



A SPIN ON DARK MATTER

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What can we learn about the mass and intrinsic spin of dark matter particles from astrophysical observations? Whether the dark matter is a fermion and boson provides different lower bounds on the mass of DM particles. Conversely, I will argue that when dark matter is a sufficiently light boson, it becomes wavelike, and its spin can impact the (i) variation of dark matter density inside halos, (ii) lead to formation of solitons with macroscopic intrinsic spin, and (iii) lead to clues in initial conditions for formation of structure in the early universe. Time permitting, I might briefly discuss direct detection prospects for such dark matter, and novel connections to "spinor" Bose-Einstein Condensates in the laboratory.