



Department of  
Theoretical Physics

# THE QUANTUM SPACETIME SEMINAR SERIES

**de Sitter quantum gravity: holography and compactification (part2)**  
(Zoom Seminar)

**Gonzalo Torroba**

(Bariloche)

**Date:** August 26, 2021

**Time:** 5.00 pm IST



Zoom link shall be shared separately

In this talk we review recent progress in formulating quantum gravity in de Sitter spacetime. First we will discuss a generalization of the  $TT\bar{c}$  deformation that includes a cosmological constant; applying it to a conformal field theory leads to a holographic description of the de Sitter static patch (or the  $dS/dS$  patch). In the second part of the talk we will present de Sitter solutions obtained by compactifications of M-theory with minimal ingredients. We argue that M-theory on a hyperbolic manifold with small closed geodesics supporting Casimir energy, along with a single classical source (7-form flux), contains a 3-term structure for volume stabilization at positive potential energy.