Contribution ID: **488** Type: **Oral talk (15 min + 5 min questions)**

Comparison between elastic scattering of strongly bound α particles and exotic 6He on a 12C target and the effect of the two-neutron halo of 6He

Tuesday, 12 July 2022 13:30 (20 minutes)

The experimental angular distributions for α-particles elastically scattered from the 12C nucleus in the energy range of 48.7–386 MeV and for the 6He+12C nuclear system in the energy range of 5.9–493.8 MeV have been reanalyzed. Data analysis is performed within the framework of both the optical model (OM) and the double-folding optical model (DFOM). In this model, the real part of the potential is generated using the double-folding procedures based on the effective M3Y interaction between projectile nucleons and target nucleons, in addition to an imaginary part of the Woods-Saxon form. Two criteria are used to observe the nature of 4He and 6He elastically scattered from 12C and the effect of the two-neutron halo structure of 6He. Firstly, the extracted potential parameters are utilized for calculating the reflexion coefficients ηL, which are strongly related to the angular momentum L. Secondly, the reduction in reaction cross sections with the projectile's energy.

The speaker is a student or young scientist

Yes

Section

1. Experimental and theoretical studies of nuclear reactions

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