

Contribution ID: 814

Type: Poster Presentation

Solar $\gamma\text{-rays}$ as a Complementary Probe of Dark Matter

We show that observations of solar γ -ray fluxes offer a novel probe of dark matter, in scenarios where interactions with the visible sector proceed via a long-lived mediator. As a proof of principle, we demonstrate that there exists a class of models which yield solar γ -ray lines observable with the next generation of γ -ray telescopes, while being allowed by a large variety of experimental constraints. Our results suggest that fluxes of solar γ -ray lines can be up to two orders of magnitude higher than the ones from the galactic center, and are subject to very low backgrounds. Solar γ -ray observations are complementary to the future direct/indirect dark matter detection efforts, especially when dark matter capture and annihilation in the Sun happen out of equilibrium.

Experimental Collaboration

Primary authors: ARINA, Chiara (CP3 UCLouvain); BACKOVIC, Mihailo (CP3-UCL); HEISIG, Jan (RWTH Aachen University); Dr LUCENTE, Michele (CP3-UCL)

Presenter: Dr LUCENTE, Michele (CP3-UCL)

Session Classification: Poster session

Track Classification: Dark Matter