



ICTS String Seminar

Title : The quantum life of pi

Speaker : Aninda Sinha (Indian Institute of Science, Bengaluru)

Date : Wednesday, 12 March 2025

Time : 3:30 PM (IST)

Abstract : Using a stringy dispersion relation, I will explain how an infinitely new class of representations for the Euler-Beta function arises. As a corollary, we get an infinitely new class of formulas for pi, within which lies the famous Madhava series. This is made possible by exploiting field redefinition ambiguities to introduce a parameter in the dispersion relation which enables us to interpolate between all known dispersion relations (fixed-t, fixed-s, crossing symmetric, local crossing symmetric), very much like the deformation (and decomposition via plumbing fixture) of the worldsheet picture gives rise to various representations of the string amplitudes. Encouraged by this line of questioning, we turn to asking “What is the physics behind Ramanujan’s pi”. I will demonstrate that these formulas arise from logarithmic conformal field theories, for instance those studied in the fractional quantum hall effect, polymers, percolation. I will speculate what a physicist can hope to learn by exploiting such a connection.

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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