

43rd International Conference on High Energy Physics

30 July 2026 to 5 August 2026

Natal Convention Center

Scientific Programme

The ICHEP 2026 Scientific Program is organised with plenary and parallel sessions for oral presentations and a poster session. Contributions to the conference will be selected according to their relevance within the following Scientific tracks. The size of the meeting will be similar to previous editions; about 750-800 parallel talks are expected, and the length of the contribution will span from 12-15 minutes, followed up by 3 minutes of discussion. The conference will have online proceedings. The conference is in person only.

Higgs Physics

The session will be dedicated to the latest experimental results and theoretical developments in the Higgs boson sector. Current approaches for studying the Higgs boson at the LHC and prospects of Higgs measurements at HL-LHC and future colliders will be included. The session will also cover beyond-the-Standard model searches involving Higgs signatures.

Neutrino Physics

This section hosts contributions on theoretical and experimental neutrino physics. It collects reviews on recent results from existing detectors and presentations on the physics reach of planned future instrumentations. Discussions on the theoretical framework are welcome.

Beyond the Standard Model

This session covers the latest direct and indirect experimental searches of physics beyond Standard Model (BSM), new methodologies for BSM searches and recent theoretical and phenomenological progress in BSM.

Electroweak and Top Quark Physics

This section will cover recent developments in top quark and electroweak physics. It will include both experimental and theoretical aspects.

Quark and Lepton Flavor Physics

The session is devoted to experimental results and theoretical studies regarding the processes depending upon the flavour of quarks and leptons. Particular attention is put on the studies of CP-violation effects, rare decays and decays potentially revealing violation of the leptonic-flavour conservation and leptonic universality.

Strong Interactions and Hadron Physics

This session is devoted to both perturbative and non-perturbative regimes of strong interactions, including the production and spectroscopy of heavy and exotic hadrons.

Heavy Ions

In this section, recent developments and future perspectives of heavy-ion physics will be covered (at low and very high energy) from both the theoretical and experimental perspective.

Astro-particle Physics and Cosmology

This session brings together international experts in astroparticle physics and cosmology to discuss the most recent results and future perspectives in high-energy astroparticle physics, cosmic microwave background, large-scale structure and gravitational waves science.

Dark Matter

This session will be devoted to the physics of Dark Matter (DM). The feasibility of DM detection at colliders and via direct and indirect searches will be discussed. Also covered will be the discussion of theoretical models behind the DM searches.

New Developments in Quantum Field Theory, String Theory and Quantum Information in HEP

This session will cover recent advances and results in the theoretical developments that push the boundaries of established theoretical frameworks and extend the mathematical description of the world that we live in.

Accelerator: Physics, Performance, and R&D for Future Facilities

This session addresses technologies and performances of existing and next-generation accelerators (including HL-LHC) and their potential and impact on present and future particle physics research.

Operation, Performance and Upgrade of Present Detectors

This session is dedicated to experience gained in detector operations during data taking: real performances versus expected ones, as well as new techniques and solutions needed to face issues due to detector ageing and planned luminosity upgrades.

Detectors for Future Facilities, R&D and Novel Techniques (including Quantum Sensors)

This track covers recent results and future developments in detection techniques and electronics for fundamental particle physics.

Software and Computing

Artificial Intelligence, Machine Learning and Quantum Computing in HEP

This section is dedicated to addressing computer, networking and software challenges related to the highly demanding needs of the HEP experiments.

Education & Outreach

This section will include topics relevant to science outreach and physics education. It will focus on recent developments in a variety of activities in schools, research institutes, universities, clubs, institutions such as science museums and events aimed at broadening awareness of general public about the research in high-energy physics.

Equity, Diversity and Inclusion

This track will discuss three essential values in business and society and report on the progress in bringing these values to fundamental research and institutions involved.

Technology Applications and Industrial Opportunities

This section is dedicated to the technology transfer originated by the research in High Energy Physics. The main focus is on novel techniques developed in the R&D of accelerators and detectors for future experiments that could have industrial applications.

Sustainability

Nowadays, the need for sustainability impacts any human activity. This session will discuss the sustainability of fundamental high-energy particle research. Visionary contributions that would help set the direction of the field for decades to come are welcome.