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Supermassive Black Hole Mergers in Magnetized Hot Accretion Flows TANJA BODE, PABLO LAGUNA, Georgia Institute of Technology — Electromagnetic emissions from gravitational wave sources such as supermassive black hole binaries will carry additional information of the environment in which the source is embedded. Using general relativistic simulations of tenuous gas on a supermassive binary's dynamic spacetime, we probe the regime where the strongest spacetime dynamics occur. Previous studies have shown supermassive black hole mergers in hot accretion flows to be accompanied by a robust pre-merger flare in bremsstrahlung emission, stemming from luminous density wakes and interbinary gas concentration, with an abrupt post-merger shut-off. Larger-scale simulations of galactic nuclei leave a gap in our understanding for the initial state of the gas several orbits before merger. We present results from the next step in the general relativistic study of electromagnetic counterparts to supermassive binary black hole mergers in hot accretion flows: binaries embedded in magnetized hot accretion flows.

Tanja Bode
Georgia Institute of Technology

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