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Comparing Remnant Properties from Horizon Data and Asymptotic Data in Numerical Relativity[1] DANTE IOZZO, Cornell University, LEO STEIN, University of Mississippi, NEEV KHERA, Pennsylvania State University, MICHAEL BOYLE, Cornell University, KEEFE MITMAN, NILS DEPPE, California Institute of Technology, LAWRENCE KIDDER, Cornell University, JORDAN MOXON, California Institute of Technology, HARALD PFEIFFER, Max Planck Institute for Gravitational Physics, MARK SCHEEL, California Institute of Technology, WILLIAM THROWE, Cornell University, SAUL TEUKOLSKY, Cornell University, California Institute of Technology, SIMULATING EXTREME SPACETIMES COLLABORATION — We present a new study of remnant black hole properties from 13 binary black hole systems, numerically evolved using the Spectral Einstein Code. The mass, spin, and recoil velocity of each remnant were computed locally from apparent horizon data and asymptotically from the Bondi data $(h, \psi_4, \psi_3, \psi_2, \psi_1)$ made available at future null infinity with a Cauchy characteristic evolution. We compare these two independent measurements of the remnant properties, giving insight into how well asymptotic waveforms reveal local information of the remnant black hole in numerical relativity. This study highlights the importance of fixing the BMS frame of numerically determined waveforms.

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