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X-rays constraints on sub-GeV Dark Matter

Monday 28 August 2023 15:15 (15 minutes)

In this talk, I will present updated constraints on 'light' dark matter (DM) particles with masses between 1 MeV and 5 GeV. In this range, we can expect DM-produced e^\pm pairs to upscatter ambient photons in the Milky Way via Inverse Compton, and produce a flux of X-rays that can be probed by a range of space observatories. Using diffuse X-ray data from XMM-Newton, INTEGRAL, NuSTAR and Suzaku, we compute the strongest constraints to date on annihilating DM for $200 \text{ MeV} < m_{DM} < 5 \text{ GeV}$ and decaying DM for $100 \text{ MeV} < m_{DM} < 5 \text{ GeV}$. I will also discuss possible future developments of these results and this technique.

Submitted on behalf of a Collaboration?

No

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