## Phenomenology 2018 Symposium



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## Dark Photons from Captured Dark Matter Annihilation

Tuesday 8 May 2018 15:30 (15 minutes)

Dark matter particles traveling through the solar system may scatter off of nuclei in bodies like the Sun and the Earth and become gravitationally trapped. If the dark matter interacts with the Standard Model through a light mediator, the captured dark matter population will annihilate to produce these mediators, and their decays furnish a "smoking gun" signature of dark matter. We examine in detail the case of dark matter interacting through the dark photon portal and find regions of parameter space untouched by current analyses where dark matter may still be discovered by existing experiments.

**Summary** 

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