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Expanding the catalog of binary black-hole simulations: aligned-spin configurations TONY CHU, Princeton University, HARALD PFEIFFER, Canadian Institute for Theoretical Astrophysics, MARK SCHEEL, BELA SZILAGYI, California Institute of Technology, SXS COLLABORATION — A major goal of numerical relativity is to model the inspiral and merger of binary black holes through sufficiently accurate and long simulations, to enable the successful detection of gravitational waves. However, covering the full parameter space of binary configurations is a computationally daunting task. The SXS Collaboration has made important progress in this direction recently, with a catalog of 174 publicly available binary black-hole simulations [black-holes.org/waveforms]. Nevertheless, the parameter-space coverage remains sparse, even for non-precessing binaries. In this talk, I will describe an addition to the SXS catalog to improve its coverage, consisting of 95 new simulations of aligned-spin binaries with moderate mass ratios and dimensionless spins as high as 0.9. Some applications of these new simulations will also be mentioned.

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