Abstract Submitted
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^{69}Kr β-delayed proton emission[1] A.M. ROGERS, C.J. LISTER, J.A. CLARK, S.M. FISCHER, S. GROS, E.A. MCCUTCHAN, G. SAVARD, D. SEWERYNIAK, ANL, J. GIOVINAZZO, B. BLANK, G. CANCHEL, CENBG/CNRS/IN2P3, G. DE FRANCE, S. GREVY, F. DE OLIVEIRA SANTOS, I. STEFAN, J.-C. THOMAS, GANIL — Proton-rich nuclei beyond the $N = Z$ line play a key role in our understanding of astrophysics, weak-interaction physics, and nuclear structure tests. In particular, the decay of ^{69}Kr populates states in the proton-unbound nucleus ^{69}Br. While recent measurements of ^{65}As and ^{69}Br have constrained key *rp*- process waiting points, spectroscopic and structural information remains elusive. An experiment was conducted at GANIL which utilized implant-β-p and β-γ correlations to study physics related to the β decays of ^{69,70,71}Kr. Isotopes were implanted into a Si-DSSD, also used to detect decay protons, located at the end of the LISE spectrometer. Coincident γ-rays were measured in surrounding HpGe EXOGAM clovers. We identified 212 ^{69}Kr implantation-decay events and observed a dominant superallowed β-decay branch ($T_{1/2} = 27(3)$ ms) to the isobaric analog state which decays via 2.97(5) MeV protons to the first excited state in ^{68}Se. This decay path strongly constrains the spin and mass of ^{69}Kr.

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