

Nuclear Physics in Astrophysics XI (NPA XI) conference

Dresden, Germany, 15-20 September 2024

<https://events.hifis.net/e/NPA-XI>



Final circular, dated 20 August 2024

The 11th edition of the Nuclear Physics in Astrophysics conference series will take place in Dresden, Germany, from 15.-20.09.2024. The conference is organized under the auspices of the Nuclear Physics Board of the European Physical Society.

Scientific scope

The Nuclear Physics in Astrophysics XI (NPA XI) conference addresses the field of nuclear astrophysics as a whole. Scientific topics include:

- Cosmology and Big Bang
- Early stars and galaxies
- Hydrostatic stellar burning
- Explosive processes, jets, γ -ray bursts
- Cosmochemistry
- p-, v-, rp-process nucleosynthesis
- Neutron stars, mergers, gravitational waves
- Astrophysical s-process
- Astrophysical r- and i-processes
- New tools and techniques, data formats, and open access

Scientific Advisory Board

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Giuseppe Verde, INFN Catania, Italy

Confirmed Invited Speakers

Philip Adsley, Texas A&M, USA: Indirect experimental approaches to charged particle reactions in astrophysics.
Anish Amarsi, Uppsala, SE: Stellar abundances with 3D model atmospheres
Almudena Arcones, Technische Universität Darmstadt, Germany: Origin of the heavy elements - theory status
Carlo Bruno, University of Edinburgh, UK: Reactions with stored nuclei
Artur Choplin, Université de Bruxelles, BE: Impact of nuclear physics parameters on i-process simulations in AGB stars
Richard deBoer, University of Notre Dame, USA: Neutron sources in stars
Tim Dietrich, University of Potsdam, Germany: Multi-messenger constraints on the neutron-star equation of state and the Hubble constant
Cesar Domingo Pardo, CSIC University of Valencia, Spain: Neutron capture reaction rates for s-process nucleosynthesis
Anthea Fantina, GANIL, France: Nuclear physics constraints on the equation of state
Anna Frebel, MIT, USA: Galactic Archaeology
Stephan Fritzsche, Helmholtz Institute Jena, Germany: Atomic physics data for kilonova modelling
Jan Glorius, GSI Darmstadt, Germany: Study of proton-induced reactions at the ESR
Sébastien Guillot, IRAP Toulouse, FR: Recent results from NICER
Günther Hasinger, German Center for Astrophysics, TU Dresden, Germany: The New German Center for Astrophysics (DZA)
Brynmor Haskell, Nicolaus Copernicus Astronomical Center Warsaw (Poland), Poland: Probing high density physics in the gravitational wave astronomy era
Michèle Heurs, Hannover, DE: Gravitational Wave Astronomy
Erin Higgins, Armagh Observatory, UK: Stellar evolution and very massive stars

Heshani Jayatissa, Los Alamos National Lab, USA: Stellar nucleosynthesis in explosive environments

Beatriz Jurado, LP2I, Bordeaux, FR: Surrogate-reaction approach for studying fission of stored ion beams for astrophysics

Dominik Koll, Technische Universität Dresden, Germany: Accelerator mass spectrometry of Fe-60 and Pu-244

Gavin Lotay, University of Surrey, UK: Nuclear physics and X-ray bursts

Sébastien Martinet, Université Libre de Bruxelles, Belgium: Evolution of stars

Denise Piatti, INFN Padova, IT: The $^{12,13}\text{C}(p,\gamma)^{13,14}\text{N}$ reactions

Marco Pignatari, Konkoly CSFK, HU: Impact of stellar yields on galactic chemical evolution

David Rapagnani, University of Naples, Italy: Nuclear astrophysics at LUNA and LUNA-MV

Stephan Rosswog, University of Hamburg, DE: Neutron star mergers and nucleosynthesis

Asa Skuladottir, Florence, IT: Abundance observations and neutron capture nucleosynthesis

Roberta Spartà, INFN Laboratori del Sud, Catania, Italy: Trojan Horse measurements for nuclear astrophysics

Else Starkenburg, Kapteyn Astronomical Institute, Netherlands: Chemically pristine stars in the Milky Way

John Tomsick, Space Sciences Laboratory, Berkeley, USA: Compton Spectrometer and Imager - science case and plans

Reto Trappitsch, EPFL Lausanne, Switzerland: Signatures of stellar nucleosynthesis in meteorites

Sophie Van Eck, Bruxelles, BE: Carbon enhanced metal poor stars

Meng Wang, IMP Lanzhou, China: Bp-defined Isochronous Mass Spectrometry at the CSRe

Mathis Wiedeking, University of the Witwatersrand, South Africa: Extracting model-independent nuclear level densities away from stability

Matthew Williams, University of Surrey, UK: Nuclear astrophysics at TRIUMF

Venue

The conference will take place on the campus of Technische Universität Dresden (TU Dresden), close to the center of Dresden.

Dresden, Germany, is a city of 500,000 and the regional capital of Saxony (Germany). It is known for its historically reconstructed city center including castles, museums, and the Church of Our Lady (Frauenkirche), and for its scenic surroundings called "Saxon Switzerland".

Dresden can be reached by air (international airport Dresden with many connections with changeover in Frankfurt or Munich), by train from Berlin or Frankfurt, or by long-range bus from many cities in Europe.

Lunch will be taken in the [cafeteria of TU Dresden, Mommsenstr. 13](#). For registered participants, the organizers will provide lunch tickets for each day of the conference they will attend.

Scientific program (Overview)

The [full scientific program](#) is available at the conference web page.

Sunday 15.09.	18:30 Welcome Reception at the conference site
Monday 16.09.	08:45 Opening of the conference Early Universe 1, Neutron Capture Processes 1 Neutron Capture Processes 2, Neutron Stars 1 Hydrostatic stellar burning 1 Dense matter 1, New Tools and Techniques 1 18:30 University Beer and Snacks Poster Viewing Session
Tuesday 17.09.	08:45 Explosive Processes 1 New Tools and Techniques 2, Big Bang Nucleosynthesis 1 Cosmochemistry and Galactic Chemical Evolution 1 Neutron Capture Processes 2 18:30 Public Evening Lecture (in German)
Wednesday 18.09.	08:45 Neutron Capture Processes 4, New Tools and Techniques 3 New Tools and Techniques 4 14:00 Excursion by steamboat to Pillnitz Castle 18:45 Social Dinner on the steamboat
Thursday 19.09.	08:45 Cosmochemistry and Galactic Chemical Evolution 2 Gravitational Waves Neutron stars 2, Explosive Processes 2 Neutron stars 3, New Tools and Techniques 5 Neutron stars 4, Explosive Processes 3
Friday 20.09.	08:45 Hydrostatic stellar burning 2 Explosive Processes 4, Neutron Capture Processes 5 13:00 Closing of the conference

Poster instructions

Posters should be printed on A0 size paper (841 × 1189 mm) or smaller size but fitting this envelope and brought to the conference desk upon registration. If you need suggestions where to print your poster locally in Dresden: In walking distance of the conference venue, there are [Copy Cabana](#) and [Fontanum](#), for example.

The posters will be put up by the organizers and will remain on display in the foyer of the lecture hall until the morning of the last day of the conference.

In addition, each participant will have the chance to upload two PDF documents on the indico page of the conference:

1. a PDF version of the poster itself. This should include the abstract ID.
2. a one-slide poster pitch, also as PDF, to be presented in the plenary session, again including the abstract ID.

Each poster presenter will be given a chance to present their work in a one-minute poster pitch in the plenary session. During this pitch, their one-slide summary will be displayed. Please, upload the poster pitch as a PDF file to the indico page, or send it by e-mail to npa-xi@tu-dresden.de.

Registration

The conference registration is open. For individual members of the European Physical Society (EPS) and of recognized national physical and astronomical societies, the registration fee is 450 €. For PhD students and young postdocs (PhD+2), a reduced fee of 200 € is applied. Full details on the fee structure and reductions are available on the conference web site.

Financial support is available for selected participants and may be requested by contacting the organizers.

European Physics Journal A Topical Collection “Nuclear Physics in Astrophysics”

On the occasion of the conference, the European Physical Journal A has opened a Topical Collection called “Nuclear Physics in Astrophysics”, lead editor David Blaschke (University of Wroclaw), under a closed call for contributions. Selected conference participants and other eminent scientists have been invited by the Topical Collection editor to contribute.

We look forward to welcoming you to Dresden!

20.08.2024

NPA-XI@tu-dresden.de

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Marie Pichotta, Kai Zuber (TU Dresden, Germany)

David Blaschke, Oleksii Ivanytskyi (University of Wroclaw, Poland)

Cristina Chiappini, Matthias Steffen (Leibniz-Institut für Astrophysik Potsdam,
Germany)

Jenny Feige (Museum für Naturkunde Berlin, Germany)

Günther Hasinger, Maël Gonin (Deutsches Zentrum für Astrophysik Görlitz, Germany)

