

Effect of nonlocality of the imaginary part of the dispersive optical model potential on cross section of the (d,p) reaction.

The dispersive optical model potential (DOMP) for stable Ca and Zr isotopes was found fitting to the experimental data on the nucleon scattering, single-particle properties, charge density distributions, charge root-mean square radii and neutron skin thickness for $^{40-48}\text{Ca}$ and $^{90-96}\text{Zr}$ isotopes. In the present study, the distorted wave Born approximation (DWBA) and the adiabatic-wave approximation (ADWA) with DOMP were used to calculate the cross sections of the (d,p) reaction on stable isotopes of the above mentioned nuclei and a good agreement with the experimental data was achieved. It was shown that taking into account of nonlocality of the imaginary part of DOMP sufficiently affects spectroscopic factors of (d, p) reaction. Also, the dispersive optical model [1] is expected to be very useful for study of reactions with rare isotopes.

1. C.Mahaux, R.Sartor . Adv. Nucl. Phys. 1991. V. 20, P. 1.

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