

# Topological Stars and Gravity

*Thursday 28 September 2023 17:00 (25 minutes)*

In this talk, I will discuss aspects of microscopic degrees of freedom of gravity and the physical motivation of quantum gravity. While the generic states are quantum mechanical, our goal will be to understand a class of them that are coherent enough to admit classical descriptions in Einstein gravity. The existence of these states require topological structures in spacetime that follow from the dynamics of compact extra dimensions. They behave as ultra-compact objects, dubbed topological stars, which can also model microscopic degrees of freedom of black holes. I will discuss why it is interesting to understand such objects in a new age of black hole astrophysics, and various aspects of their observational properties.

## Abstract Category

Particle Physics

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