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Impact of Orbital Dynamics on Dwarf Galaxy Quenching Near Massive Hosts RAVEN COCHRANE, CHARLOTTE CHRISTENSEN, GAEN MCCAN, COLEMAN THOMPSON, Grinnell College — Dwarf galaxies provide a useful environment to study the forces driving galaxy evolution and quenching at small scale. Using numerical cosmological simulations of dwarf galaxy evolution, we examine the impact of orbital dynamics on the quenching of dwarf halos, particularly the significance of a halo's first infall into R_{vir} of the host. We analyzed very high resolution ΛCDM cosmological simulations centered on four Milky Way-mass hosts and their 29 satellites computed using the tree+SPH code CHANGA. We examined the distribution of the ratios of sSFR at infall to the average sSFR over the previous 1.05 Gyr, trends of sSFR and P_{ram} over time and distance, and dwarf halo orbital histories. We find that a dwarf halo's first infall into the host does not correspond with its peak SFR although there is often moderate enhancement. We find that P_{ram} is not distance-dependent until 6 Gyr into the simulation and that sSFR depends on time rather than distance. We find no evidence that increasing P_{ram} while approaching R_{vir} of the host contributes to the moderate sSFR enhancements at infall for most halos in the simulations. Our work implies that moderate SFR enhancements at infall before quenching are common although the mechanism responsible is unclear and requires more research.

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