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Beta-asymmetry measurements as a probe for non standard model physics

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The status of the beta-asymmetry measurements project will be presented. In these experiments we measure the beta-asymmetry parameter which is sensitive to deviations from the V –A character of the weak interaction, more precisely to tensor currents. The experimental technique we use to create a polarized ensemble of nuclei is low temperature nuclear orientation (LTNO).
The first (preliminary) results for the beta-asymmetry parameter will be presented for 60Co and 114In. These measurements were performed in Leuven and Louvain-la-Neuve preceding the on-line measurements with 67Cu at ISOLDE in the summer of 2006 and 2007. The first run 67Cu was successful but had a lack of statistics due to the low yield. This year the statistics was increased with a factor of 4 to 5. The data analysis is ongoing. 67Cu has a high sensitivity to possible tensor contributions in the weak interaction. We aim to improve the limits for tensor couplings which are currently of the order of 8 % in the amplitudes.
To reach the required precision we are using extensively GEANT4 Monte-Carlo simulations to get control of systematic effects such as scattering and magnetic field effects. A part of our research is therefore focussing on the performance of GEANT4 for beta decay measurements.

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