ICTS String Seminar

Title : Universality of the microcanonical entropy at large spin in non-rational 2D CFTs

Speaker : Sridip Pal (California Institute of Technology, United States)

Date : Monday, 12 May 2025

Time : 2:00 PM (IST)

Abstract : We consider rigorous consequences of modular invariance for two-dimensional unitary non-rational CFTs with c >1. Simple estimates for the torus partition function can lead to remarkably strong results. In particular, we show that the spectral density of spin J operators must grow like $\frac{1}{\sqrt{2J}}\exp\left(\pi\sqrt{2/3(c-1)J}\right)$ in any twist interval at or above (c-1)/12, with a known twist-dependent prefactor. This proves that the large J spectrum becomes dense even without averaging over spins. And the microcanonical entropy is universal with an error of little o of J. For twists below (c-1)/12, we establish that the growth must be strictly slower. Finally, we estimate how fast the maximal gap between two spin-J operators must go to zero as J becomes large.

Venue : Emmy Noether Seminar Room
Zoom Link: https://icts-res-in.zoom.us/j/88092766911?pwd=R3ZrVk9yeW96ZmQ4ZG9KRzVhenRKZz09
Meeting ID: 880 9276 6911
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