

## Small Scale Structure in Vector Dark Matter

Can we figure out the spin of dark matter from astrophysical observations? I will talk about new phenomenology of light vector dark matter including (i) a new class of polarized vector solitons (ii) interference patterns in density (iii) intrinsic spin. These effects lead to signals in astrophysics and direct detection that can potentially distinguish vector dark matter from their scalar counterpart (via substructure in halos, lensing, electromagnetic signatures etc.). Time permitting, I will discuss preliminary results for different formation mechanisms for vector dark matter and solitons, and also generalize to include non-gravitational interactions.