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Nuclear proximity potentials studied by deflection effect in peripheral reactions at E = 290 MeV/u SADAO MOMOTA, Kochi University of Technology, MITSUTAKA KANAZAWA, SAGA HIMAT, ATSUSHI KITAGAWA, SHINJI SATO, National Institute of Radiological Sciences(NIRS) — The analysis of angular distributions observed in elastic scattering reaction has provided attractive nuclear potentials between projectile and target nuclei at E =100 MeV/u or lower. Recent theoretical studies have predicted that the real part of the heavy-ion potentials changes from attractive to repulsive character around the incident energy E =200 - 300 MeV/u, however few experimental studies have been performed to prove the transition. To investigate behaviors of heavy-ion potentials at this energy region, angular distributions of nuclei, produced through exchange or 1-nucleon transfer reactions of 12C, 40Ar and 84Kr beam with C, Al, Nb, Tb, and Au targets at 290 MeV/u, were observed. An orbital deflection effect was observed in the angular distributions and has shown remarkable target dependence. The orbital deflection will be analyzed based on the combined contribution of Coulomb and nuclear proximity potentials.

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