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Department of Theoretical Physics

THE QUANTUM SPACETIME SEMINAR SERIES
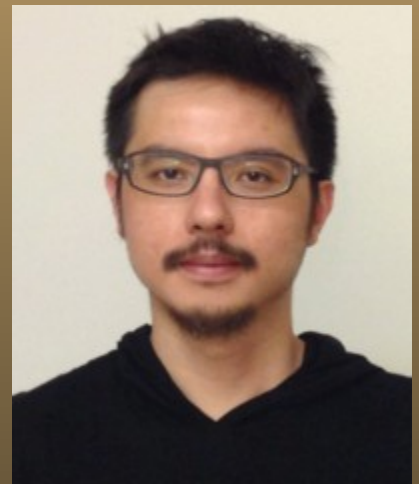
S-matrix constraints on perturbative UV completions

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Date: Nov 23, 2016
Time: 02.30 pm
Venue: A-304, TIFR

(Duration and Location are subject to irreducible jitter)

I will discuss the general framework in which one can discuss the issue of perturbative UV completions of gravity theories, in the context of four-point graviton scattering. Simple proofs lead to the need for infinite tower of massive higher spin particles. We will turn to the scattering of the scalar part of the spectrum. Using the duality between flat space S-matrix and Mellin amplitudes of four-point correlations in conformal field theories, we will show that the Regge trajectory, which encodes the spectrum of the theory, must be linear in certain kinematic regimes, just like string theory.

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