

Abstract Submitted
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Nuclear Scattering from Transition Metals.¹ AJIT HIRA, JAMES MCKEOUGH, MARIO VALERIO, Northern New Mexico College, TOMMY CATHEY, Lockheed Martin Information Technology — In view of the continued interest in the scattering of light projectiles by metallic nuclei, we present a computational study of the interactions between different nuclear species of atoms such as H through F ($Z \leq 9$) and the nuclei of Silver, Palladium and other metals. Recent work has shown that neutron scattering can be used to record holographic images of materials. We have developed a FORTRAN computer program to compute stopping cross sections and scattering angles in Ag and other metals for the small nuclear projectiles, using Monte Carlo calculation. This code allows for different angles of incidence. Next, simulations were done in the energy interval from 50 to 210 keV. The computational results thus obtained are compared with relevant experimental data. The data are further analyzed to identify periodic trends in terms of the atomic number of the projectile. Such studies also have potential applications in nuclear physics and in nuclear medicine.

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