Abstract Submitted
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$E2/M1$ Mixing Ratios in Transitions From the Gamma-Vibrational-Bands to the Ground-State-Rotational-Bands of ^{102,104,106,108}Mo, ^{108,110,112}Ru, and ^{112,114,116}Pd[1] JONATHAN M. ELDRIDGE, B. FENKER, C. GOODIN, J. H. HAMILTON, E. H. WANG, A. V. RAMAYYA, Vanderbilt University, A. V. DANIEL, G. M. TER-AKOPIAN, Y. X. LUO, J. O. RASMUSSEN, YU. TS. OGANESSON, S. J. ZHU, Fllerov Laboratory of Nuclear Reactions, JINR, Dubna, Russia — $E2/M1$ mixing ratios have been measured for transitions from states in the γ-vibrational-bands (I^+_γ) to states in the ground-state-bands (I^+_g or $[I-1]^+_g$) of the neutron rich, deformed isotopes, ^{102,104,106,108}Mo, ^{108,110,112}Ru, and ^{112,114,116}Pd, including from states as high as 9^+_γ. These measurements were done using the GAMMASPHERE detector array, which, at the time of the experiment, had 101 working HPGe detectors, arranged at 64 different angles. A 62 μCi source of ^{252}Cf was placed inside GAMMASPHERE yielding 5.7×10^{11} $\gamma-\gamma-\gamma$ and higher coincidence events. The angular correlation between the transitions from the γ-band to the ground band, and the pure E2 transitions within the ground band were then measured. These angular correlations yielded the mixing ratios, demonstrating that these transitions are all pure or nearly pure E2, in agreement with theory. In order to correct for possible attenuation due to the lifetime of the intermediate state in these correlations, the g-factors of the intermediate states needed to be known. Therefore, the g-factors of the 2^+_g states in the ground state band have been measured.

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