

ELASTIC AND INELASTIC SCATTERING OF THE $^{14}\text{C} + ^{18}\text{O}$ NUCLEI

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New angular-distribution data of $^{14}\text{C} + ^{18}\text{O}$ elastic and inelastic scattering at the energy $E_{\text{lab}}(^{18}\text{O}) = 105$ MeV were obtained firstly. The data were analysed within the optical model and coupled-reaction-channels methods including contributions from most simple transfer reactions. The $^{14}\text{C} + ^{18}\text{O}$ potential parameters were deduced. Isotopic differences of the $^{12,13,14}\text{C} + ^{18}\text{O}$ and $^{14}\text{C} + ^{16,18}\text{O}$ potentials were investigated.

Keywords: nuclear reactions, optical model, coupled-reaction-channels method, folding-model, spectroscopic amplitudes, optical potentials, reaction mechanisms.