

Session Program

30 August 2022 to 12 September 2022



XI International Conference on New Frontiers in Physics

Cosmology, Astrophysics, Gravity, Mathematical Physics

Conference venue: OAC conference center, Kolymbari, Crete, Greece. The conference will take place in Crete in physical form, however participation is also possible via internet

Wednesday 31 August

09:30

Cosmology, Astrophysics, Gravity, Mathematical Physics

Session | Location: Room 1

09:30–10:00

Cosmology, fundamental physics and Multi-Messenger Astrophysics with Gamma-Ray Bursts

Speaker

Lorenzo Amati

10:00–10:30

Instantons: thick-wall approximation

Speaker

Prof. Alexander Sorin

10:30

15:30

Cosmology, Astrophysics, Gravity, Mathematical Physics

Session | Location: Room 2

15:30–15:50

The DarkSide-20k experiment: status and scientific program

Speaker

Francesco Di Capua

15:50–16:10

Latest results from the CUORE experiment

Speaker

Guido Fantini

16:10–16:30

The KDK Experiment: A Measurement of 40K for Rare-Event Searches and Geochronology

Speaker

Lilianna Hariasz

16:30–16:50

Discovering Neutrinoless Double-Beta Decay in Ge-76 with the LEGEND Experiment

16:50

Thursday 1 September

09:00

Cosmology, Astrophysics, Gravity, Mathematical Physics

Session | Location: Room 1

09:00–09:30 **Quantum gravity on finite spacetimes and dynamical mass**

Speaker

Shahn majid

09:30

15:50

Cosmology, Astrophysics, Gravity, Mathematical Physics

Session | Location: Room 1

16:10–16:30 **AEgIS Phase 2: upgrades and first data**

Speaker

Marco Volponi

16:50

15:50

Cosmology, Astrophysics, Gravity, Mathematical Physics

Session | Location: Room 3

15:50–16:10 **Multi-messenger studies with the Pierre Auger Observatory**

Speaker

Dr Viviana Scherini

16:10–16:30 **First Results of XENONnT**

Speaker

Kexin Liu

16:30

Friday 2 September

10:00

Cosmology, Astrophysics, Gravity, Mathematical Physics

Session | Location: Room 1

10:00–10:30

The CNO measurement and its role in the stars and the Sun physics

Speaker

Marco Giammarchi

10:30

12:40

Cosmology, Astrophysics, Gravity, Mathematical Physics

Session | Location: Room 1

12:40–13:00

Towards Phase II of the Pierre Auger Observatory - AugerPrime

Speaker

Dr Paula Gina Isar

13:00

Monday 5 September

11:50

Cosmology, Astrophysics, Gravity, Mathematical Physics

Session | Location: Room 1

11:50–12:10

The link between the highest-energy cosmic rays and particle physics at the LHC

Speaker

Maximilian Reininghaus

12:10

15:30

Cosmology, Astrophysics, Gravity, Mathematical Physics

Session | Location: Room 4

15:30–15:50

The iron and nickel spectra measured with CALET on the International Space Station

Speaker

FRANCESCO STOLZI

15:50–16:10

The NEWSdm experiment for directional dark matter searches

Speaker

Andrey Alexandrov

16:10

15:30

Cosmology, Astrophysics, Gravity, Mathematical Physics

Session | Location: Room 3

15:30–15:50

Expected performance and first results of the Radio Detector of the Pierre Auger Observatory

Speaker

Marvin Gottowik

15:50

16:30

Cosmology, Astrophysics, Gravity, Mathematical Physics

Session | Location: Room 4

16:30–16:50

Inflating and Reheating the Universe with an Independent Affine Connection

Speaker

Prof. Alberto Salvio

16:50

Tuesday 6 September

09:00

Cosmology, Astrophysics, Gravity, Mathematical Physics

Session | Location: Room 1

09:00–09:30

Constraints on the Hubble parameter H_0 with gravitational-waves events from the third observing run of LVK

Speaker

Grégoire PIERRA

09:30–10:00

Gravitational waves over arbitrary background

Speaker

Alexander Dolgov

10:00

15:30

Cosmology, Astrophysics, Gravity, Mathematical Physics

Session | Location: Room 3

15:30–15:50

The QCD axion at finite temperature and density

Speaker

Zhao Zhang

15:50–16:10

Dark Matter Axions in the Early Universe with a Period of Increasing Temperature

Speaker

Jacek Osinski

16:10–16:30

The SABRE South Experiment at the Stawell Underground Physics Laboratory

Speaker

Peter McNamara

16:30–16:50

Muon measurements at the Pierre Auger Observatory

Speaker

Eva Santos

16:50

15:30

Cosmology, Astrophysics, Gravity, Mathematical Physics

Session | Location: Room 4

15:30–15:50

Automatic alignment technique for the squeezing system in Advanced Virgo Plus (AdV+)

Speaker

Barbara Garaventa

15:50–16:10

Searches for anisotropies in the arrival directions of Ultrahigh Energy Cosmic Rays

Speaker
Rogerio Menezes De Almeida

16:10–16:30

Deep-Learning based Reconstruction of the Depth of Shower Maximum and Muon Shower Content using the Water-Cherenkov Detectors of the Pierre Auger Observatory

Speaker
Niklas Langner

16:30–16:50

Very Special Linear Gravity: A Gauge-Invariant Graviton Mass

Speaker
JORGE ALFARO

16:50

16:30

Cosmology, Astrophysics, Gravity, Mathematical Physics

Session | Location: Room 1

16:30–16:50

Probing light Dark Matter with CRESST-III experiment

Speaker
Margarita Kaznacheeva

16:50

Wednesday 7 September

09:00

Cosmology, Astrophysics, Gravity, Mathematical Physics

Session | Location: Room 1

09:00–09:25 **Antimatter in the world. State of art.**

Speaker

Alexander Dolgov

09:25

15:30

Cosmology, Astrophysics, Gravity, Mathematical Physics

Session | Location: Room 4

15:30–15:50 **Soliton solutions in supergravity**

Speaker

ANTONIO GALLERATI

15:50–16:10 **Cosmological Fluctuations in Delta Gravity**

Speaker

JORGE ALFARO

16:10–16:30 **The DARKSIDE-20k neutron veto**

Speaker

Daria Santone

16:30–16:50

Chiral effects from non-equilibrium left-handed neutrinos in core-collapse supernovae

Speaker

Di-Lun Yang

16:50

16:10

Cosmology, Astrophysics, Gravity, Mathematical Physics

Session | Location: Room 3

16:10–16:30 **The present status of the LAG experiment**

Speaker

Luciano Di Fiore

16:30

Friday 9 September

09:25

Cosmology, Astrophysics, Gravity, Mathematical Physics

Session | Location: Room 1

09:25–09:50

Matter under extreme conditions in neutron stars and their mergers

Speaker

David Blaschke

09:50

09:50

Cosmology, Astrophysics, Gravity, Mathematical Physics

Session | Location: Room 1

09:50–10:10

Highlights from the Pierre Auger Observatory

Speaker

Alexey Yushkov

10:10

11:20

Cosmology, Astrophysics, Gravity, Mathematical Physics

Session | Location: Room 4

11:20–11:40

New SiPM technology for light detection in DarkSide-20k

Speaker

Lucia Consiglio

11:40–12:00

The Sardinian site candidate to host the Einstein Telescope

Speaker

Davide Rozza

12:00

Monday 12 September

15:40	<p>Cosmology, Astrophysics, Gravity, Mathematical Physics Session Location: Room 2</p> <p>15:40–16:00 Does the Weyl invariant based proposal provide an accurate description of gravitational entropy?</p> <p>Speaker Vaibhav Kalvakota</p>
16:00	<p>Cosmology, Astrophysics, Gravity, Mathematical Physics Session Location: Room 3</p> <p>16:00–16:20 Results and Prospects of the Hellenic Open University air shower array</p> <p>Speaker Dr Stavros Nonis</p>
16:00	<p>16:20–16:40 The Tadpole Problem</p> <p>Speaker Iosif Bena</p>
16:40	<p>16:40–17:00 Early Universe Quark-Hadron Transition Using a Phenomenological Quasi-Particle Model</p> <p>Speaker Yogesh Kumar</p>
17:00	<p>Cosmology, Astrophysics, Gravity, Mathematical Physics Session Location: Room 1</p> <p>16:40–17:00 Entropy of an Unruh source and Schwarzschild black hole</p> <p>Speaker Maksym Teslyk</p>
17:00	<p>Cosmology, Astrophysics, Gravity, Mathematical Physics Session Location: Room 2</p> <p>17:00–17:20 Approaching the Einstein's everlasting dream; unification of general relativity and quantum mechanics</p> <p>Speaker Abdel Nasser Tawfik</p>
17:20	