

# Parity Violation Effects in Nuclear Reactions at Low Energy

**A. Oprea, C. Oprea**

141980 Dubna, Moscow Region, Russian Federation, Joint Institute for Nuclear Research (JINR) Frank Laboratory for Neutron Physics (FLNP)

Parity violation effects in nuclear reactions was observed for the first time in the beginning of the sixties years of the last century when in the capture of thermal transversal polarized neutrons by Cadmium nuclei an asymmetry of emitted gamma quanta was observed. After, similar effects in experiments on other nuclei and reactions were observed and these experimental results were explained by the existence of weak interaction between nucleons in compound nuclei. These experimental results lead to an intense theoretical development in order to describe the new phenomena.

The theoretical approach developed by Flambaum and Sushkov is a successful one especially for nuclear reactions induced by thermal and resonant neutrons for medium and heavy nuclei. In this formalism it is supposed that neutron reactions are going with formation of a compound nucleus characterized at least by two states (resonances) with the same spin and opposite parities.

In this work the authors will present results on parity violation effects in neutron scattering on heavy nuclei and nuclear reactions induced by neutrons with emission of charged particles for medium nuclei.