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Gamma Coincidence Measurements of ^{192}Ir from Fusion-Evaporation Reactions T. W. WARREN, J. W. MCCLORY, Air Force Institute of Tech - WPAFB, G. J. LANE, The Australian National University, C. J. CHIARA, U. S. Army Research Laboratory/ORAU, J. J. CARROLL, U. S. Army Research Laboratory — Doubly odd ^{192}Ir plays host to several metastable states, with the 168 keV, 11^- isomer (^{192m2}Ir) having a notable 241-year half-life. Should a reliable mechanism for on-demand depletion of the m2 isomer be identified, ^{192}Ir could serve as an energy storage medium. The first step toward an application of this nature requires isolation of a precise depletion pathway. Such a path will only be evident through detailed structural knowledge of the nucleus, especially at high spins where population and depopulation of the isomer likely occur. To that end, recent experiments, involving gamma spectroscopy of fusion-evaporation reactions, were performed with the CAESAR gamma-ray detector array and 14UD electrostatic tandem accelerator at the Australian National University Heavy Ion Accelerator Facility. In particular, in-beam measurements of γ-γ coincidences were collected for the ^{192}Os(p,n)^{192}Ir and ^{192}Os(d,2n)^{192}Ir reactions. Calibrations and spectral analyses of the pair coincidences were conducted using the *RadWare* tool suite. Analyses enabled construction of a preliminary level scheme for comparison with existing theoretical predictions of ^{192}Ir rotational structure based on the two-quasiparticle rotor model.

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