

Abstract

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Proton Elastic Scattering from ^{58}Ni and ^{90}Zr at Intermediate Energy

Abstract Elastic proton scattering at energies between 160 and 800 MeV from ^{58}Ni and ^{90}Zr has been studied within the global Dirac optical model. In this work we calculate potential parameters which give good fits to the experimental data using parameterization code comprising differential cross section and analysing power measurements using DWUCK4. The real and imaginary potentials are well determined and behave regularly with energy. The behaviour of the real central effective potential shows the development of a "wine-bottle" shape in the transition energy region and the persistence of a small attractive potential in the nuclear surface region, even at 800 MeV.