



Department of
Theoretical Physics

THE QUANTUM SPACETIME SEMINAR SERIES

Rebooting the Conformal Bootstrap in Mellin Space.

Apratim Kaviraj
(IISc. Bengaluru)

Date: Oct 17, 2016
Time: 11.30 am
Venue: A-304, TIFR



(Duration and Location are subject to irreducible jitter)

In one of his pioneering works, Polyakov had used conformal symmetries to introduce "unitary amplitudes" that described a 4-point function. Demanding consistency of the unitary amplitude description with the OPE of a correlator, he could obtain nontrivial data of the operator spectrum. In the modern language, Polyakov's unitary amplitudes seem to emerge from the Mellin space formalism of conformal field theories. A manifestly crossing symmetric Mellin transform of a CFT correlator can give rise to spurious terms, not present in the OPE. Demanding the cancellation of the spurious terms lead to nontrivial information of the operators of the CFT. I will show how to use this approach to calculate anomalous dimensions and OPE coefficients for the Wilson Fisher point, $O(N)$ critical theory and large spin asymptotics.

Infosys