Joint seminar of the NPI of the CAS

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Experimental Tests of the Standard Model of Weak Interactions

The Standard Model as a very succesful theory of electroweak interactions postulates the basic assumption about the pure "**V**(ector)-**A**(xial vector)" character of the interaction. Nevertheless, even after more than half a century of development of the model and experimental testing of its fundamental ingredients, experimental data still rule out the existence of other types of weak interactions (scalar, tensor) only at the ~several % level. No comprehensive review of the Standard model testing will be presented here but rather the selected fields where NPI Rez was involved will be described.

The Several experimental projects mainly at ISOLDE, CERN where physicists from NPI Rez were in last almost 30 years involved (NICOLE, WITCH, WISArD) are described. These projects use different experimental methods to perform measurements of specific low energy beta-decays which are sensitive to the forbidden components of weak interactions (tensor, scalar) and they try to search for these exotic interactions or at least significantly improve their current experimental limits. Current status of these projects, their motivation, experimental methods and results are described and discussed.

The seminar will take place on Thursday, May 11, 2023 at 10:00 a.m. in the NPI conference room.