ECT*
EUROPEAN CENTRE
FOR THEORETICAL STUDIES
IN NUCLEAR PHYSICS AND RELATED AREAS

FONDAZIONE
BRUNO KESSLER

DTP/TALENT TRAINING SCHOOL

Trento, 15 July - 2 August 2024

Training in Advanced Low Energy Nuclear Theory

Nuclear theory for astrophysics

Organizers

Almudena Arcones (TU Darmstadt), Bruno Giacomazzo (Università degli Studi di Milano-Bicocca), Jorge Piekarewicz (Florida State University)

Student coordinator and Advisor

Bruno Giacomazzo

The school is truly multidisciplinary as it addresses fundamental questions in fields as diverse as astrophysics, gravitational physics, nuclear physics, and particle physics. Neutron stars are supported against gravitational collapse by nuclear interactions that become strongly repulsive at short densities leading, in turn, to an equation of state (EOS) capable of supporting neutron stars in excess of two solar masses. Neutron stars are unique cosmic laboratories that probe the strong interaction at the extremes of density and isospin asymmetry, and which may harbor exotic states of matter in their cores. Finally, the gravitational-wave and electromagnetic emission from the collision of binary neutron stars is starting to provide fundamental new insights into the astrophysical site for the r-process and on the nature of dense matter.
In this school we will discuss neutron stars and their EOS, core-collapse supernovae and neutron star mergers. These two high-energy events allow us to understand the extreme conditions in neutron stars as well as the origin of heavy elements in the universe.

Keynote Speakers and Lecturers

Almudena Arcones (TU Darmstadt), Andre da Silva Schneider (Universidade Federal de Santa Catarina), Bruno Giacomazzo (Università degli Studi di Milano-Bicocca), Alejandra Gonzalez (University of Jena), Martin Obergaulinger (University of Valencia), Albino Perego (University of Trento), Jorge Piekarewicz (Florida State University), Anna Puecher (University of Potsdam), Adriana Raduta (IFIN-HH Bucharest), Moritz Reichert (University of Valencia), Concettina Sfienti (Johannes Gutenberg-Universität), Om Sharan Salafia (INAF), Irene Tamborra (Niels Bohr Institute), Serena Vinciguerra (University of Amsterdam), Anna Watts (University of Amsterdam)

APPLICATIONS

Applications for the ECT* DTP/TALENT Training School 2024 should be made electronically through the ECT* web page. It should include: a curriculum vitae, a 1-page description of academic and scientific achievements, a short letter expressing the applicants' personal motivation for participating in the School. In addition, a reference letter from the candidate's supervisor should be sent to Barbara Gazzoli (gazzoli@ectstar.eu) for the attention of the Director of ECT*. For further details see www.ectstar.eu

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SUPPORTING INSTITUTIONS

EURO-LABS EUROPEAN LABORATORIES FOR ACCELERATOR BASED SCIENCES

INFN Istituto Nazionale di Fisica Nucleare

FRIB Theory Alliance

EMMI