

Flares in Sgr A* from GRMHD simulations

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Sgr A* exhibits flares at various wavelengths, but their origin remains unclear. Magnetic flux rope eruption from the black hole is one of the possible candidates for explaining the observed Sgr A* flares. Based on new 3D GRMHD simulations of magnetized accretion flows, we investigate the dynamics of magnetic flux ropes ejected from the vicinity of the black hole. We found the formation of magnetic flux ropes strongly depends on the size of the magnetic loops. We also calculate the emissions from the magnetic flux ropes. From the non-thermal emission models, we can reproduce the observation of near-infrared flares and time delay.

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