



Department of Physics (Autonomous) University of
Mumbai
Ph.D. Seminar
of

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**Effect of Projectile Break-up on Fission Fragment Angular and Mass Distributions in
 ${}^6,7\text{Li} + {}^{235,238}\text{U}$ Reactions**

The present thesis work investigates the fusion-fission dynamics in interaction of loosely bound nuclei with actinide targets. The fission fragment angular distribution for ${}^6,7\text{Li} + {}^{235,238}\text{U}$ systems have been investigated to understand the role of projectile breakup on fission fragment anisotropies. Further, in order to exclusively determine the anisotropy values for the various break-up/ transfer channels, measurement on fission fragment angular distribution has been carried out for ${}^6\text{Li} + {}^{235}\text{U}$ system for alpha- and deuteron-transfer induced fission channels. From above studies it was observed that the fission fragment anisotropy could be understand within the framework of pre equilibrium fission (PEF) model considering the ground state spin of the projectile and/or target. Further, measurement on fission fragment mass distribution for ${}^6,7\text{Li} + {}^{238}\text{U}$ systems have also been carried out. From mass distribution studies it was observed that the peak to valley ratio (P/V) of fission fragment mass distribution as a function of excitation energy for ${}^6,7\text{Li} + {}^{238}\text{U}$ reactions shows a sharp rise in comparison to proton induced reactions for the same target indicating the presence of projectile break-up.

~~Wednesday~~ **Thursday** 28th June 2018

at

Seminar Hall, Department of Physics, 3rd floor,
Tilak Bhavan.
Time: 16.00 hrs

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