

Abstract Submitted
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The Dynamics of Stars in Dwarf Spheroidal Galaxies around the Milky Way in the MOND Regime RAED DIAB, STEPHEN ALEXANDER, Department of Physics, Miami University, Oxford, Ohio 45056, USA — We present in this study a new method of calculating dispersion profiles and bulk dispersions of three Milky Way dwarf spheroidal satellite galaxies that includes the MOND external field effect. We model the internal gravity of the dwarf galaxies as a Plummer potential and the external gravity of the host is assumed to be uniform. We calculate explicitly the orbital trajectories of ten thousand stars in these potentials. The bulk dispersion and dispersion profile are then calculated statistically. For each galaxy, we obtain results for Newtonian, isolated MOND, and external field effect MOND. By changing the mass-to-light ratio of the spheroidal galaxies we obtained results for bulk dispersions and dispersion profiles that fairly agree with observational data.

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