Abstract Submitted
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**First β-decay study with CARIBU and Gammasphere:** \(^{142,144}\text{Cs to}\ \text{Ba}\)^1 S. ZHU, M. ALCORTA, P.F. BERTONE, M.P. CARPENTER, C.R. HOFFMAN, R.V.F. JANSSENS, F.G. KONDEV, T. LAURITSEN, C.J. LISTER, R. PARDO, A.M. ROGERS, G. SAVARD, D. SEWERYNIAK, R. VONDRASEK, Argonne National Laboratory — As part of the commissioning of the CARIBU facility at ATLAS, beams of \(^{142}\text{Cs}\) and \(^{144}\text{Cs}\) ions from CARIBU was charge bred and, subsequently, accelerated to \(\sim 6\ \text{MeV/A}\) by ATLAS before being transported to the target location of Gammasphere. The \(^{142}\text{Cs}\) beam was implanted in a Pb foil with the rate of \(10^3\) ions/s for 16 hours and γ radiation following β decay (\(T_{1/2} = 1.68\)s) was detected by the 101 Compton-suppressed germanium detectors of the Gammasphere array. The power of the CARIBU-Gammasphere combination for β-decay investigations was demonstrated. The \(^{142}\text{Ba}\) level scheme was considerably expanded: 215 γ transitions have been identified and placed into an expanded level scheme with 71 states. Furthermore, a large number of spin-parity assignments were made based on the measured angular correlations. High-precision \(\log f t\) values were determined as well. The data provide important new information about the nature of low-spin excitations in this nucleus. In particular, new information is obtained about the strength of octupole correlations and the nature of other low-lying excitations.

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