

Detecting Dipolar Dark Matter in Beam Dump Experiment

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We explore the possibility of detecting WIMP(Weakly Interacting Massive Particle) Dark Matter(DM) interacting via photon through its electric or magnetic dipole moments occurring at one loop, in so called Beam Dump experiments. We focus on one such experiment in particular, E613 in Fermilab, which involves a 400 GeV proton beam incident on a Tungsten target producing DM particles in this high energy collision. The DM particles so produced are then detected via scattering off lead nuclei placed behind appropriate shielding. We discuss the limits on the dipolar model of DM coming from such an experiment.

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