ICTS Geometry and Physical Mathematics Seminar

Title : Strings from Feynman Diagrams: A Picture Scrapbook

Speaker : Rajesh Gopakumar (ICTS-TIFR, Bengaluru)

Date : Thursday, 27 March 2025

Time : 2:00 PM (IST)

Abstract : Feynman Diagrams in large N gauge theories correspond to individual closed string configurations. We give evidence for this somewhat heterodox picture of gauge-string duality in the context of a simple set of correlators in N=4 Super Yang-Mills theory. These are described by a two matrix model. We describe, almost entirely pictorially, how each ribbon graph is glued in a unique way into a closed string worldsheet. These string configurations lie on a rather special lattice in the moduli space of punctured Riemann surfaces. In this approach, graph dualities point to the existence of multiple open string descriptions, physically arising from giant gravitons. Furthermore, we will also have a simple geometric picture of how the target space of the dual closed string can also be reconstructed in this case. These pictures are also buttressed by direct worldsheet calculations which exhibit this unusual localisation to these lattice points on moduli space.

Venue : Madhava Lecture Hall
Zoom Link: https://icts-res-in.zoom.us/j/97229724329?pwd=Mh8pBUNtbdnqiQq6AbNOIqWpFW2W7U.1
Meeting ID: 972 2972 4329
Passcode: 202030