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Hadronic Cosmic Rays: Towards the Precision Era

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Cosmic ray experiments are reaching the sensitivity where they can realistically probe the annihilation of thermal WIMPs. Due to the tiny experimental errors, uncertainties in the astrophysical backgrounds have become the most
limiting factor for dark matter detection. I will use the combination of antiproton, boron to carbon and positron data in order to systematically reduce uncertainties related to cosmic ray propagation. Furthermore, I will employ a wide collection of accelerator data to improve the astrophysical source term for antiprotons, and point out implications for antideuteron formation. I will discuss results from a spectral search for dark matter annihilation in the AMS-02 antiproton data and comment on prospects for dark matter detection with antinuclei.

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