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Bulk Velocity Dispersions and Dispersion Profiles for MW and Andromeda Dwarf Spheroidal Galaxies MATTHEW WALENTOSKY, BENJAMIN BLANKARTZ, STEPHEN ALEXANDER, Miami University — We present the results of simulations of the motion of stars in Dwarf Spheroidal Galaxies (dSph's) using both Newtonian and MONDian gravity. For each simulation, we integrate the motion of ten thousand stars that interact with a baryon cloud described by a Hernquist density profile. Using the best observed properties of several Milky Way and Andromeda dSph's, we calculate the bulk dispersion for several values of the mass-luminosity ratio (M/L). When we find the value of M/L that gives a good match with the observed bulk dispersion, we use that value to produce a dispersion profile, i.e. the dispersion as a function of distance from the center of the galaxy. We compare our results to Milky Way dSph's for which observed profiles have been measured, and Andromeda dSph's for which only bulk dispersions are available. We find that MONDian gravity produces good agreement with observed profiles; whereas, Newtonian gravity (without dark matter) produces profiles that do not agree with observations.

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