

Strong cosmic censorship in de Sitter space

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I will review recent results concerning the strong cosmic censorship conjecture with a positive cosmological constant. It has been shown that scalar field perturbations of near-extremal Reissner-Nordstrom de Sitter (RNdS) black holes violate Christodoulou's formulation of the conjecture [1]. I will describe how linearized gravito-electromagnetic perturbations of RNdS exhibit even worse behaviour [2]. However, I will explain why, in the physical case of Kerr-de Sitter, Christodoulou's version of strong cosmic censorship is respected [3]. Thus, with a positive cosmological constant, strong cosmic censorship is respected by the vacuum Einstein equation but violated in Einstein-Maxwell theory. I will discuss the proposal that, in the latter case, the conjecture can be rescued by considering rough initial data [4].

References

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