Abstract Submitted
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Reinvestigation of direct two-proton radioactivity of $^{94}Ag^m$(J^π= 21^+, 6.7 MeV)[1] JOSEPH CERNY, UC Berkeley/LBNL, D.W. LEE, LBNL, K. PERAJARVI, STUK, Finland, D.M. MOLTZ, B.R. BARQUEST, L.E. GROSSMAN, W. JEONG, C.C. JEWETT, UC Berkeley — Both direct one-proton decay and direct two-proton decay of $^{94}Ag^m$ from this long-lived (0.4 s) isomeric state have been reported by Mukha et al. in experiments performed with the GSI on-line mass separator [1]. In the former decay, two proton groups with energies of 0.79 and 1.01 MeV were observed, each having a branching ratio of about 2%; in the latter decay, coincident events with a threshold energy of 0.4 MeV and a summed decay energy of 1.9 MeV were observed in coincidence with γ-decays in the ^{92}Rh daughter and were assigned to be coincident protons with a branching ratio of 0.5(3)%. We have recently utilized our helium-jet system at the Berkeley 88-inch cyclotron to repeat this experiment, again employing the ^{58}Ni(^{40}Ca,p3n) reaction at 192 MeV. Reaction products were transported via a capillary to a detection area and collected on a slowly rotating wheel in front of an assembly of 24 $\Delta E_{gas} - \Delta E_{gas}$ - E_{Si} detector telescopes with a threshold of 0.4 MeV for identifying protons. The beta-particle background is reduced enough in several of these telescopes to clearly observe the 0.79 MeV single proton decay from $^{94}Ag^m$. Data analysis is continuing and results of the search for coincident, identified protons will be presented. [1] Mukha et al., Nature 439, 298 (2006) and references therein.

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