



Modane, 08/08/2017

Report on PAINUC: investigation of pion interactions with the ^4He nucleus at beam energies below the Δ -resonance

The Project PAINUC « Investigation of pion interactions with ^4He nucleus at beam energies below the Delta-resonance » is one of the components of the theme « Physics of light mesons »

The PAINUC team is analysing the $\pi^+{}^4\text{He}$ interactions data taken at Dubna Phasotron with self-shunted streamer chamber developed at JINR Dubna to study several channels on three-pion events. The main objective is to measure the difference in the cross section $\pi^-{}^4\text{He}$ and $\pi^+{}^4\text{He}$ and to measure the Δ^0 resonance mass. New results have been presented recently in conference. The next plan is to continue the analysis of all four components of the Δ_{33} resonance and to identify clearly the Δ^- component.

For the future, the team would like to keep in working conditions the STREAMER setup, to increase the intensity of the phasotron pion beam, to perform experiments with different pions beam energies and to analyse data.

In conclusion, the proposed plan for project PAINUC has reasonable scientific objectives with reasonable requested resources. The PAC should encourage the team to have a more aggressive strategy for publication. I suggest to provide the requested financial support.

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