



Department of
Theoretical Physics

Tata-Infosys Lecture Series

Gravitational dynamics from entanglement in holographic conformal field theories

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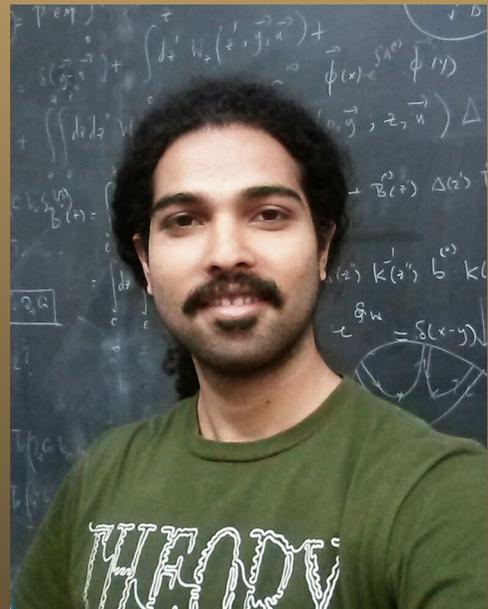
Date / Time

30 July 2019, 11.30 AM

31 July 2019, 11:30 AM

2 August 2019, 11.30 AM

Venue: A-304, TIFR



We will discuss recent progress in understanding gravitational dynamics in the context of the AdS/CFT correspondence as arising from the constraints satisfied by the entanglement structure of states in holographic conformal field theories. More precisely, we will show that if the entanglement entropies of all subregions in a holographic state of the CFT satisfy the Ryu-Takayanagi formula, then the bulk spacetime must necessarily satisfy the (non-linear) Einstein equation. Along the way, we will also review recently developed techniques for computations of information theoretic quantities such as entanglement entropies and modular Hamiltonians in relativistic quantum field theories, which have led to the proof of interesting universal constraints such as the averaged null energy condition.