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Migdal effect as an inelastic channel in dark matter direct detection

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The Migdal effect in a dark-matter-nucleus scattering extends the direct search experiments to the sub-GeV mass region through electron ionization with sub-keV detection thresholds. In this talk, I'll present a rigorous and model-independent "Migdal-photoabsorption" relation that links the sub-keV Migdal process to photoabsorption. This relation is free of theoretical uncertainties as it only requires the photoabsorption cross section as the experimental input, and can be applied for most common detectors in the market.

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