

Abstract Submitted
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Simulations of coalescing binary black holes: Testing and validation MARK SCHEEL, California Institute of Technology, SXS COLLABORATION — Gravitational waves from binary black hole systems are expected to be measurable by Advanced LIGO within a few years. We have constructed a pseudospectral evolution code that can accurately simulate such a system through dozens of orbits, plus merger and ringdown, for generic parameter choices including those that lead to significant precession. We are building a database that so far includes over 100 many-orbit high-accuracy BBH simulations, which can be downloaded and used for LIGO science. We discuss how we estimate errors in these simulations, and we present tests of robustness over different choices of simulation details such as gauge conditions, wave-extraction technique, and initial data formulation.

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