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**Simulations of Black Hole-Neutron Star Binaries** FRANCOIS FOU-CART, MATTHEW DUEZ, LAWRENCE KIDDER, SAUL TEUKOLSKY, Cornell University — We present simulations of black hole-neutron star binaries aimed at the determination of the relative importance of different initial parameters. Keeping a constant mass ratio of 1:3, we vary the radius of the star, the stiffness of the equation of state, and the magnitude and orientation of the black hole spin. We discuss differences in the tidal interactions and the characteristics of the long-lived accretion disk which eventually forms, and we describe how these differences influence the gravitational waves emitted by the system. Using eccentricity removal techniques, we also assess the effect of small deviations from circular orbits due to imperfections in the initial data.

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