

SuperCDMS and the magic WIMP: A "CUTE" tale of a dark matter hunt

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The several decades-long search for dark matter has resulted in over twenty direct detection experiments spread across the world, but none have yielded a consistent discovery of a candidate signal. Nevertheless, hope remains in the vast unexplored regions of the dark matter parameter space, with many next generation direct detection experiments turning their focus towards the low mass region. SuperCDMS (previously CDMS) is a direct detection experiment with over 30 years of experience carving boundaries at the lowest dark matter masses. The next generation of the experiment is projected to be one of the most sensitive searches for low mass dark matter yet. So, what prospects lay ahead for SuperCDMS? What do we know about our detectors and what does that mean for our dark matter sensitivity? Can AI help us find dark matter? Cometh and hear ye, as SuperCDMS sets out to pen a new chapter in its long tale...