

# Joint 20th International Workshop on Hadron Structure and Spectroscopy and 5th workshop on Correlations in Partonic and Hadronic Interactions



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## AMBER Antiproton Production Measurements: A Contribution to Dark Matter Search

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One of the indirect detection method of dark matter (DM) is based on the search of the products of DM annihilation or decay. They should appear as distortions in the gamma rays spectra and in the rare Cosmic Ray (CR) components, like antiprotons, positrons and antideuterons, on top of the standard astrophysical production. In particular, the antiprotons in the Galaxy are mainly of secondary origin, produced by the scattering of cosmic proton and helium nuclei off the hydrogen and helium in the interstellar medium (ISM). In order to obtain a significant sensitivity to DM signals, accurate measurements of the antiproton production cross section in p-p and p-He collisions are crucial. The AMBER experiment at CERN collected in 2023 the first data ever in p-He collision at a center of mass energy from 10 to 21 GeV. The 2024 AMBER program with proton beam on liquid hydrogen and deuterium targets is also described.

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