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Universal black hole microstates

Tuesday 12 March 2024 13:30 (1 hour)

All the existing derivations of the black hole entropy formula S=A/4G have something unsatisfactory to them, and this dissatisfaction has stimulated much investigation into the structure of spacetime. In this talk I will describe a very broad statistical interpretation of this formula. Together with Ana Climent, Javier Magan, Martin Sasieta, and Alejandro Vilar Lopez, we have refined and extended a recent construction of sets of black hole microstates with semiclassical interiors that span a Hilbert space of dimension exp(S), where S is the black hole entropy. I will argue that there is a limit in which the construction acquires universal validity, applicable to rotating and charged black holes, extremal and near-extremal solutions, with or without supersymmetry, and possibly including general quantum corrections.

Presenter: EMPARAN, Roberto (Universitat de Barcelona)