

Asymmetry and Spatial Symmetry Breaking Effects Modeling in (n,p) Reaction

C. Oprea, A.I. Oprea

*Frank Laboratory of Neutron Physics (FLNP), Joint Institute for Nuclear Research (JINR)
141980 Dubna, 6 Joliot Curie str., Moscow Region, Russian Federation*

Abstract. Asymmetry and spatial parity breaking effects in nuclear reaction induced by slow and resonant neutrons on ^{35}Cl nucleus followed by protons emission were analyzed. Effects were obtained applying Flambaum–Sushkov formalism using two-level approximation. In the computer simulation different types of target and neutrons incident flux were considered. Obtained results are compared with existing experimental data. Some differences between theoretical evaluation, computer modeling and experimental data are explained considering contributions of other open channels.

The present evaluations are realized in the frame of the scientific program of FLNP dedicated to the investigation of symmetry breaking effects in slow neutrons induced processes. The results will be used in the future experiments planned at IREN, the FLNP neutron source and other neutrons facilities from abroad.