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Important role of medium effect in high-density region on nucleus-nucleus elastic scattering TAKENORI FURUMOTO, National Institute of Technology, Ichinoseki College, Ichinoseki, Iwate 021-8511, Japan, YUKINORI SAKURAGI, Department of Physics, Osaka City University, Osaka 558-8585, Japan, YASUO YAMAMOTO, RIKEN Nishina Center, RIKEN, Wako, Saitama 351-0198, Japan — We investigate the sensitivity of the medium effect in the high density region on the nucleus-nucleus elastic scattering in the framework of the double-folding (DF) model with the complex G-matrix interaction. First, the evaluating position of the local density, which is an ambiguity of the DF model, is investigated. However, the effect has a minor role to the ^{16}O + ^{16}O system. Next, the medium effect including three-body-force (TBF) effect is investigated with two methods. In the both methods, the important role of the medium effect is clearly seen on the potential and the elastic cross section, but not on the total reaction cross section. Finally, we make clear the crucial role of the TBF effect up to $k_F = 1.6$ fm^{-1} in the nucleus-nucleus elastic scattering.

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