



ICTS String Seminar

Title : AdS string amplitudes from single-valuedness

Speaker : Tobias Hansen (Durham University, United Kingdom)

Date : Thursday, 26 September 2024

Time : 2:30 PM (IST)

Abstract : It has long been known that string theory amplitudes have intriguing single-valuedness properties. When considering string theories on curved backgrounds, which are still lacking a complete worldsheet description, these properties become even richer. For AdS/CFT, single-valuedness can be combined with the structure of the OPE in the dual CFT to fix AdS string amplitudes in a small curvature expansion. In this way we found curvature corrections to the AdS Virasoro-Shapiro amplitude for graviton scattering in type IIB on AdS₅×S⁵ and the AdS Veneziano amplitude for gluon scattering in orientifolds of type IIB on AdS₅×S⁵. The results have the form of worldsheet integrals involving single-valued multiple polylogarithms. Our answers determine the CFT data for unprotected operators in planar N=4 SYM theory and certain N=2 SCFTs at strong coupling, making contact with integrability, localization and conformal bootstrap. Furthermore, the high energy limit of the amplitudes agrees with classical scattering computations in AdS.

Venue : Chern Lecture Hall

Zoom Link: <https://icts-res-in.zoom.us/j/88092766911?pwd=R3ZrVk9yeW96ZmO4ZG9KRzVhenRKZz09>

Meeting ID: 880 9276 6911

Passcode: 232322