

Abstract Submitted
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Strong-field tidal distortions of rotating black holes SCOTT HUGHES, STEPHEN O’SULLIVAN, Massachusetts Institute of Technology — We describe how to compute the geometry of an event horizon that is distorted by a binary companion using black hole perturbation theory. The techniques we use are good for fast orbital motion and rapid black hole spin, but are limited to large binary mass ratios. We sketch the formalism that we use and show results for a variety of interesting binary orbits, including embeddings that illustrate the dynamical response of the horizon to a time-varying applied tide. These results illustrate some interesting consequences of the teleological nature of a black hole’s event horizon.

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