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Evolution of black hole-neutron star post-merger disks in axisymmetric relativistic hydrodynamics MILAD HADDADI, Washington State University, SXS COLLABORATION COLLABORATION — The remnant accretion disk from a black hole-neutron star binary merger can be responsible for electromagnetic counterparts to a gravitational wave signal. For example, a disk is needed for a short-duration gamma-ray burst, and disk winds can contribute to a kilonova. Numerical relativity simulations provide the only realistic post-merger initial state, but due to the cost of 3D simulations, these usually only cover the first tens of milliseconds. We report on our recent 2D black hole-neutron star post-merger disk simulations in axisymmetric relativistic hydrodynamics. We evolve the disk for a few hundred milliseconds from realistic initial data from 3D simulations. Our post-merger simulations employ an alpha viscosity model to account for angular momentum transport, and they include M1 neutrino transport for a more realistic evolution of the composition in the disk and its ejecta.

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