



Contribution ID: 465

Type: Poster

Solar constraints on captured electrophilic dark matter

Friday, 8 July 2022 20:10 (20 minutes)

Dark matter captured by interaction with electrons inside the Sun may annihilate via long-lived mediators to produce observable gamma-ray signals. We utilize solar gamma-ray flux measurements from the Fermi Large Area Telescope and High Altitude Water Cherenkov observatory to put bounds on the dark matter electron scattering cross-section. We find that our limits are four to six orders of magnitude stronger than the existing limits for dark matter masses ranging between GeV to PeV scale.

In-person participation

Yes

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