



Contribution ID: 226

Type: Oral presentation (young scientists)

Reference measurements for indirect dark matter searches with p+C collisions at the NA61/SHINE experiment.

Thursday 21 July 2022 15:30 (10 minutes)

NA61/SHINE is a large-acceptance fixed-target experiment located at the CERN SPS, which studies final hadronic states in interactions of various particles and nuclei. It is unique in terms of providing data on a variety of collision systems at different collision energies. This allows for wide deuteron, antiproton and antideuteron production cross-section studies. The latter are currently considered a possible dark matter interaction signal with exceptionally small background. The measurements on carbon targets are important to reduce systematic experimental effects due to experiment-internal antideuteron production, as the most abundant element in the path of an incoming particle for the AMS-02 experiment is carbon. My talk will focus on analysis of NA61/SHINE data on p+C thin target collisions in the context of light (anti)nuclei production. I will present a preliminary analysis of experimental data and discuss quality cuts and the particle identification method as well as current deuteron and antideuteron yields.

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Session Classification: Parallel 3C - Indirect searches