

**Vasy, András: The stability of Kerr-de Sitter space and global analysis**

I will discuss, based on joint work with Peter Hintz, the stability of the family of Kerr-de Sitter (KdS) black holes, which are rotating black holes in a spacetime with positive cosmological constant, as solutions of Einstein's vacuum equation: spacetimes evolving from initial data close to those of a KdS metric stay globally close to this KdS spacetime, and are indeed asymptotic to a nearby member of the KdS family.

I will discuss the general setup and formulate the result, and then in the second half of the talk focus on general analytic aspects of this problem, involving global analysis, together with the choice of a gauge to break the diffeomorphism invariance of Einstein's equation and the role of constraint damping which has also played a key role in numerical general relativity (and thus LIGO and the detection of gravitational waves).