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Hadron spectroscopy and exotics (experiment and theory)
Experiment: Spin rotation parameter A and R measurements by
PNPI-ITEP collaboration
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Results of the spin rotation parameters A and R measurements for the elastic pion-proton scattering in the D13(1700), S31(1900) and P33(1920) resonances region.

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Abstract

The spin rotation parameters A and R were measured for the elastic pion-proton scattering by the PNPI-ITEP collaboration in the D13(1700), S31(1900) and P33(1920) resonances region. The main goal of the experimental program is to resolve the current partial-wave analyses (PWA) uncertainties. Simultaneously with A and R the polarization parameter P was measured with the purpose to improve the experimental data base and estimate the systematic errors.

The results of this work are in agreement with last PWA's SM95, SM99 (Virginia Polytechnic Institute) predictions for both of $\pi \pm p$ elastic scattering. The D13(1700), S31(1900) and P33(1920) resonances are not seen in any of solutions by the VPI (GWU) group.

The set up included a longitudinally polarized proton target with superconductive magnet, multiwire spark chambers and carbon polarimeter. The experiment was performed at the ITEP proton synchrotron, Moscow.

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