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Recent results from the DsTau(NA65) experiment at the CERN-SPS

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The DsTau(NA65) experiment at CERN aimed to measure an inclusive differential cross-section of Ds production with decay to tau lepton and tau neutrino in proton-nucleus interactions. The DsTau detector is based on the nuclear emulsion technique, which provides excellent spatial resolution for detecting short-lived particles such as charmed hadrons. We present the first results from the analysis of data collected during the pilot run in 2018 and discuss the accuracy of reconstructing proton interaction vertices in a high track density environment. The gathered data has been compared with several Monte Carlo event generators, with a focus on the multiplicity and angular distribution of charged particles. The multiplicity distribution from p-W interactions has been tested for KNO scaling and was found to be nearly consistent. Additionally, we performed the first measurement of the interaction length of protons in tungsten. We also present the current status of our search for Ds decay and provide preliminary estimates of the differential production cross-section of Ds.

Secondary track

T05 - QCD and Hadronic Physics

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