

Abstract Submitted  
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**Interpreting direct detection limits for heavy dark matter<sup>1</sup>**

MICHAEL CLARK, Purdue University — Heavy particle dark matter near the Planck mass presents an interesting and relatively unexplored parameter space. Multiply-interacting massive particles (MIMPs) are heavy dark matter particles that interact strongly with regular matter but may have evaded detection due to the low number density required to make up the local dark matter halo. These particles could leave track-like signatures in current experiments, similar to lightly-ionizing particles. Previously calculated limits from the MAJORANA Demonstrator on the flux of lightly-ionizing particles can be used to exclude MIMP dark matter parameter space. In this talk I will present our reinterpretation of the MAJORANA limits, as well as projected sensitivity from the current leading WIMP search XENON1T in this high-mass regime.

<sup>1</sup>Interpreting MAJORANA and XENON limits for heavy dark matter

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