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Coalescing binary black holes: Applications enabled by many simulations HARALD PFEIFFER, Canadian Institute for Theoretical Astrophysics, SXS COLLABORATION — Recently, the Caltech-Cornell-CITA collaboration has succeeded in computing about 100 binary black hole (BBH) coalescence waveforms. These waveforms include a very long inspiral phase (some exceeding 60 cycles) and are of exquisite accuracy. The configurations simulated include extreme regions of the BBH parameter space like nearly extremal spins, high mass-ratios, and strongly precessing systems. This talk reports on applications of these waveforms to study strong field gravity and aid gravitational wave astronomy, in particular post-Newtonian comparisons and construction of template banks for BBH waveforms.

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