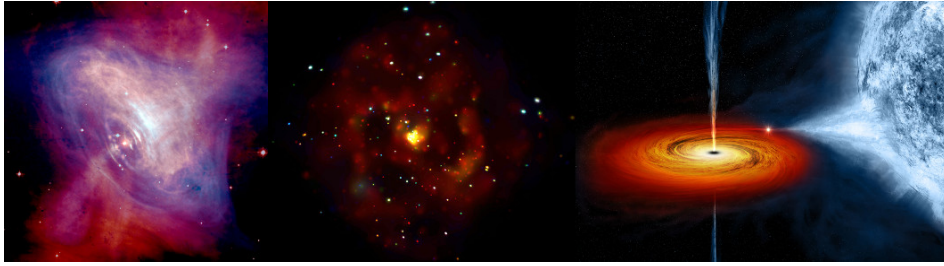


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3D global General Relativistic MHD simulations of strongly magnetized thin accretion disks

Monday, April 3, 2023 11:30 AM (25 minutes)

The radiation pressure supported standard accretion disk model (Shakura Sunyaev 1973 model) is prone to classical thermal and viscous instabilities. However, these instabilities are not observed in astrophysical systems as disks remain thermally stable for astronomical time periods. In this talk, I will show some of the key findings of strongly magnetized accretion disks simulated using 3D global radiative GRMHD simulations. We used a set of initial magnetic field configurations to produce an enhanced magnetic field amplification and hence stabilize the radiation pressure dominated accretion flows around stellar mass black holes. We also found that despite the magnetic pressure support, the luminosity and mass accretion rates do match with what is expected from a standard accretion disk model.

Presentation Type

Oral

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