

Fuzzy dark matter simulations

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Fuzzy dark matter (FDM), composed of ultralight bosons, is a compelling alternative to the standard cold dark matter paradigm. Its wave nature gives rise to a rich variety of distinctive phenomena on galactic scales, including the suppression of low-mass halos by quantum pressure, the emergence of ubiquitous density granules and vortices through wave interference, and the formation of compact solitonic cores at the centers of galaxies. In this talk, I will highlight numerical challenges and our recent advances in FDM simulations.