

Abstract Submitted
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Neutron Elastic and Inelastic Scattering Cross Sections on ^{Nat}Fe and ^{23}Na ¹ LUKE KERSTING, COLLIN J. LUECK, S.F. HICKS, B.P. CRIDER, M.T. MCELLISTREM, E.E. PETERS, J.R. VANHOY — Neutron elastic and inelastic scattering angular distributions from ^{Nat}Fe and ^{23}Na at incident neutron energies of 3.57 and 3.81 MeV have been measured at the University of Kentucky 7 MV Van de Graaff laboratory using neutron time-of-flight techniques. The neutron beam was produced using the $^3\text{H}(p,n)\text{He}^3$ reaction. The scattered neutrons were detected at angles between 20° and 150° in 10° intervals with a hexafluorbenzene detector located approximately 3 m from the scattering samples. Neutron scattering differential cross sections were deduced. These cross sections and their uncertainties are important for understanding neutron-induced reactions in fission reactors and are important for fission reactor criticality calculations.

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