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## Dark matter from the dark axion portal

*Tuesday 23 September 2025 11:20 (20 minutes)*

In this talk, I will discuss dark matter production through the “pure dark axion portal”, which describes the interaction between axions, photons, and dark photons. Under certain conditions, dark matter is produced via the freeze-in mechanism, leading to rich phenomenology. In particular, the heaviest particle in the dark sector decays into a lighter one and a photon. This model predicts a well-defined parameter space featuring a cold dark matter candidate that can be searched for. It also presents unique features that can be tested through cosmological and laboratory observations.

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