1128-35-171   **Peter Hintz** and **Andras Vasy***, Department of Mathematics, Bldg 380, 450 Serra Mall, Stanford, CA 94305-2125. *The stability of Kerr-de Sitter black holes.*

In this lecture, based on joint work with Peter Hintz, I will discuss Kerr-de Sitter black holes, which are rotating black holes in a universe with a positive cosmological constant, i.e. they are explicit solutions (in 3+1 dimensions) of Einstein's equations of general relativity. They are parameterized by their mass and angular momentum.

I will first discuss the geometry of these black holes as well as that of the underlying de Sitter space, and then talk about the stability question for these black holes in the initial value formulation. Namely, appropriately interpreted, Einstein's equations can be thought of as quasilinear wave equations, and then the question is if perturbations of the initial data produce solutions which are close to, and indeed asymptotic to, a Kerr-de Sitter black hole, typically with a different mass and angular momentum. In the second part of the talk I will discuss analytic aspects of the stability problem, in particular showing that Kerr-de Sitter black holes with small angular momentum are stable in this sense. (Received February 24, 2017)

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