Numerical simulations of binary black holes with nearly extremal spins[1] GEOFFREY LOVELACE, Cornell University — There is a significant possibility that astrophysically realistic black holes may have nearly extremal spins (i.e., spins close to 1 in dimensionless units). The prospect of observing the gravitational waves from a binary-black-hole merger with nearly extremal spins motivates the goal of simulating these systems numerically. These simulations must begin with initial data that satisfy the Einstein constraint equations; however, the commonly used methods of generating constraint-satisfying initial data cannot yield data with nearly extremal spins. In this talk, I will describe evolutions of conformally curved binary-black-hole initial data with nearly extremal spins using the Caltech-Cornell-CITA Spectral Einstein Code (SpEC).

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