

Light (anti)nuclei production cross section studies in p+C collisions at the NA61/SHINE experiment.

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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 target 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 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 present deuteron and antideuteron yields.

Keywords

dark matter indirect signals; antideuterons; low background; heavy ion collisions;

Collaboration

other Collaboration

NA61/SHINE

Subcategory

Experimental Results

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