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Simulating binary black hole systems with intermediate mass ratios¹ ERIC HIRSCHMANN, Brigham Young University, MILINDA FERNANDO, University of Texas, Austin, DAVID NEILSEN, Brigham Young University, HARI SUNDAR, University of Utah, YOSEF ZLOCHOWER, Rochester Institute of Technology — Binary black hole (BBH) systems with components that have very different masses are a subset of the BBH population that, from a computational perspective, are more challenging to simulate than near equal mass binaries. Their resource demands are significant and it is understood that successfully evolving these requires computational approaches that are tuned to this region of the parameter space. We combine two such approaches, namely a parallel octree-refined adaptive mesh and a wavelet adaptive multiresolution method to produce the mesh. This results in a highly scalable framework that allows for a more efficient and rapid simulation of such intermediate mass ratio BBHs. We present some results from these efforts.

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