Abstract Submitted
for the CUWIP22 Meeting of
The American Physical Society

**Gaseous Halos of Simulated Milky Way-like Galaxies**[1] BHAVYA PARDASANI, University of Illinois at Urbana-Champaign, ANDREW WETZEL, University of California, Davis, JENNA SAMUEL, University of Texas, Austin, FIRE COLLABORATION[2] — As satellite galaxies fall into the host halo, they interact hydrodynamically with the host galaxy, causing them to be stripped of their gas and subsequently cease forming stars. In order to investigate the role of the host halo in quenching satellite galaxies, we have characterized the halos of 14 Milky Way-like host galaxies from the FIRE simulations from $z = 0$ (present day) to $z = 1.76$ (10 Gyr ago). We have quantified the gas density of the host halo environment with respect to both distance from the host and galactocentric latitude. In general, the gas density decreases with increasing distance from the host and most of the halo gas profiles are well fit by a broken power law. At earlier times, the density in the inner regions of the host halos was enhanced relative to $z = 0$. This implies that an earlier infalling satellite experienced more ram-pressure stripping and was more efficiently quenched compared to a satellite that fell in later. We also find that in the inner halo of some hosts at $z = 0$ the density is larger close to the plane of the host galaxy disk versus above or below the disk, so satellites that orbit at lower galactocentric latitudes may be more efficiently quenched as well.

[1]NSF CAREER grant 2045928 and the REU program at UC Davis supported by NSF grant PHY-1852581
[2]Feedback in Realistic Environments

Bhavya Pardasani
University of Illinois at Urbana-Champaign

Date submitted: 10 Jan 2022 Electronic form version 1.4