

DISCRETE SYMMETRY TESTS IN NEUTRON-INDUCED COMPOUND STATES

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The neutron absorption in eV region is dominated by capture process via well-resolved compound states. The parity violation is known to be largely enhanced in p-wave compound resonances according to the interference between neighboring resonances with different angular momentum of incident neutrons. The interference is theoretically predicted to cause an enhancement in the observation of T-odd spin correlation terms which may contained in meson-nucleon interactions. The enhanced sensitivity to T-violation, that signals CP-violation via the CPT-theorem, can deliver a competitive discovery potential with the neutron electric-dipole-moment measurement in the search for new physics beyond the standard model. We report the study of the interference mechanism to quantify the experimental sensitivity to T-violation and discuss possible experiments with the pulsed neutron beam from intense spallation neutron sources.