

Abstract Submitted
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β -decay study of neutron-rich ^{102}Rb at TRIUMF-ISAC¹ ZHIMIN WANG, SFU and TRIUMF — Experimental investigations of the β -decay properties of nuclei which lie along the astrophysical r-process are becoming possible with modern facilities and detection systems. In this experiment, a ^{102}Rb beam was produced by 500 MeV, 10 μA protons impinging on a multilayer UC_x target at TRIUMF-ISAC Facility. The beam of ^{102}Rb ions was implanted on a movable tape at the center of the 8π spectrometer. The 20 HPGe 8π γ -ray detectors were coupled with SCEPTAR, an hemispherical array of scintillators for β -tagging and DANTE, an array of five LaBr_3 detectors for fast γ -ray timing. A preliminary analysis has allowed the first identification of the 4^+ to 2^+ transition in the daughter nucleus, ^{102}Sr . A near identical low-lying band structure of ^{102}Sr with $^{98, 100}\text{Sr}$ nuclei has been observed, indicating the rigidly deformed rotational nature continues towards to the $N = 66$ midshell. The current experimental measurements of ^{102}Rb β -decay half life as well as the β -delayed neutron emission branching ratio compared with reported values, the shorter β -decay half life and the larger β -delayed neutron emission branching ratio will locally reshape astrophysical r-process predictions.

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