

Abstract Submitted
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New Experimental Constraints in a New Landscape for Composite Dark Matter¹ CHRISTOPHER CAPPIELLO, Ohio State Univ - Columbus, JUAN COLLAR, University of Chicago, JOHN BEACOM, Ohio State Univ - Columbus — Recently, it was shown that the scattering cross sections for point-like dark matter with nuclei cannot be significantly larger than the geometric cross sections of these nuclei. This invalidates many claimed experimental constraints on strongly interacting dark matter, leaving a large window of high-cross section parameter space unprobed. The only way for dark matter to have a cross section in this parameter space is for it to be a composite particle, with a geometric size much larger than that of a nucleus. We use a liquid scintillator-based dark matter detector to set new constraints on heavy, composite dark matter, closing off much of the newly enlarged window in dark matter parameter space.

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