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Analysis of neutron and proton halo breakup cross sections

We use the continuum discretized coupled channel method to study in detail the similarities and differences between neutron and proton, total, nuclear and Coulomb breakup cross sections in the breakup reaction of $8\text{B} > 7\text{Be} + \text{P}$ and $8\text{Be} > 7\text{Be} + \text{n}$ with the difference target masses (^{12}C , ^{28}Si , ^{58}Ni , ^{181}Ta , ^{208}Pb and ^{238}U). Our preliminary results reveals that neutron halo breakup cross sections are larger than the proton halo breakup cross sections. On the other hand, we also found that the continuum continuum couplings are more stronger in the neutron halo breakup cross sections than in the proton halo breakup cross sections.

Notes

Nuclear Reactions

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