Hushing Tails: tails in dynamical spacetimes

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Abstract

The no-hair theorem states the only stationary, asymptotically flat, black hole solutions of the vacuum field equations of
General Relativity belong to the Kerr family. But how does one approach this state, dynamically? In this talk we study the behavior of late-time tails in forced and nonlinear spacetimes, where matter moves in the exterior of black holes. We will conclude that these can deviate from the brunch-cut power-law tail t^(-2l-3) predicted for massless fields. We compare our results with recent evidence for the existence of slowly decaying asymptotic tails in simulations of eccentric binaries and discuss the possibility of detecting them with future gravitational-wave interferometry.

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