Tuning spin and eccentricity for generic binary black hole simulations HARALD PFEIFFER, Max Planck Institute for Gravitational Physics (Albert Einstein Institute), KATERINA CHATZIIOANNOU, Canadian Institute for Theoretical Astrophysics, SIMULATING EXTREME SPACETIMES (SXS) COLLABORATION — Numerical simulations of binary black holes play an important role in constructing waveform models for gravitational wave detectors, and in interpreting the recent gravitational wave observations by LIGO and Virgo. Such simulations require specification of initial data parameters, which indirectly control masses, spins and the geometry of the orbit, including the orbital eccentricity. Initial data parameters must be tuned to achieve a binary with certain physical properties. For zero eccentricity and non-precessing spins, this problem was solved by iterative eccentricity removal, where one analyzes preliminary evolutions, and then corrects the initial data parameters. This talk presents generalizations of this procedure that allow us to control the spin-directions even in the presence of precession as well as the orbital eccentricity.

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