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A. Frassino: Quantum black holes and holographic complexity

Monday 19 December 2022 11:30 (15 minutes)

In this talk, I will consider quantum effects on some specific black hole solutions and take into account their gravitational backreaction. In particular, I will describe the holographic construction of the quantum BTZ black hole (quBTZ) from an exact four-dimensional bulk solution.

I will present some of the thermodynamic properties of these black holes, focus on the generalized first law and analyze the different complexity proposals for the quBTZ. Our results indicate that Action Complexity fails to account for the additional quantum contributions and does not lead to the correct classical limit. On the other hand, the Volume Complexity admits a consistent quantum expansion and agrees with known limits.

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