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Light from Inspiraling Binary Black Holes with Magnetized Mini-disks[1] SCOTT NOBLE, NASA/GSFC and the University of Tulsa, STEPHANE D'ASCOLI, Rochester Institute of Technology and Ecole Normale Superieure - Paris, MANUELA CAMPANELLI, DENNIS BOWEN, Rochester Institute of Technology, JULIAN KROLIK, Johns Hopkins University, VASSILIOS MEWES , Rochester Institute of Technology — Accretion disks around supermassive binary black holes offer a rare opportunity to probe the strong-field limit of dynamical gravity by using the ambient matter as a lighthouse. Accurate simulations of these systems using a variety of configurations will be critical to interpreting future observations of them. We have performed the first 3-d general relativistic magneto-hydrodynamics simulations of mini-disks about a pair of equal mass black holes in the inspiral regime of their orbit. In this talk, we will present results from general relativistic post-process radiative transfer calculations of this simulation. The goal of our work is to explore whether these systems provide a unique means to identify and characterize them with electromagnetic observations. We make use of the simulation's radiative cooling data so that the resultant electromagnetic emission is self-consistent with the simulation's thermodynamics. We will describe the found electromagnetic signatures, including spectra and images of the entire simulation domain while making note of the contributions from the different dynamical components of the accretion flow, such as the mini-disks. We will conclude by providing a context for our results and list our future avenues of exploration.

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