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**Feeding of isomers of stable Rh, Ag, Ir and Au isotopes in fast-neutron-induced reactions.** N. FOTIADES, M. DEVLIN, R.O. NELSON, LANL, USA, J.J. CARROLL, USArmy Research Laboratory — The GEANIE spectrometer, comprised of 20 high-purity Ge detectors coupled to the broad-spectrum pulsed neutron beam of the Los Alamos Neutron Science Center's (LANSCE) WNR facility, has been used to determine partial  $\gamma$ -ray cross sections in  $(n, xn)$  fast-neutron-induced reactions. In  $(n, n')$  reactions on stable Ir and Au isotopes the  $\gamma$ -ray feeding, as established with GEANIE, for the isomers relative to the feeding of the corresponding ground states increases with increasing neutron energy up to the neutron energy where the  $(n, 2n)$  reaction channel opens and then decreases. The behavior in mass  $A = 100$  region of the  $\gamma$ -ray feeding of isomers and ground states was also studied with GEANIE in fast-neutron-induced reactions on stable Rh and Ag isotopes. The feeding of the isomers was found to be very similar in the corresponding reaction channels and it was compared to the feeding determined for the ground states. The opening of higher-neutron-emitting reaction channels remove angular momentum from the compound system and reduce the population of higher-spin isomers relative to the feeding of lower-spin ground states in all cases studied.

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