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Shining Light on Dark Matter in the MeV Regime TIM LINDEN, The Ohio State University — For several decades, the WIMP miracle has served as a driving inspiration for studying dark matter models at mass scales of 100 GeV. Recently, however, a combination of indirect, direct, and collider searches have placed strong constraints on GeV dark matter particles. Interestingly, the vast majority of these methods become relatively insensitive to dark matter particles with energies below 1 GeV, while several of the same theoretical motivations for studying GeV-scale dark matter still motivate similar searches in the MeV regime. In this talk, I will discuss the prospects for indirectly detecting MeV dark matter, focusing first on the motivations and challenges for dark matter model building at this scale, before discussing in detail the unique indirect detection signatures present in this regime. I will conclude by presenting a plan of attack aimed and efficiently transferring our understanding of GeV indirect detection techniques into the MeV range.

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