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Energy carried by gravitational waves in bimetric gravity LEO

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— The shrinking of a compact binary’s orbit is controlled by its energy flux. The gravitational-wave energy functional differs between theories of gravity, so must be re-derived when investigating a new theory. We investigate the energy carried by gravitational waves in the Hassan-Rosen bimetric gravity theory (bigravity), in two different ways. First, we start by following the approach of Isaacson, performing second order perturbation theory, to find effective stress-energy tensors for gravitational waves. This approach suffers a drawback in that it does not clearly identify the energy. Second, we pursue a Noether approach, following Wald and Zoupas. Along the way we discuss the multiple physical length scales in the problem, and the limitations of the two approaches.

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