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The moduli space of dynamical spherically symmetric black hole spacetimes and the extremal threshold

Extremal black holes are special solutions of Einstein's equations with maximal spin or charge for their mass. In this talk, we consider the moduli space of spherically symmetric solutions to the Einstein-Maxwell equations with a real scalar field. It is known that solutions in this space either form black holes or disperse (no singularity forms). In the small scalar field regime, we show that the interface between these two regions of moduli space is a smooth hypersurface consisting of asymptotically extremal black holes. This is based on upcoming joint work with Yannis Angelopoulos (BIMSA) and Christoph Kehle (MIT).