

BLACK HOLES IN DENSE STAR CLUSTERS
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TITLE: Magnetized gas clouds in the galactic center

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The gas cloud 'G2' has received a lot of attention recently due to the possibility that it will disrupt near pericenter and drive an episode of rapid accretion onto the black hole Sgr A*. I will discuss ongoing research into how magnetic fields and viscosity (both likely to be significant in the galactic center) modify this process. In particular, I'll show that gas clouds may be much longer-lived, and much more connected with their surroundings, than hydrodynamic simulations imply. I will also describe how preliminary inferences of a drag force from G2's orbit can be used to probe the galactic center accretion flow at a range of radii where no constraints on the gas currently exist. In a preliminary study, we infer a rotation axis for the accretion flow consistent with determinations made by the Event-Horizon Telescope; continued observations of G1 and G2 over the next ~5 years would strengthen these constraints considerably and also enable a determination of the density and rotation profiles of the gas in the galactic center.