

## Determining the Nature of Dark Matter with Astronomical Observations: Dwarf Galaxies and Small-Scale Structure

*Friday, 17 April 2026 13:30 (30 minutes)*

Despite decades of intensive direct detection searches across different dark matter candidates, no conclusive particle signal has been identified. This motivates complementary constraints on dark matter properties model independently from astronomical observations. In this talk, we focus on wave-like ultralight dark matter (ULDM) and its dynamical impact on dwarf galaxies. We will show that some observations favor a wave like dark matter and how the wave dark matter can remain consistent with existing limits.

**Primary author:** 毕, 效军 (中科院高能所)

**Presenter:** 毕, 效军 (中科院高能所)

**Session Classification:** Plenary Theory-Experiment Interplay 2: Precision Searches (Room 567, Chair Shao-Feng Ge)