

Abstract Submitted
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General classification and analysis of neutron beta-decay experiments VLADIMIR GUDKOV, Univ. of South Carolina, JOHN CALARCO, Univ. of New Hampshire, GEOFFREY GREENE, Univ. of Tennessee and ORNL — A method for general analysis of the sensitivities of neutron beta-decay experiments to manifestations of possible deviations from the Standard model is proposed. We take into account all known (radiative and recoil) corrections which are consistent with the Standard model for description of angular correlations in neutron decay in the first order of approximation, or up to level of 10^{-5} (see, for example ref.[1]). The contributions from models beyond the Standard model are, for low energy neutron decay, parameterized in terms of vector, axial-vector, scalar and tensor coupling constants [2] and in terms of parameters related to specific models [3]. For the present analysis we derive the exact expressions for neutron beta decay probability which includes all possible manifestations models beyond the Standard one up to level of 10^{-5} without time-reversal violation. Based on the general expressions for manifestation of the deviation from the standard model we present analysis of the sensitivities for selected neutron decay experiments. 1. S. Ando, H. W. Fearing, V. Gudkov, K. Kubodera, F. Myhrer, S. Nakamura and T. Sato, Phys. Lett. B 595, 250 (2004). 2. J. D. Jackson, S.B. Treiman and H. W. Wyld Jr., Nucl. Phys. 4, 206 (1957). 3. P. Herczeg, Prog. Part. Nucl. Phys. 46, 413 (2001).

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