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Measurement of In-115 β-decay with the ACCESS project

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Current bounds on neutrino Majorana mass are affected by significant uncertainties in the nuclear calculations for neutrinoless double-beta decay. A key issue for a data-driven improvement of the nuclear theory is the actual value of the axial coupling constant g_A , which can be investigated through forbidden β -decays. In this contribute, we present the first measurement of 4^{th} -forbidden β -decay of In-115 with a cryogenic calorimeter based on Indium Iodide, performed in the framework of the ACCESS project. Exploiting the enhanced spectral shape method for the first time to this isotope, our study accurately determines simultaneously spectral shape, g_A , and half-life. The Interacting Shell Model, which best fits our data, indicates a half-life for this decay at $T_{1/2} = (5.26 \pm 0.06) \times 10^{14}$ yr.

Poster prize

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