



The Galileo Galilei Institute for Theoretical Physics
Arcetri, Florence



Galileo Galilei

Theory Challenges in the Precision Era of the Large Hadron Collider

Aug 28, 2023 - Oct 13, 2023

The workshop aims at bringing together world experts in precision Standard Model phenomenology in response to the anticipated accuracy of new high-quality data from Run 3 of the LHC. With an increasing number of experimental analyses limited by theoretical uncertainties the theory community is challenged to provide predictions with a matching precision and to continue the development of frontier tools. The ultimate goal is to lay the foundations for precision measurements of Standard Model observables during future runs of the LHC.

Organizing Committee:

Simone Alioli, University of Milano Bicocca
Adam Kardos, University of Debrecen, Hungary
Lorenzo Magnea, University of Torino
Sven-Olaf Moch, University of Hamburg, Germany
Doreen Wackerroth, University at Buffalo, NY, USA

Topics:

- Particle physics during Run 3 of the LHC
- Precision QCD and Electroweak theory
- Novel directions in resummation
- Scattering amplitudes and key LHC processes at high accuracy
- Standard Model effective theory and New Physics Searches
- New algorithms in quantum field theory and Monte Carlo developments
- Proton structure and Standard Model parameters

Tentative Schedule:

1st week: Kick-Off Conference
2nd week: Precision QCD results
3rd week: Scattering amplitudes and new algorithms
4th week: Resummation, PDFs and MC developments
5th week: Training week for PhD students
6th week: Electroweak theory
7th week: SMEFT and New Physics

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