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 AdS5xS5 and the AdS Veneziano amplitude for gluon scattering in orientifolds of type IIB on AdS5xS5. 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=R3ZrVk9yeW96ZmQ4ZG9KRzVhenRKZz09
Meeting ID: 880 9276 6911
Passcode: 232322