Seminar, Department of Physical Sciences, Bose Institute, Kolkata

Hidden Positivity in Quantum Field Theory: From Geometry to Bootstrap Techniques

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Abstract: Positivity lies at the heart of quantum field theory, underlying familiar principles such as unitarity, causality, and analyticity. In this talk, I will discuss a new class of hidden positivity structures that emerge in a surprisingly broad range of quantum field theory observables.

Inspired by recent developments in scattering amplitudes and positive geometry, I will show how remarkably simple positivity constraints arise naturally for scalar Feynman integrals and present evidence that they extend to scattering amplitudes, effective field theories, and cosmological correlators. I will then discuss how these structures can be used to derive new bootstrap constraints and develop efficient methods for the numerical evaluation of multi-loop Feynman integrals.

- **Date/time: November 17, 2026 (Tuesday) at 03:00 PM**
- **Venue: Room 204, Physics Seminar Room, (Second floor, UAC, BI)**