

## **Session Program**

**22 June 2025 to 3 July 2025**



## **Carpathian Summer School of Physics 2025**

### ***Morning Session***

Sinaia, Romania

Hotel International\*\*\*\* 1st. Avram Iancu Street, Sinaia 106100, Romania

Monday 23 June

09:00

Morning Session: Opening and Session 1

Session | Location: Sinaia, Romania, Hotel International\*\*\*\* 1st. Avram Iancu Street, Sinaia 106100, Romania | Convener: Dan Cozma

09:00–09:10 Opening

Speaker  
Dan Cozma

09:10–09:55  
Horia Hulubei National Institute for R&D in Physics and Nuclear Engineering

Speaker  
Mihai Radu

09:55–10:50 Nuclear astrophysics introduction

Speaker  
Prof. Xiaodong Tang

10:50–11:10 Coffee Break

11:10–12:05 Solid-State Physics at ISOLDE-CERN

Speaker  
Dr Juliana Schell

12:05–13:00  
Recent gamma-ray spectroscopy studies at the ROSPHERE array: The physics case of <sup>32</sup>Si

Speaker  
Razvan Lica

13:00

## Tuesday 24 June

09:00

### Morning Session: Small accelerators (I)

**Session** | **Location:** Sinaia, Romania, Hotel International\*\*\*\* 1st. Avram Iancu Street, Sinaia 106100, Romania | **Convener:** Ion Burducea

09:00–09:55

#### Ion Beam Modification and Analysis in Contemporary Materials Research

##### Speaker

Dr Stefan Facsko

09:55–10:50

#### Advances in ionization-induced annealing of pre-existing defects in semiconductors

##### Speaker

Gihan Velisa

10:50–11:10

#### Coffee break

11:10–12:05

#### Generation of Defects in Solids by Radiation, Their Role in Determining Material Properties, and Introduction to Experimental Techniques for Characterizing

##### Speaker

Joseph Graham

12:05–13:00

#### Gamma Spectroscopy of Natural Radionuclides: techniques and instrumentation

##### Speaker

Yuri Venturini

13:00

## Wednesday 25 June

09:00

### Morning Session: Nuclear Structure

**Session** | **Location:** Sinaia, Romania, Hotel International\*\*\*\* 1st. Avram Iancu Street, Sinaia 106100, Romania | **Convener:** Catalin Borcea

09:00–09:55

#### Quadrupole-octupole dynamics in atomic nuclei

**Speaker**

Radu Budaca

09:55–10:50

#### Photoneutron reactions in the GDR region: cross sections and average neutron energies

**Speaker**

Ioana Gheorghe

10:50–11:10

#### Coffee break

11:10–12:05

#### From Virtual Photons to Nuclear Deformation: The Harsh Elegance of Coulomb Excitation

**Speaker**

Ştefana Călinescu

12:05

## Thursday 26 June

09:00

### Morning Session: Nuclear structure and Nuclear Astrophysics

**Session** | **Location:** Sinaia, Romania, Hotel International\*\*\*\* 1st. Avram Iancu Street, Sinaia 106100, Romania | **Convener:** Xiaodong Tang

09:00-09:55

#### Nuclear Matter Equation of States - Constraints from Heavy Ion Collisions at GSI / FAIR

##### Speaker

Yvonne Leifels

09:55-10:50

#### Experimental Tools for Laser and Gamma-Beam Driven Nuclear Astrophysics

##### Speaker

Giovanni Luca Guardo

10:50-11:10

#### Coffee break

11:10-12:05

#### Indirect Methods for Nuclear Astrophysics Studies

##### Speaker

Aurora Tumino

12:05-13:00

#### Probing nuclear structure by emission processes

##### Speaker

Doru Delion

13:00

## Friday 27 June

09:00

### Morning Session: Nuclear Astrophysics (I)

**Session** | **Location:** Sinaia, Romania, Hotel International\*\*\*\* 1st. Avram Iancu Street, Sinaia 106100, Romania |  
**Convener:** Aurora Tumino

09:00-09:55

#### Probing Stellar Reactions with MUSIC: Advancing Nuclear Astrophysics through Active-Target Detection

**Speaker**

Eilens Lopez Saavedra

09:55-10:50

#### R-matrix reaction rate calculations

**Speaker**

James deBoer

10:50-11:10

#### Coffee break

11:10-12:05

#### Insights into Nuclear Astrophysics Through Analyzing Isotope Ratios of Presolar Grains

**Speaker**

Nan Liu

12:05-13:00

#### Precise Nuclear Astrophysics Experiments in the Multi-Messenger Era - Institute of modern physics

**Speaker**

Xiaodong Tang

13:00

Saturday 28 June

09:00

Morning Session: Outreach Day

Session | Location: Sinaia, Romania, Hotel International\*\*\*\* 1st. Avram Iancu Street, Sinaia 106100, Romania | Convener: Livius Trache

09:00-09:55 The European project EURO-LABS

Speaker  
Navin Alahari

09:55-10:50 The search for superheavy elements in nature and in the laboratory

Speaker  
Walter Kutschera

10:50-11:10 Coffee break

11:10-12:05 Nuclear physics - driving force of the Universe

Speaker  
Karlheinz Langanke

12:05-13:00 Atomic nuclei in the cosmos

Speaker  
Roland Diehl

13:00

# Monday 30 June

09:00

## Morning Session: Exotic nuclei

**Session** | **Location:** Sinaia, Romania, Hotel International\*\*\*\* 1st. Avram Iancu Street, Sinaia 106100, Romania | **Convener:** Prof. Mihai Petrovici

09:00–09:55 **Electric Giant Resonances: Past, Present and Future**

**Speaker**  
Muhsin Harakeh

09:55–10:50 **Central Heavy-Ion Collisions**

**Speaker**  
Pawel Danielewicz

10:50–11:10 **Coffee break**

11:10–12:05 **TBA**

**Speaker**  
Isao Tanihata

12:05–13:00 **The Electron Ion Collider as a Probe of Nuclear Structure**

**Speaker**  
Carlos Bertulani

13:00



## Tuesday 1 July

09:00

### Morning Session: Nuclear Astrophysics (II)

**Session** | **Location:** Sinaia, Romania, Hotel International\*\*\*\* 1st. Avram Iancu Street, Sinaia 106100, Romania | **Convener:** James deBoer

09:00–09:55

#### Nuclear Astrophysics in Underground: the LUNA experiment

##### Speaker

Antonio Caciolli

09:55–10:50

#### Cosmogenic isotopes in environmental science

##### Speaker

László Palcsu

10:50–11:10

#### Coffee break

11:10–12:05

#### The Explosion... The Explosion... The Explosion of Classical and Recurrent Novae

##### Speaker

Jordi José

12:05–13:00

#### Numerical models of rotating neutron stars

##### Speaker

Jerome Novak

13:00

## Wednesday 2 July

09:00

### Morning Session: Nuclear Physics from High to Low

**Session** | **Location:** Sinaia, Romania, Hotel International\*\*\*\* 1st. Avram Iancu Street, Sinaia 106100, Romania | **Convener:** Adriana R. Raduta

09:00-09:55

#### "QCD Challenges"

**Speaker**

Mihai Petrovici

09:55-10:50

#### The Nuclear Two-Photon Decay

**Speaker**

Wolfram Korten

10:50-11:10

#### Coffee break

11:10-12:05

#### The search for live interstellar radionuclides using accelerator mass spectrometry

**Speaker**

Dominik Koll

12:05-13:00

#### Alternative methods to determine neutron-induced inelastic cross sections

**Speaker**

Alexandru Negreț

13:00