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The Magnetothermal Instability And Its Role In Angular Momentum Transport in Hot, Dilute Magnetized Accretion[1] TANIM ISLAM, University of Virginia & École Normale Supérieure — Recent observations have demonstrated the prevalence of underluminous accretion flows in massive and supermassive central galactic black holes, for which the best studied example is that of Sagittarius A* at the center of our Milky Way. In addition, circular polarization measurements of millimeter-wavelength radiation from Sagittarius A* has shown the existence of measurable magnetic fields in the source. These flows are characterized by the radiatively inefficient accretion of a hot, mildly collisional to highly collisionless, and optically thin plasma onto a black hole. The energy generated through the accretion of matter down a gravitational well cannot be efficiently radiated and therefore must be advected outwards. We show that the collisionless and mildly collisional MTI, an MHD mode of a dilute rotationally supported plasma, can destabilize these dilute, magnetized, radiatively inefficient flows and can carry out angular momentum and energy in order to allow accretion to occur.

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