



## **ICTS String Seminar (Online)**

**Title** : Wheeler-DeWitt states of black hole and cosmological interiors

**Speaker** : Sean Hartnoll (University of Cambridge)

**Date** : Wednesday, 10<sup>th</sup> May 2023

**Time** : 03:00 pm (IST)

**Abstract** : In AdS/CFT, the renormalization group flow of coupling constants is described by the radial evolution of bulk fields, using the bulk equations of motion. Horizons in the bulk correspond to the far IR of the renormalisation group, but the bulk evolution does not stop there. The bulk fields continue to evolve in the “interior” beyond the horizon, with the evolution now unfolding in time rather than space. In the interior the same bulk equations of motion now define a Wheeler-DeWitt wave function rather than a boundary partition function. I will explain how Hamilton-Jacobi theory gives a unified description of the exterior partition function of coupling constants and the interior wave function. Once this picture is established in AdS/CFT, I will describe how it can be applied also in de Sitter spacetimes. There, the same equations defining Wheeler-DeWitt states near future infinity are shown to define quantum mechanical partition functions in the static patch.

**Venue** : Please click the below link to join the seminar.

<https://icts-res-in.zoom.us/j/83716877974?pwd=K1o1dnl5Nk0veStGUlhpL0hha1QwZz09>

Meeting ID: 837 1687 7974

Passcode: 579274