



ICTS String Seminar

Title : Conformal Bootstrap in the Age of AI

Speaker : Kausik Ghosh (King's College London, United Kingdom)

Date : Friday, 29 May 2026

Time : 3:30 PM (IST)

Abstract : The conformal bootstrap provides a powerful nonperturbative framework for studying strongly coupled quantum field theories using symmetry, unitarity, and crossing symmetry. In this talk, I will introduce the basic philosophy of the bootstrap and explain how it turns general principles into quantitative constraints on quantum field theories. I will then review recent developments in analytic functional methods, including new results that improve our understanding of numerical bootstrap techniques. Finally, I will discuss how modern machine learning ideas can open new ways of navigating the space of consistent conformal field theories. In particular, I will describe how neural networks can construct crossing-symmetric correlators from limited physical input, and argue that their implicit preference for simple, smooth solutions may point toward new organizing principles underlying bootstrap constraints.

Venue : Emmy Noether Seminar Room

Zoom Link: <https://icts-res-in.zoom.us/j/88092766911?pwd=R3ZrVk9yeW96ZmQ4ZG9KRzVhenRKZz09>

Meeting ID: 880 9276 6911

Passcode: 232322