

## Sommerfeld Enhancement in the light of Halo gamma-ray excess

*Wednesday, 18 February 2026 10:40 (20 minutes)*

We examine Sommerfeld enhancement in dark matter annihilation as a potential origin of the halo-like gamma-ray excess near  $E \sim 20$  GeV reported by Totani. A minimal model with a light CP-even scalar mediator naturally produces a velocity-dependent annihilation cross section consistent with thermal freeze-out, the Milky Way excess, and limits from dwarf spheroidal galaxies. We discuss future prospects on this issue with other Galactic gamma-ray and cosmic ray excess.

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**Session Classification:** parallel session A: DM