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## Status of the b-STILED project

Precision measurements in beta decay play an essential role in the search for new physics beyond the standard model (SM) by probing “exotic” phenomena such as scalar and tensor interactions. The presence of these interactions would lead to deviations in specific observables from their SM predictions. The study of the full beta energy spectrum offers a sensitive mean to probe these exotic interactions.

The goal of the b-STILED (b: Search of Tensor Interactions in nucLear bEta Decay) project is to perform the most precise measurement of the beta-energy spectrum in  ${}^6\text{He}$  decay. The objective is to extract the Fierz interference term  $b$  with a precision in the order of  $4 \cdot 10^{-3}$ . This term depends linearly on tensor interaction. A limiting instrumental effect in previous measurements of the beta energy spectrum is the partial energy loss due to electron backscattering outside the detector volume. The present project used two techniques to mitigate this effect. The first uses a low energy beam of  ${}^6\text{He}^+$  ions (25 keV) implanted between two scintillation detectors, whereas the second uses a high energy beam of  ${}^6\text{He}^+$  ions (312 MeV) implanted inside one scintillation detector to form a  $4\pi$  calorimeter. Both techniques ensure the deposition of the entire energy of the beta particles. Both measurements were performed at GANIL.

This contribution will present the overall context of the project, centering on the second experimental setup, and will report on the status of the data analysis.

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