

Workshop on Scattering Amplitudes and Cosmology



17 - 21 April 2023
An ICTP meeting
Trieste, Italy

Further information:
<http://indico.ictp.it/event/10165/>
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There are strong indications from physics at infinitesimal and cosmic distances that our current understanding of the laws of nature is only approximate. Novel geometric objects recently discovered in particle physics and cosmology have opened up entirely unexpected connections to combinatorics, algebra and geometry.

Description:

In the last decades researchers have uncovered tremendous insights into the structure of perturbative on-shell scattering amplitudes. This includes unitarity methods, recursion relations, worldsheet models, bootstrap methods and more recently an intriguing connection to positive geometry, which includes the positive Grassmannian, the Associahedron and the Amplituhedron. These advances bring us closer to reformulating the perturbative S-matrix via a completely new set of principles.

At the same time, positive geometry is also seen to be relevant to cosmological correlators, which are fundamental objects capturing the physics of our Universe. While some progress has been made bridging these two fields, we are still at the beginning of this road.

The workshop brings together experts from scattering amplitudes, mathematics, and cosmology to develop these novel connections.

This workshop receives funding from the European Research Council (ERC) under the European Union's Horizon 2020 research and innovation programme (Novel structures in scattering amplitudes, grant agreement No 725110).

Topics:

- Feynman Integrals
- Scattering Amplitudes
- Cosmological Correlators
- Amplituhedra

Directors:

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Local Organiser:

M. MIRBABAYI, ICTP, Italy

Speakers:

N. ARKANI-HAMED, IAS Princeton
J. J. CARRASCO, Northwestern
M. CARRILLO-GONZALEZ, Imperial College, London
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K. KAMPF, Charles University in Prague
A. LIPSTEIN, Durham University
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S. RAJU, International Centre for Theoretical Sciences, Bengaluru
L. SENATORE, ETH Zurich

How to apply:

Online application:
<http://indico.ictp.it/event/10165/>

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:

for applicants requesting financial and/or visa support:

28 February 2023

the deadline for all other applicants

17 March 2023



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