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New boundaries for the ppK^- production in $p+p$ collisions

Monday, 2 June 2014 16:00 (0:20)

Collaboration

HADES

Abstract content

The ppK^-, a well established state in theory, is a hot candidate for a new kind of hadronic matter. A type of matter where kaons are bound to nucleons. The HADES spectrometer at GSI provides ideal conditions to test the existence of this cluster of particles. HADES has recorded $p+p$ collisions at a beam energy of 3.5 GeV that we have analysed for events where a p, K^+ and Λ were produced in the final state. I will discuss how these three particles are connected to the ppK^- and how we tested the p, K^+, Λ events for the fingerprints of a possible ppK^- production. In this talk, I will present how a partial wave analysis lead to the establishment of an upper limit of the production cross section of this cluster. We cannot confirm the findings of the DISTO collaboration at a lower beam energy of 2.8 GeV.

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