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The shape of the ^{66}Ga$\rightarrow^{66}$Zn ground state beta decay spectrum[1]
ELIZABETH GEORGE, PAUL VOYTAS, Wittenberg University, LYNN KNUTSON, University of Wisconsin–Madison, GREGORY SEVERIN, Riso National Laboratory for Sustainable Energy — The ground state branch of the beta decay of ^{66}Ga is a $0^+ \rightarrow 0^+$ transition with a relatively high *ft* value. Because of this large *ft*, the shape of the beta spectrum of this branch has been of interest historically for investigating higher order contributions to the decay. Previous measurements of the spectrum shape indicate that there are significant non-statistical components, but disagree on their sign and magnitude. As a test of the new Wisconsin iron-free superconducting beta spectrometer, we have made a precise measurement of the shape of the ground state branch of the ^{66}Ga beta spectrum. We obtain a shape that is in better agreement with a statistical shape than are previous measurements.

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