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Forbidden Dark Matter with Sommerfeld Enhancement

Tuesday, 17 February 2026 17:00 (20 minutes)

We discuss the Sommefeld enhancement of the annihilation cross section of dark matter into heavier unstable particles which have long-range interaction with each other. Since annihilation products become non-relativistic near kinematical threshold, the wave function is modified from the plain wave, and significant enhancement of the annihilation cross section can be induced. In this talk, we discuss the formulation of the Sommerfeld enhancement from the annihilation products, and show that the finite decay width of the annihilation products induces resonances of bound-states near threshold in analogy with top-antitop pair production.

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