

Abstract Submitted
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Bose-Einstein Condensate Dark Matter and the Scaling of Ultra Compact Dwarf (UCD) Galaxies RAJPREET KAUR¹, University of Cincinnati — Ultra Compact Dwarf (UCD) galaxies are low-mass, dense galaxies that are theorized to be composed mostly of dark matter. Fuzzy dark matter (FDM) model proposes solutions to small-structure problems of the cold dark matter model (CDM) by modelling the core of the galaxies as the single flavor axion condensate. Since a UCD is approximately the same size as the core of a galaxy and is composed highly of dark matter, we can model UCDs as the single flavor axion condensate core. Using observational data for UCDs, we could find the scaling factor for UCDs and compare it to the theoretical scaling factor of a single flavor axion condensate to further investigate the compatibility of the FDM model in explaining the small-structure problems of the CDM model.

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