

# QUASINORMAL MODES OF SMALL BLACK HOLES

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I will discuss the quasinormal mode (QNM) spectrum of black holes in de Sitter space when their mass tends to zero. The main result establishes the convergence, in compact subsets of the complex plane, to the QNM spectrum of de Sitter space (the limiting space-time). The proof is based on a priori estimates for a degenerating family of ODEs which capture the singular manner in which the black hole ‘disappears’ in the zero mass limit. Detailed numerics illustrate the results and suggest some directions of future research. Joint work with YuQing Xie (MIT).