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Use of Computational Simulations for Analysis of Parity Violation Experiments with Neutrons JONATHAN SERPICO, IVAN NOVIKOV, Physcis and Astronomy at Western Kentucky University — We developed and analyzed the results of computer simulations of experiments in which parity violating and parity conserving asymmetries are measured in nuclear reactions with neutrons. The software utilizes parallel computing technologies. The value of the parity violating and parity conserving asymmetries and their accuracies were obtained for various neutron beam parameters, targets, and configurations of detection systems. The energy dependence of parity violating and parity conserving amplitudes were obtained in the framework of reaction theory.

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