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(G*) Evaporating Black Holes in 2D Models of Gravity

Monday, 6 June 2022 16:45 (15 minutes)

Black holes evaporate through Hawking radiation but without a full quantum treatment of gravity the end-point of this process is not yet entirely understood. For example it's been suggested that information that enters a black hole is irreversibly lost after it evaporates, an apparent contradiction with quantum mechanics. Studying the behaviour of information in black hole evaporation in effective models of gravity may provide insight into theories of quantum gravity. Of particular interest are non-singular black holes since quantum theories of gravity are expected to resolve the singularities that are pervasive in general relativity. Two dimensional theories of gravity are useful as toy models for studying black hole dynamics. This talk will discuss a generalized model of collapsing and evaporating black holes incorporating backreaction in 2D dilaton gravity, including non-singular black holes. A numerical code that solves generic systems on the full spacetime is presented.

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