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The wave nature of Fuzzy Dark Matter

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Fuzzy dark matter (FDM) is made up of a very light axion of mass $\sim 1e-22eV$ governed by the Schrodinger-Poisson equation. The wave nature of FDM exhibits novel phenomena which can be used to observational probe and constrain the FDM model. In this talk, I will discuss how the wave interference of FDM leads to density fluctuations, the formation of vortices and filaments, and oscillation of the soliton core at the halo centre. Besides, I will also discuss how to constrain the FDM model from gravitational lensing and stellar dynamics.

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