ICTS String Seminar

Title : GR from RG: Gravity is induced from renormalization group flow in the IR

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Date : Wednesday, 25 February 2026

Time : 3:30 PM (IST)

Abstract : We revisit the holographic renormalization group (RG) setting in which a 4-dimensional (4d) quantum field theory at a finite cutoff corresponds to/is described by the Einstein gravity on a part of AdS5 space, cutoff at a finite radius. This holographic setting has interesting and important implications for the 4d field theory: Deformation of the field theory by a certain combination involving the square of its energy-momentum tensor can be alternatively viewed as formulating the field theory on a background with a dynamical metric. Explicitly, starting with a non-gravitating 4d field theory in the UV, flowing to the IR, quantum effects that we compute using the classical 5d Einstein gravity theory, induce an effective 4d Einstein gravity theory. In other words, we show that gravity is not a fundamental force and is an effective description of quantum effects in the IR limit.

Venue : Online
Zoom Link: https://icts-res-in.zoom.us/j/88092766911?pwd=R3ZrVk9yeW96ZmQ4ZG9KRzVhenRKZz09
Meeting ID: 880 9276 6911
Passcode: 232322