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Type: **Talk**

Antimatter Cosmic Rays and Dark Matter

Wednesday, August 25, 2021 12:30 PM (30 minutes)

Over the last years, satellite experiments as the Alpha Magnetic Spectrometer on board the International Space Station measure antimatter cosmic ray fluxes, including antiprotons and recently antimatter nuclei. These measurements provide a novel probe to search for new physics including annihilations of dark matter in the Milky Way. I will present an excess of cosmic-ray antiprotons at the GeV range, that could be accounted for by a dark matter particle in the mass range of 50 to 90 GeV. I will also discuss the prospects of detecting anti-deuterons and anti-Helium nuclei produced both from inelastic collisions of high energy cosmic-rays with the interstellar medium gas and from dark matter annihilations. Interestingly, under certain astrophysical assumptions AMS may detect cosmic-ray anti-deuterons and anti-Helium from annihilating dark matter particles.

Is this abstract from experiment?

No

Name of experiment and experimental site

N/A

Is the speaker for that presentation defined?

Yes

Details

Ilias Cholis, Assistant Professor, Oakland University, USA,
https://files.oakland.edu/users/cholis/Cholis_webpage/iliascholis.htm

Internet talk

Yes

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Session Classification: D Cosmology, Astrophysics, Gravity, Mathematical Physics