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Cosmic ray antiprotons : where are we ?

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The antiproton-to-proton ratio is about to be published by the AMS collaboration. Any excess with respect to the astrophysical background could potentially be the eagerly awaited signal for the presence of WIMPs inside the Milky Way. These massive and weakly interacting species are natural candidates for the astronomical dark matter. Pervading the Galaxy, they are expected to pair-annihilate and yield antiprotons. If so, the antiproton flux at the Earth would be anomalously large.

I will present recent calculations of the antiproton background and will review how precisely it can be estimated, paying particular attention to the limits set by the positron flux on the cosmic ray propagation parameters. I will show that no claim of an antiproton excess can be made at the moment. I will finally comment on how constraining the new data are on WIMP properties.

Summary

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