Abstract Submitted
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Probing Macroscopic Dark Matter Parameter Space JAGJIT SIDHU, Case Western Reserve University — Macroscopic dark matter (aka macros) constitutes a broad class of alternatives to particle dark matter with still significant unprobed regions of parameter space. Macros would interact with atoms or molecules through elastic scattering with (essentially) their geometric cross section. The initial energy transfer will result in high temperatures in the immediate vicinity of the trajectory of the macro, sufficient to ionize atoms and molecules. I will describe efforts to push down the existing constraints across a wide range of remaining masses. I discuss plans to use slabs of granite, which are typically very old, to constrain macros of low to moderate masses. I will discuss constraints derived from a lack of impacts that would have produced a devastating injury similar to a gunshot wound on the carefully monitored population of the Western world. I will also discuss how planned expansions of the Desert Fireball Network in Australia will allow a wide range of masses and cross sections to be constrained in upcoming decades.

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