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Contributions from the fixed target program of the LHCb experiment to the understanding of antimatter in cosmic rays: status and prospects

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Antimatter in cosmic rays is a powerful probe for the indirect
detection of Dark Matter. To constrain the background from secondary antiparticles, produced during cosmic ray propagation through the interstellar medium, the related cross sections need to be determined more precisely at accelerator facilities. The LHCb experiment currently offers the unique fixed-target facility exploiting the beam energy provided by the LHC and can reproduce cosmic collisions between protons at the TeV scale and gas targets of helium and, soon,hydrogen and deuterium. The status and prospects for this campaign ofantimatter production measurements will be discussed.

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Particle physics

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