

FAST-NEUTRON TOTAL AND SCATTERING CROSS SECTIONS OF
 ^{107}Ag IN THE MeV REGION*

by

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ABSTRACT

Neutron total cross sections are measured from 0.25 to 4.5 MeV at intervals of ~ 10 keV. Neutron differential elastic- and inelastic-scattering cross sections are measured from 1.5 to 4.0 MeV at intervals of ≤ 0.2 MeV. Cross sections for scattering into more than 20 energy groups are determined. Cross sections calculated from an optical-statistical model are in quantitative agreement with measured neutron total and elastic-scattering cross sections and in qualitative agreement with measured neutron inelastic-scattering cross sections. In the context of this model, significant dependence of the inelastic-scattering process on parity and/or deformation is not in evidence. The interpretation of the observed neutron inelastic-neutron-scattering results is consistent with previous reported J^π assignments and the systematics of nuclear-level-densities.

*This work supported by the U.S. Department of Energy.

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