

# **$\Lambda$ -Polarization Measurement in $\pi^- p \rightarrow K^0 \Lambda$ in the Framework of "EPECUR" Experiment Proposal.**

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The idea of "EPECUR" was inspired by the recent splash of the activity around the pentaquark matters. The goal of the experiment is the search for narrow resonant states in the reactions  $\pi^- p \rightarrow \pi^- p$  and  $\pi^- p \rightarrow K^0 \Lambda$  based on the very precise cross-section measurements in fine energy steps of 0.5 MeV or better in terms of the invariant mass. As a valuable byproduct of the second stage of the experiment,  $\Lambda$ -polarization in  $\pi^- p \rightarrow K^0 \Lambda$  can be measured, based on the well-known weak  $\Lambda$ -decay asymmetry. The expected statistical significance of the measurement overrides the best existing data by NIMROD by an order of magnitude. The experimental setup is under construction at the ITEP proton synchrotron in collaboration with PNPI.