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Hyperon-production in proton-proton collisions at 4.5 GeV with HADES

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This work presents a preliminary analysis of the $p + \Lambda^0 + p + p$ final state in proton-proton scattering using data collected at $T = 4.5$ GeV with HADES at GSI in Darmstadt, Germany. The production of hyperons is of particular interest since it provides information about the role of N^* resonances in strangeness production in NN interactions. Furthermore, this study could be relevant in describing the dynamics of high-density matter such as that located at the core of neutron stars. This talk will introduce some of the data-driven analysis procedures that have been developed to select the final-state of interest. In particular, a kinematic fitter has been used to efficiently select the signal for this exclusive state. Additionally, we present and discuss the findings from an analysis that explores the role of intermediate processes involving intermediate baryon and mesonic excitations.

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