LOWER BOUNDS ON THE MASS OF FERMIONIC DARK MATTER PARTICLES

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S u m m a r y

We constructed new lower bounds on the mass of Dark Matter (DM) particles coming from the analysis of a DM phase-space distribution in different classes of DM-dominated objects (dwarf spheroidal galaxies (dSphs), spiral galaxies, and galaxy groups). For each type of objects, we derived two such bounds. The first, model-independent bound, depends on the information about the current phase space distribution of DM particles only. The stronger, model-dependent bound is quoted for a model of thermal relativistically decoupled DM particles. After that, we discuss possible domains of applicability of the obtained bounds.