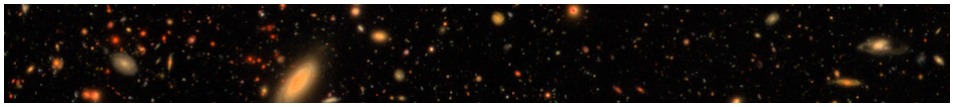

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The viability of ultralight bosonic dark matter in dwarf galaxies

Wednesday, 29 March 2023 11:10 (20 minutes)

The dark matter distribution in dwarf galaxies holds a wealth of information on the fundamental properties and interactions of the dark matter particle. We study whether ultralight boson dark matter is consistent with the gravitational potential extracted from stellar kinematics. We use velocity dispersion measurements from six classical dwarf galaxies to show that axion-like particles with masses of order m ~ 10^−22eV are inconsistent with the potential distribution in classical dwarf galaxies unless the hierarchical assembly of the Milky Way did not trace the mean evolution of Milky Way size halos.

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