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Dynamics of 6,7Li breakups on light and heavy target masses

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We use the continuum discretized coupled channel method to investigate the breakups of 6Li and 7Li on different target masses when the continuum resonant states are included and excluded in the coupling matrix elements. Our intention is to study the dynamic differences and/or similarities due to their different properties, other than the ground-state binding energy. To this end, keeping the same ground state binding energy, the different calculations will be performed whereas the breakup, fusion and elastic scattering cross sections will be investigated in detail. Our preliminary results reveal that for heavy target the breakup cross sections are enhanced at energies below and suppressed above the Coulomb barrier. On the other hand, for the lighter target small enhancements are observed below the barrier. For the lighter and heavy targets, the fusion cross sections are suppressed below and enhanced at energies above the Coulomb barrier due to these coupling.

Primary authors: Prof. LEKALA, Mantile Leslie (University of South Africa); Dr NDALA, Lucas Vusi (University of South Africa)

Co-author: Mr CHITAKWA, Kakungu (University of South Africa)

Presenter: Mr CHITAKWA, Kakungu (University of South Africa)

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