ICTS String Seminar

Title : Semi-universality of CFT_d at large spin

Speaker : Sridip Pal (Institut des Hautes Études Scientifiques, France)

Date : Wednesday, 24 December 2025

Time : 2:30 PM (IST)

Abstract : In unitary 2 dimensional CFT with c>1 and twist gap in Virasoro primaries, modular bootstrap of torus partition function in the light cone limit using rigorous complex analytic method reveals existence of twist accumulation points, and universality of operator spectrum at large spin J: the (appropriately smoothened) density of states is completely universal: **theory independent** upto J^{-N} for any N>0. In this talk, we will explore this limit in higher dimensional CFT and provide EFT based arguments, along with strong evidence, for what we call "Semi-universality" of spectrum at large spin: the density states at large spin is determined upto a **theory-dependent** function of ***universal ratio*** *of twist and spin*. The semi-universality has an intriguing connection with ANEC. If time permits, I will make some comments about what we need to do to turn this conjecture into a proof. This will be based on arXiv: 2505.02897 with Balt C van Rees and Jiaxin Qiao & the arXiv: 2512.00158 with Harsh Anand, Nathan Benjamin, Vipul Kumar, Shiraz Minwalla, Jyotirmoy Mukherjee, Asikur Rahaman.

Venue : Feynman Lecture Hall
Zoom Link: https://icts-res-in.zoom.us/j/88092766911?pwd=R3ZrVk9yeW96ZmQ4ZG9KRzVhenRKZz09
Meeting ID: 880 9276 6911
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