

Abstract Submitted
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Constraints on Universal Extra-Dimensional Dark Matter from Direct Detection Results TREVOR TORPIN, GINTARAS DUDA, Creighton University — Detection of dark matter is one of the most challenging and important problems in astro-particle physics. One theory that produces a viable particle dark matter candidate is Universal Extra Dimensions (UED), in which the existence of a 4th spatial dimension is theorized. The extra dimension is not seen because it is compactified on a circular orbifold whose radius is too small to be observed with current technology. What separates this theory over other Kaluza-Klein-type theories is that UED allows all standard model particles and fields to propagate in the extra dimension. The dark matter candidate in UED theories is a stable particle known as the Lightest Kaluza-Klein Particle or LKP, and the LKP can exist with sufficient relic density to serve as the dark matter. This work will present bounds on UED model parameters from direct dark matter searches such as the CDMS II.

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