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NEUTRON SCATTERING AND MODELS:- MOLYBDENUM

by

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ABSTRACT

A comprehensive interpretation of the fast-neutron interaction with elemental and isotopic molybdenum at energies of ≤ 30 MeV is given. New experimental elemental-scattering information over the incident energy range $4.5 \rightarrow 10$ MeV is presented. Spherical, vibrational and dispersive models are deduced and discussed, including isospin, energy-dependent and mass effects. The vibrational models are consistent with the "Lane potential". The importance of dispersion effects is noted. Dichotomies that exist in the literature are removed. The models are vehicles for fundamental physical investigations and for the provision of data for applied purposes. A "regional" molybdenum model is proposed. Finally, recommendations for future work are made.