

«ETTORE MAJORANA» FOUNDATION AND CENTRE FOR SCIENTIFIC CULTURE

INTERNATIONAL SCHOOL OF COSMIC-RAY ASTROPHYSICS

«MAURICE M. SHAPIRO»

**24th Course: “Particles and the Cosmos – Bridging the infinitesimal and the infinite”
29 July – 6 August 2026**

PRESIDENT AND DIRECTOR OF THE CENTRE: PROFESSOR A. ZICHICHI

DIRECTORS OF THE COURSE: PROFESSORS J.R. HÖRANDEL, R. SPARVOLI, T. STANEV

Announcing the 24th course:

Purpose: We are living in the era of multi-messenger astro(particle) physics, where the physics of the smallest elementary building blocks of nature is connected to the largest structures in the Universe. In recent years, numerous breakthroughs have propelled the field forward, including landmark discoveries such as the first direct detection of gravitational waves, the observation of astrophysical neutrinos originating beyond our Galaxy, and coordinated multi-wavelength follow-up campaigns of gravitational wave events. Continuous improvements in detection technologies are revealing ever more details about the properties of cosmic rays, gamma rays, and neutrinos.

This course will explore how these advances interconnect to deepen our understanding of the high-energy Universe, as well as the prospects for new discoveries and insights enabled by emerging technologies. These are among the key questions to be addressed during the 24th biennial session of **The International School of Cosmic Ray Astrophysics**.

Focusing on the “messengers” of gamma rays, neutrinos, charged particles (cosmic rays), and gravitational waves, lectures by leading experts—selected according to the School’s tradition for both scientific excellence and communication skills—will present the historical context, recent results, and the technologies employed in these fields.

The School fosters an environment rich in informal discussions, with participants, students, and experts dining together and engaging in relaxed conversations in the unique ambiance of Erice. Such interactions often lead to lifelong friendships, the exchange of new ideas, and the formation of collaborations. Non-scientific topics, such as strategies for securing positions or research grants, can also be explored.

Additionally, the School offers participants the opportunity to present their own research, receive constructive feedback, and gain experience addressing an international audience of peers and experts.

Topics include: Neutrino astronomy, gravitational wave astronomy, dark-matter searches, the highest-energy particles, acceleration and interactions of high-energy radiation, balloon, satellite, and ground based measurements of cosmic rays and gamma rays, propagation of high-energy radiation through the galaxy and space- or ground-based experiments of the future.

Registration: please use the site <https://agenda.astro.ru.nl/event/26/>

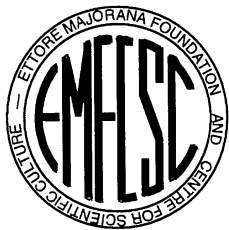
Secretariat of the Centre:

Via Guarnotta 26 - 91016 Erice, Italy – Tel. +39 0923 869133 – Fax +39 0923 869226 – E-mail: hq@ccsem.infn.it

Secretariat of the School:

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INTERNATIONAL SCHOOL OF COSMIC-RAY ASTROPHYSICS: • Progress and Problems in Cosmic Ray Physics - 1978 • Acceleration of Particles in Nature - 1980 • Composition and Origin of Cosmic Rays - 1982 • Cosmic Radiation in Contemporary Astrophysics - 1984 • Genesis and Propagation of Cosmic Rays - 1986 • Cosmic Gamma Rays and Cosmic Radiation - 1988 • Cosmic Rays, Supernovae, and the Interstellar Medium - 1990 • Particle Astrophysics and Cosmology - 1992 • Currents in High Energy Astrophysics - 1994 • Toward the Millennium in Astrophysics: Problems and Prospects - 1996 • New Vistas in Astrophysics - 1998 • Astrophysical Sources of High Energy Particles and Radiation - 2000 • Relativistic Astrophysics and Cosmology - 2002 • Neutrinos and Explosive Events in the Universe - 2004 • Astrophysics at Ultra-high Energies - 2006 • Gamma Ray and Cosmic Ray Astrophysics: From below GeV to beyond EeV Energies - 2008 • Astro & Particle Physics: From Underground to Outer Space - 2010 • A New Era in Particle Astrophysics - 2012: • Exploring the High Energy Universe - 2014 • Particle, Gamma-ray and Neutrino Astrophysics in the 21st Century - 2016 • Astroparticle Physics: yesterday, today, and tomorrow – The 40th anniversary of the ISCR - 2018 • From Cosmic Particles to Gravitational Waves – now and to come - 2022 • Multi-Messenger Astroparticle Physics - 2024



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Financial Matters and Logistics:

The local expense fee of 1485 Euros, payable in advance or upon arrival, covers lodging (in shared rooms), meals, transportation between the Palermo airport and Erice (provided by the Centre) and all course activities. Participants dine at their choice of a number of Erice restaurants (beverages, including water, with meals are not included and must be paid for separately).

Participants needing financial assistance should apply as soon as possible. Partial assistance with local expenses will be offered to students from overseas, i.e., those requiring trans-Atlantic or trans-Pacific travel and students who demonstrate real financial need. Requests for financial assistance should accompany the application.

Qualified applicants who can defray all of their own expenses are usually admitted.

Application / Registration:

Applications from graduate students and post-docs (theory & experiment) should include a brief CV and a statement that travel/transport funds are available. For students, a short note of endorsement by a senior scientist should be provided. Anyone interested in attending should apply as soon as possible since space is limited due to constraints at the Ettore Majorana Centre, and late applicants may have to be turned away.

Senior Participants are encouraged to attend and should contact one of the directors.

Applications should be submitted via the website <https://agenda.astro.ru.nl/event/26/>. You will need to be prepared to upload your CV/resume, and note of endorsement as PDF files. Response will be via e-mail, with the first selection of attendees in early 2026.

For questions not covered on the websites, please contact
 Prof. Dr. Jörg Hörandel – Jorg.Horandel@ru.nl.

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