



The Galileo Galilei Institute for Theoretical Physics Arcetri, Florence

New Physics from The Sky

October 4th 2021 - November 12th 2021

Jo Galileo Galilei

The LHC and direct detection experiments have had the most interesting possible outcome: the observation of a Higgs boson in isolation. This has left a void in theoretical particle physics, making the traditional questions on the origin of the weak scale and on the nature of dark matter deeper and more confusing than ever.

The field has responded by producing a number of ideas that trace the answer to these questions to the early history of the Universe. At the same time a number of new probes of the evolution of the Universe are planned or are already taking data.

This calls for a meeting place where particle physicists, astrophysicists and cosmologists can join forces to refine theoretical ideas, find new experimental targets and benefit from the expertise needed to answer the most pressing questions in fundamental physics.

This workshop will offer to the particle physics community access to a wealth of present and future cosmological data. To astrophysics and cosmology it will give a window on the latest ideas that connect their disciplines to the fundamental laws of particle interactions. We are on the brink of a new data-driven era in cosmology.

This is the best time to bring these different communities together and pave the way for the next discovery in fundamental physics.

Topics:

- Dark Matter
- Astrophysics as a fundamental physics laboratory
- Cosmic Coincidences
- Fundamental physics in low- and high-redshift cosmology
- New physics in (primordial) gravitational waves

Organizing Committee:

Raffaele Tito D'Agnolo (IPhT, CEA/Saclay)
Cora Dvorkin (Harvard University)
Michael Geller (Tel Aviv University)
Diego Redigolo (CERN & INFN Florence)
Filippo Sala (LPTHE, CNRS/Sorbonne)
Javi Serra (TUM Munich)
Raman Sundrum (University of Maryland)

Local Organizers: Carlo Alberto Cremonini e Rocco Rollo

Contact persons: filippo.sala@lpthe.jussieu.fr, raffaele-tito.dagnolo@ipht.fr