

## ICTS String Seminar

Title : Crossing symmetry, Transcendentality and Regge behaviour of 1d CFTs

Speaker : Kausik Ghosh, Indian Institute of Science, Bangalore

Date : Thursday, February 27, 2020

Time : 4:00 pm

Venue : Emmy Noether Seminar Hall, ICTS Campus, Bangalore

Abstract : We develop the technology for Polyakov-Mellin (PM) bootstrap in 1D CFTs. By adding appropriate contact terms, we bootstrap various effective field theories in AdS2 and analytically compute the CFT data to one loop. We develop PM bootstrap for theories with global symmetry  $O(N)$  and computed various CFT data. As a check, we propose a suitable basis of transcendental functions, which allows to fix the four-point correlators of identical scalar primaries completely, up to finite ambiguities. We also derive expressions for the corresponding CFT data in terms of harmonic sums. Finally, we consider the Regge limit of 1D correlators and derive a precise connection between the latter and the large-twist limit of CFT data. Exploiting this result, we study the crossing equation in the three OPE limits and derive some universal constraints for the large-twist limit of CFT data in Regge-bounded theories with a finite number of exchanges.