

New high precision data on the differential cross sections of the pion-proton elastic scattering

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Collaboration

EPECUR

Abstract content

The EPECUR collaboration presents new high precision data on the pion-proton elastic scattering in the second resonance region. The experiment EPECUR is placed on the universal beam channel of the accelerator ITEP. The setup features 0.1% beam pion momentum tagging system; 25 cm long liquid hydrogen target, placed in mylar container and beryllium outer shell; low material wire drift chambers and high performance DAQ. More than 3 billions of triggers collected. The data covers pion beam momentum range 0.8 - 1.3 GeV/c and 40-120 degrees center-of-mass scattering angle range for both positive and negative pions. The measured differential cross section has 1% statistical accuracy in 2 degrees angle and 5 MeV/c momentum intervals.

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