Department of Theoretical Physics

THE QUANTUM SPACETIME SEMINAR SERIES

Tensionless strings and related fun things.

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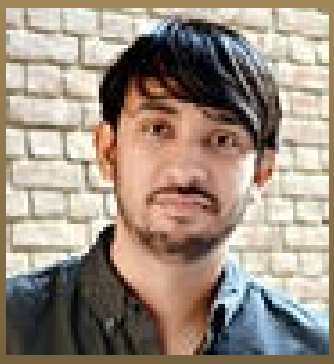
Date: Oct 31, 2016
Time: 11.30 am
Venue: A-304, TIFR



I will talk about the formulation of the tensionless limit of closed bosonic and superstring theory from the point of view of worldsheet symmetries. In the tensionless limit of closed bosonic string theory, Galilean conformal symmetry arises as the residual gauge symmetry on the tensionless worldsheet. The analysis of the fundamentally tensionless theory is related to the tensionless limit that is viewed as a contraction of worldsheet coordinates. Analysis of the quantum regime uncovers interesting physics. The degrees of freedom that appear in the tensionless string are fundamentally different from the usual string states. Through a Bogoliubov transformation on the worldsheet, we link the tensionless vacuum to the usual tensile vacuum. As an application, we show that our analysis can be used to understand physics of strings at very high temperatures. I also speak about our more recent extension of this analysis to closed superstrings.

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