

# Cosmological Simulations with Novel Dark Matter Physics

*Thursday 30 March 2023 10:30 (15 minutes)*

I will describe new cosmological zoom-in simulation suites that accurately resolve small-scale structure in the presence of novel dark matter physics. These simulations target Milky Way and strong lens analogs with initial conditions appropriate for a large variety of warm, interacting, and fuzzy dark matter models at and below current observational limits. Several of these simulations include strong, velocity-dependent dark matter self-interactions that yield distinctive predictions for structure on dwarf galaxy scales. Finally, I will present a new approach to simulate dark matter-baryon scattering in hydrodynamic simulations, and preliminary results.

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**Session Classification:** SESSION 6: Astrophysics and Cosmology-2 (CHAIR: Tommaso Treu- UCLA)

**Track Classification:** Dark matter and structure in the Universe