



Contribution ID: 6

Type: Oral

Breakup dynamics of a neutron-halo projectile on heavy target at deep sub-barrier energies

By studying the total fusion and breakup cross-sections in the interaction of the neutron-halo ^{11}Be projectile on the lead target ^{208}Pb , it is shown that, even for the neutron-halo projectile, the breakup channel remains the most dominant reaction channel at sub-barrier energies, following a characteristic behavior that was also previously verified for the case of the proton-halo projectile ^8B . This feature is found to emanate from the enhancement of the breakup cross-section, due to the continuum–continuum couplings (CCC) coming exclusively from its Coulomb component. We further speculate that the enhancement of the Coulomb breakup cross-section at sub-barrier incident energies by the CCC could be associated with the projectile breaking up on the outgoing trajectory, provided these couplings can be proven to delay the breakup process.

Notes

Primary author: Mr SITHOLE, TAPUWA (UNIVERSITY OF SOUTH AFRICA (UNISA))

Co-author: Mr MUKERU, B. (UNISA)

Presenter: Mr SITHOLE, TAPUWA (UNIVERSITY OF SOUTH AFRICA (UNISA))