hidden due to “which path detection by upstream neutral modes in quantum Hall interferometers. — 30 min.

Coffee Break. 16:00 – 16:30

8. Holger Hofmann
Quantum mechanics as a theory of cause and effect: why there is no reality without a corresponding action. — 30 min.
9. Lajos Diosi
Dynamical interaction at the least decoherence, from local measurement and classical communication. — 30 min.
10. David Edward Bruschi
Nonlinear interactions in relativistic and quantum physics. — 30 min.
11. Alonso Botero
Scalar field theory regularization scheme using weak values. — 30 min.

**Mini-workshop on Highly Ionising Avatars of New Physics
(Room 3, 11:30)**

1. Anna Polmann
IceCube Searches for Magnetic Monopoles. — 30 min.
2. James Pinfold
The MoEDAL Experiment at the LHC - Status Report and Plans. — 30 min.
3. Vicente Vento Torres
Signatures of magnetic monopoles. — 30 min.
4. Kazuki Sakurai
Long-lived particle searches at MoEDAL. — 30 min.

Lunch. 13:30 – 15:00

5. Igor Ostrovskiy
Searching for magnetic monopoles with Solid State Breakdown Counters: from LHC to Space. — 30 min.

**Parallel Section C Quantum Physics
(Room 4, 11:00)**

1. Souradeep Sasmal
A tighter steering criterion using the Robertson-Schrödinger uncertainty relation. — 30 min.
2. Vladimir Shevchenko
Quantum measurements in finite space-time domain. — 30 min.
3. Sven Ahrens
Spin transfer and entanglement in Compton scattering. — 30 min.
4. Ikram Jaouadi
FPGA implementation of quantum cryptography algorithm. — 30 min.
5. Vladimir Filinov
Quantum dynamics of charged fermions in the Wigner formulation of quantum mechanics. — 30 min.

Lunch. 13:30 – 14:30

6. Piergiorgio Cerello
Online Range Monitoring in Particle Therapy Treatments. — 20 min.
7. Poonam Jain
Delta I = 2 staggering in triaxial superdeformed bands. — 20 min.
8. George Livadiotis
Evidence of large-scale quantization constant in plasmas. — 20 min.

Coffee Break. 16:00 – 16:30

9. Thiago Guerreiro
Table-top high-energy quantum physics. — 30 min.
10. Dmitry Karlovets
Relativistic electron vortices beyond the paraxial approximation. — 30 min.
11. Michael Skotiniotis
Identification of malfunctioning quantum devices. — 30 min.

**Workshop on Future of Fundamental Physics
(Room 1, 15:00)**

1. Falk Hans Braunnmuller
*Overview and first results of the advanced acceleration experiment
AWAKE at CERN.* — 30 min.
2. Francesco Renga
*The quest for $\mu \rightarrow e\gamma$ and its experimental limiting factors at
future high intensity muon beams.* — 30 min.

Coffee Break. 16:00 – 16:30

3. Vladimir Druzhinin
Experiment on study of dimuonium properties in Novosibirsk. — 30 min.
4. Evangelos Gkougkousis
*ATLAS and CMS prospects for Higgs measurements and searches
at the High Luminosity LHC .* — 30 min.

5. Walter Marcello Bonivento
The SHiP experiment at CERN. — 30 min.

**Parallel Section C Quantum Physics
(Room 3, 16:30)**

1. Sven Ahrens
Gravitational deflection of X-ray superradiance. — 30 min.
2. Lauro Tomio
*Solitons in atomic condensates with tunable spin-orbit coupling
and time-dependent Raman frequency.* — 30 min.
3. Vesna Berc
Configurational entropy of multilayered graph states. — 30 min.

Round table (Room 1, 18:30 – 20:00)

Conference Dinner (20:00 – 23:30)

Thursday, July 12

Plenary Session (Room 1, 08:30)

1. Vasiliki Mitsou
Searches for magnetic monopoles: a review. — 30 min.
2. Avshalom Elitzur
Can a particle be where it never went? - some recent surprising predictions. — 30 min.
3. Eliahu Cohen
Quantum Entanglement - New Theoretical Results and forthcoming Experiments. — 30 min.
4. Sandu Popescu
TBA. — 30 min.

Main Conference Section (Room 1, 11:00)

1. Zhi-zhong Xing
Spontaneous mu-tau symmetry breaking in neutrino phenomenology. — 30 min.
2. Dean Karlen
Latest results from the T2K neutrino experiment. — 30 min.
3. Jaroslaw Andrzej Nowak
The Short Baseline Neutrino Program at Fermilab. — 30 min.
4. Yuuki Nakano
Highlight talk from Super-Kamiokande. — 30 min.
5. Christian Farnese
The ICARUS experiment. — 30 min.

Lunch. 13:30 – 15:00

6. Masahiro Takeda
Observation of extremely high energy cosmic rays with the Telescope Array experiment. — 30 min.

7. Dariusz Gora
The Pierre Auger Observatory: review of latest results and perspectives. — 30 min.

Coffee Break. 16:00 – 16:30

8. Dmitry Gorbunov
Dark Matter and Baryon asymmetry production during inflation. — 30 min.
9. Albert De Roeck
Searches for Long Lived Particles: Status and new ideas. — 30 min.
10. Closing of the conference — 30 min.

Workshop on Quantum Foundations and Quantum Information (Room 2, 11:00)

1. Avishy Carmi
Multiplicative Bell inequalities. — 30 min.
2. Arun Pati
Stronger Uncertainty and Reverse Uncertainty Relations. — 30 min.
3. Lorenzo Maccone
A fundamental problem in quantizing general relativity. — 30 min.
4. Ivan Horvath
A Different Angle on Quantum Uncertainty. — 30 min.

Lunch. 13:00 – 14:30

5. Bengt E Y Svensson
Some question marks surrounding quantum-mechanical weak values. — 30 min.
6. Daniel Sheehan
Experimental Tests of Supradegeneracy and the Second Law of Thermodynamics. — 30 min.

7. Keun young Kim
Complexity in quantum field theory and gravity. — 30 min.

Coffee Break. 16:00 – 16:30

8. Hyunseok Jeong
Quantification and unification of quantum macroscopicity, coherence, and nonclassicality. — 30 min.
9. Giuseppe Castagnoli
Merging quantum computation and the foundations of quantum mechanics. — 30 min.
10. Vitalie Eremeev
The power of a control qubit in weak measurements. — 30 min.

**Mini-workshop on Highly Ionising Avatars of New Physics
(Room 3, 11:00)**

1. Gordon Semenoff
Entanglement and the Infrared. — 30 min.
2. Sarben Sarkar
Regularised Kalb-Ramond Magnetic Monopole with Finite Energy. — 30 min.
3. Stephanie Baines
General Treatment of the Monopole Production Cross Sections by Drell-Yan and Photon Fusion for Three Spin Models. — 30 min.
4. Albert De Roeck
Searches for Heavy Neutral Leptons at the LHC. — 30 min.
5. Judita Mamuzic
Searches for Highly-ionising Particles with ATLAS and CMS. — 30 min.

Lunch. 13:30 – 15:00

6. Arka Santra
Photon fusion production mechanism of magnetic monopoles: a study with MadGraph. — 30 min.

7. Stanislav Pospisil
About use of Timepix3 pixel detectors for real time tracking and recognition of highly ionizing particles and a possible investigation of their behavior in semiconductor sensors. — 30 min.

**Parallel Section C Quantum Physics
(Room 5, 11:00)**

1. Oleg Sushkov
The spin liquid phase of the t - J model and the origin of hour-glass and wine-glass magnetic dispersions in underdoped cuprate superconductors. — 30 min.
2. Veronika Baumann
On Formalism and Interpretations. — 30 min.

Break. 12:00 – 12:30

3. Noah Gladstein
Using the Quantum Pigeonhole Paradox to Study Joint Measurements. — 30 min.
4. Debasis Mondal
An authentication protocol based on polygamous nature of quantum steering. — 30 min.

Lunch. 13:30 – 15:00

5. David H. Oaknin
An explicit local statistical model of hidden variables for the Bell's polarization states. — 30 min.
6. Gabriele Bigongiari
CaloCube: a new approach to calorimetry in space based experiments for high-energy cosmic rays. — 30 min.

**Workshop on Quantum Foundations and Quantum
Information (Room 5, 17:00)**

1. Mohammed Sanduk
Is there physics underlying the relativistic quantum mechanics? — 30 min.

Thursday, July 12

2. Michael Skotiniotis
Macroscopic Superpositions Require tremendous measurement devices. — 30 min.
3. Geng Chen
Heisenberg-limited measurement of single photon Kerr nonlinearity. — 30 min.

Classical music (18:30 – 20:00)

Concert "Sacred Music" (21:30 – 22:30)

Participants of Poster Session
July 9, 19:30–20:30

Fausto Casaburo

Detection of primary photons in high energy cosmic rays using Cherenkov imaging and surface detectors

Lino Miramonti

Neutrino physics and astrophysics with the JUNO detector

Tanwi Bandyopadhyay

Bouncing Universe in the Contexts of Generalized Cosmic Chaplygin Gas and Variable Modified Chaplygin Gas

Udayanandan K M

Boson Condensation using Uchats cluster expansion

Poonam Jain

Prediction of band head spin and identical bands in superdeformed nuclei

Corwin Knight; Matthew Szydagis; Cecilia Levy

Snowball Chamber: A Super-cooled Approach to Dark Matter Detection

Antonios Leisos

Hybrid Detection of High Energy Extensive Air Showers in Urban Environments

Apostolos Tsirigotis

Cosmics: low cost Educational Cosmic Ray Telescope.

**Jorge Alejandro Bernal Arroyo; Andrs Camilo Granda Arango;
Kevin Giovanni Hernandez Beltrn**

Application of an extension of the Bohr Correspondence Principle to the Klein-Gordon and Dirac equations.

Tapashi Das; Dilip Kumar Choudhury

Charge radii and decay constant of heavy flavored mesons in an improved perturbative approach

Alexandros Marantis

The ATLAS FastTracKer

debarshi das

Cost of Einstein-Podolsky-Rosen steering in the context of extremal boxes

Christian Farnese

Atmospheric neutrino search in the ICARUS T600 detector

Gopinath Kamath

A planar Runge - Lenz vector. II

Dariusz Gora; for the CREDO Collaboration ,

Cosmic Ray Extremely Distributed Observatory: status and perspectives

Kai Sun

Experimental quantification of asymmetric Einstein-Podolsky-Rosen steering

Mina Katramatou

Measurement of the Nucleon F_2^n/F_2^p and Quark d/u Ratios with Inelastic Electron Scattering from the $A=3$ Nuclei (MARATHON JLab Experiment)

Gerassimos Petratos

JLab Measurements of Elastic Electron Scattering from the Few-Body Nuclei

Andrea Lavagno

Strangeness instability in asymmetric nuclear matter

Spyridon Margetis

Tracking Challenges and Novel Approaches in High Energy and High Track Density Environments

Oleksandr Vitiuk

Directed Flow in nucleus-nucleus collisions at BES RHIC and Equation of State

Sonia Kabana and Peter Minkowski

Early universe. QCD phase transition and Dark quark stars

Programme of Welcome Concert
July 5, 21:20 – 22:30

Johannes Brahms

The Cello Sonata No. 2 in F major, Op. 99, (1886) in four movements:

- I. Allegro vivace
- II. Adagio affettuoso in F major
- III. Allegro passionato in F minor
- IV. Allegro molto

Claude Debussy

Sonata for violin and piano, L. 148 (140) (1916-1917) in three movements:

- I. Allegro vivo
- II. Intermd. Fantastique et lger
- III. Finale. Trs anim

Franz Schubert

The Trio No. 2 in E-flat major for piano, violin and cello, OD. 929, (1827)
in 4 movements:

- I. Allegro
- II. Andante con moto
- III. Scherzo: Allegro moderato
- IV. Allegro moderato

**Programme of Classical Music Concert
July 6, Chania**

J.S. Bach, Prelud in E-dur for violin solo
Svetlana Nor (violin)

J.S. Bach, Menuet in G-dur for cello solo
Vladimir Nor (cello)

J.S. Bach, Sarabanda, D-moll
Svetlana Nor (violin)

J.S. Bach, Prelud in D-dur for cello solo
Vladimir Nor (cello)

J.S. Bach, Aria for cello and violin
Svetlana Nor (violin) and Vladimir Nor (cello)

**Programme of Concert of Classical Music
July 9, 21:20 – 22:30**

Sergei Rachmaninov

Melody Op. 21, N 9, D major, for cello and piano

Vladimir Nor (cello), Ruben Muradyan (piano)

Pyotr Tchaikovsky

Pezzo capriccioso, in B-minor, Op. 62, for cello and piano (1882)

Vladimir Nor (cello), Ruben Muradyan (piano)

Alexander Glazunov

Grand Adagio from "Raymonda" ballet

Svetlana Nor (violin), Ruben Muradyan (piano)

Henri Vieuxtemps

Fantasy on "The Nightingale" by Alyabyev, G minor, Op. 24

Svetlana Nor (violin), Ruben Muradyan (piano)

Pyotr Tchaikovsky

Trio in A minor for piano, violin, and cello, Op. 50 (1882)

In memory of a great artist I. Pezzo elegiaco
(Moderato assai Allegro giusto) (in A minor) (20:00)

Svetlana Nor (violin), Vladimir Nor (cello), Ruben Muradyan (piano)

Sergei Rachmaninov

Vocalise, Op.34 No.14

Vladimir Nor (cello), Ruben Muradyan (piano)

Programme of Opera Gala
July 10, 21:00

Douglas Moore (1893-1969)

Aria of Elisabeth-Baby Doe: The silver aria, from the opera The Ballad of Baby Doe

Vincenzo Bellini (1801-1835)

Aria of Norma: Casta Diva from the opera Norma

Claude Debussy (1862-1918)

La plus que lente for piano solo

Giuseppe Verdi (1813-1901)

Scene and Aria of Violetta: strano..., sempre libera from the opera La Traviata

Claude Debussy (1862-1918)

Clair de lune for piano solo

Giuseppe Verdi (1813-1901)

Aria of Fiorilla : Non si d follia maggiore from the opera il Turco in Italia

Claude Debussy (1862-1918)

La cathdrale egloutie for piano solo

George Gershwin (1898-1937)

Aria of Clara: Summertime from the opera Porgy and Bess

Giancarlo Menotti (1911-2007)

Aria of Lucy: Hello hello, from the opera The Telephone

Programme of Concert "Sacred Music"
July 12, 21:00

Cludio Monteverdi (1567-1643)

Selva morale e spirituale: Il pianto della Madonna SV288

Maurice Ravel (1875-1937)

From Deux mlodies hbraques

Kaddish

Unknown composer

Christos Anesti Christ is risen

Max Janowski (1912-1991)

Arrangement of Avinu Malkeinu

Maurice Ravel (1875-1937)

L bas, vers leglise From the Cinq Mlodies populaires grecques

Sergei Rachmaninoff (1873-1943)

Arrangement of: the Virgin Mary

Pietro Mascagni (1863-1945)

Ave Maria from the opera Cavalleria Rusticana

W. A. Mozart (1756-1791)

Alleluja from the mottetto Exsultate Jubilate