ICHEP 2022

Wednesday, 6 July 2022 - Wednesday, 13 July 2022

Bologna, Italy

Scientific Programme

The ICHEP 2022 Scientific Program is organised with plenary and parallel sessions for oral presentations and a poster session. Contributions to the Conference are selected according to the relevance within the following Scientific tracks.
How to get in touch with the session conveners

If you wish to get in touch with the session conveners, you can obtain a file with the email addresses following this link (password: ichep2022-conveners).

Higgs Physics

This session will be dedicated to the latest experimental results and to the theoretical work in the Higgs boson sector. Current approaches for studying the Higgs boson at the LHC and just beyond (HL-LHC) will be presented. Prospects on the measurements of Higgs properties at proposed future colliders will complete the overview.

Conveners:
Sylvie Braibant (UniBO, LOC liaison)
Fabio Maltoni (UniBO, LOC liaison)
Karsten Koeneke (Freiburg)
Christophe Grojean (DESY and Humboldt University)
Maria Cepeda Hermida (CIEMAT)
Yuji Enari (ICEPP)
Laura Reina (Florida State Univ.)

Neutrino Physics

This section hosts contributions on theoretical and experimental neutrino physics, covering a wide energy range. It collects reviews on recent results from existing detectors as well as presentations on the goals and expected performances of new instrumentation. Discussions on the theoretical framework are welcome.

Conveners:
Annarita Margiotta (UniBO, LOC liaison)
Laura Patrizii (INFN Bologna, LOC liaison)
Matteo Tenti (INFN Bologna, LOC liaison)
Yasuhiro Nakajima (Tokyo University)
Peter Denton (BNL)
Alessandra Tonazzo (APC Paris)
Roberto Petti (University of South Carolina)

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.

Conveners:

Antonio Sidoti (INFN BO, LOC liaison)
Sarah Williams (Cambridge)
Lesya Shchutska (EPFL)
John Conway (UC Davis)
Niki Saoulidou (Athens)
Michal Malinsky (Charles Univ., Prague)

Top quark and EW Physics

This section covers recent development in the fields of top quark and electroweak physics, regarding both experimental and theoretical aspects.

Conveners:
Matteo Negrini (INFN BO, LOC liaison)
Maria Aldaya (DESY)
Federica Fabbri (Glasgow)
Martijn Mulders (CERN)
Malgorzata Worek (RWTH Aachen University)
Ken Mimasu (King's College London)

Quark and Lepton Flavour 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. Focus is put also on measurements and predictions of heavy-hadron and lepton properties.

Conveners:
Stefano Perazzini (INFN BO, LOC liaison)
Sneha Malde (Oxford)
Sergey Polikarpov
Jim Libby (IIT Madras)
Yasmine Sara Amhis (Orsay)
Claudia Cornella (JGU Mainz)

Strong interactions and Hadron Physics

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

Conveners:
Giovanni Abbiendi (INFN BO, LOC liaison)
Maria Ubiali (Cambridge)
Marco Pappagallo (Bari)
Gunar Schnell (Basque University)
Bogdan Malaescu (LPNHE Paris)

Alice Ohlson (Lund University)

Heavy Ions

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

Conveners:
Manuel Colocci (INFN BO, LOC liaison)
Sandra Padula (Sao Paulo State University)
Giulia Manca (Univ. Cagliari & INFN CA)
Martin Spousta (Charles University)
Yvonne Pachmayer (Heidelberg University)
Yen-Jie Lee (MIT)
Jasmine Brewer (CERN)

Astroparticle Physics and Cosmology

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

Conveners:
Fabio Finelli (INAF, LOC liaison)
Guenter Sigl (Universität Hamburg)
Elisa Bernardini (University of Padova)
Sadakazu Haino (Academia Sinica)
Chiara Caprini (University of Geneva & CERN)
Mercedes Paniccia (University of Geneva)

Dark Matter

We have nowadays clear indications that the matter in the Universe is mostly in the form of a dark component, beyond the Standard Model. In this session we will cover its potential detection at colliders and via direct and indirect searches; we will also review the theoretical models behind it.

Conveners:
Marco Selvi (INFN BO, LOC liaison)
Priscilla Pani (DESY)
Lucia Canonica (Max Planck Institut for Physics)
Koun Choi (IBS)
Jan Conrad (Stockholm U.)
Riccardo Catena (Chalmers University, Goteborg)

Formal Theory

This session deals with the fruitful directions that the most speculative investigations shall travel to provide explanations and predictions. It shall also collect and relate the theoretical contributions of the other sessions.

Conveners:
Davide Fioravanti (INFN BO, LOC liaison)
Jaroslav Trnka (UC Davis)
Silvia Penati (University of Milano-Bicocca)
Massimo D'Elia (University of Pisa)
Bogdan Stefanski (City, University of London)
Patrick Dorey (Durham University)

Accelerators: Physics, Performance and R&D for future facilities

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

Conveners:
Benedetto Giacobbe (INFN BO, LOC liaison)
Frank Zimmermann (CERN)
Angeles Faus-Golfe (IJCLab)
Vladimir Shiltsev (FNAL)
Jie Gao (IHEP, Chinese Academy of Sciences)
Gaku Mitsuka (KEK)

Operation, Performance and Upgrade (Incl. HL-LHC) 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 coming from both aging and planned luminosity upgrades.

Conveners:
Carla Sbarra (INFN BO, LOC liaison)
Tiziano Camporesi (CERN)
Felix Reidt (CERN)
Ichiro Adachi (KEK)
Petra Merkel (FNAL)

Detectors for Future Facilities, R&D, novel techniques

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

Conveners:
Gianluigi Cibinetto (INFN FE, LOC liaison)
Felix Sefkow (DESY)
Daniela Bortoletto (Oxford)
Jianchun Wang (IHEP, Chinese Academy of Sciences)
Mogens Dam (Niels Bohr Inst.)
Cornelia Wunderer (DESY and CFEL)

Computing and Data handling

This section is dedicated to address computer, networking and software issues related to the high demanding needs of the HEP experiments.

Conveners:
Daniele Bonacorsi (UniBO, LOC liaison)
Graeme Stewart (CERN)
Frank Gaede (DESY)
James Letts (UCSD)
Andrew McNab (Manchester)
Weidong Li (IHEP)

Education and Outreach

This section encompasses facets of science outreach and physics education focusing on recent developments in the variety of activities in schools, research institutes, universities, clubs, institutions such as science museums and events open to the general public aimed at broadening the audience for, the awareness and understanding of high-energy physics.

Conveners:
Laura Bandiera (INFN FE, LOC liaison)
Claire Adam (LAPP)
Tapan Nayak (NISER, India & CERN)
Freya Blekman (DESY & Universität Hamburg)
Gwenhaël de Wasseige (UCLouvain)

Equality, Diversity and Inclusion

This track covers the review of recent theoretical developments in this field and the presentation and discussion of good practice and structural changes in research institutions. Sustainability of research will be also considered including social, economical and environmental aspects.

Conveners:
Isabella Garzia (UniFE, LOC liaison)
Tomas Brage (Lund University)

Geneviève Guinot (CERN)
Haiyan Gao (BNL & Duke University)
Eran Jona Meytal (Weizmann Institute of Science)

Technology Applications and Industrial Applications

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.

Conveners:
Alessandro Montanari (INFN BO, LOC liaison)
Massimo Caccia (Universita' dell'Insubria & INFN Milano)
Hucheng Chen (BNL)
Alexander Romanenko (Fermilab)
Magnus Mager (CERN)