

New Pathways in Exploration of Quantum Field Theory and Quantum Gravity beyond Supersymmetry III



12 - 16 June 2023
An ICTP Meeting
Trieste, Italy

Further information:
<http://indico.ictp.it/event/10193/>
smr3859@ictp.it

This activity will cover novel methods developed to understand nonperturbative phenomena in quantum field theory and quantum gravity, with particular attention to the non-supersymmetric realm. The format will consist of a few talks per day, with ample time allocated for discussions.

Directors:

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Description:

In attempts to describe nature, the paradigm of effective field theory is often a guiding principle. Low-energy physics is severely constrained by symmetries and anomalies, whose most general formulation has yet to be uncovered as it is witnessing transformative progress. Such tools, together with dualities, are now being explored in contexts also beyond high-energy physics. On the other hand, there are plenty of perfectly acceptable effective field theories that do not admit an ultraviolet completion or cannot be coupled to quantum gravity. Understanding which theories of gravity are quantum consistent, how they treat information, and how low-energy coarse graining of that information can appear as a statistical averaging compatibly with unitarity, is of paramount importance. It is a goal of this workshop to present a pedagogical introduction to efforts in these directions, and in the meanwhile to advance the forefront of the state of the art.

Topics:

- Generalized and categorical symmetries
- Anomalies and dualities in QFT
- Black hole entropy and quantum thermodynamics
- Quantum information and the information paradox
- Averaging and coarse graining in gravity and holography
- Minimal SUSY and G₂-holonomy manifolds
- Aspects of the QG swampland
- Applications to phenomenology and cosmology

Local Organiser:

B. ACHARYA, ICTP, Italy

Speakers include:

Antoine Bourget (IPhT Saclay)
Michele Del Zotto (Uppsala University)
Inaki Garcia-Etxebarria (Durham University)
Chetan Gowdigere (NISER India)
Matthew Heydeman (Princeton University)
Miguel Montero (IFT Madrid)
Eric Perlmutter (IPhT Saclay)
Valentin Reys (IPhT Saclay)
Gary Shiu (University of Wisconsin-Madison)

How to apply:

Online application:
<http://indico.ictp.it/event/10193/>

Female scientists are encouraged to apply.

Grants:

A limited number of grants are available to support the attendance of selected participants, with priority given to participants from developing countries. There is no registration fee.

Deadlines:

2 May 2023

For applicants requesting financial and/or visa support

26 May 2023

For all other applicants



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