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Excesses in Cosmic-Ray Antinuclei

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Observations by AMS-02 on the International Space Station have tentatively detected approximately 10 events that are consistent with antihelium nuclei. Such a detection would be of significant theoretical interest due to the difficulty in producing any detectable antihelium flux through standard model interactions. In this talk, I will discuss the state of these observations, the state of models that are capable of producing such observations – and the possibility that dark matter may first be detected due to its exceedingly rare annihilations into heavy antinuclei states, compared to more standard processes that produce gamma rays, positrons, or antiprotons.

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