EXPERIMENTAL AND THEORETICAL STUDIES OF NUCLEAR REACTIONS

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A study of the total fusion and breakup cross-sections in the breakup of ^{11}Be projectile on the lead target shows that, even for the neutron- halo projectile, the breakup channel remains the most dominant reaction channel at sub-barrier energies, as in the case of the proton-halo projectile ^{8}B reported in other studies. It is found that this feature emanates from the enhancement of the breakup cross-section, due to the continuum- continuum couplings coming exclusively from its Coulomb component. We further argue that the enhancement of the Coulomb breakup cross-section at sub-barrier incident energies could be associated with the projectile breaking up on the outgoing trajectory.