

Abstract Submitted
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MHD Simulations of the Papaloizou-Pringle Instability in Massive Tori Around Spinning Black Holes in Full GR¹ ERIK WESSEL, VASILIOS PASCHALIDIS, Univ of Arizona, ANTONIOS TSOKAROS, MILTON RUIZ, University of Illinois at Urbana-Champaign — We present MHD simulations of the Papaloizou-Pringle Instability (PPI) in full GR. Our simulations are the first to explore the effects of BH spin and large disk masses on the development and saturation of the PPI. Disk-to-BH mass ratios range from $\sim 1/7$ to ~ 2 . The black hole spin magnitudes range from 0 to 0.7, with spins both aligned and anti-aligned with the disk's orbital angular momentum. We discuss the dynamics and their astrophysical implications, focusing on multimessenger signatures and the detectability of GW signals by present and future GW observatories.

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