Contribution ID: **20** Type: **not specified**

Measurement of fusion excitation functions around the Coulomb Barrier for 18O + 116Sn system

ABSTRACT:
Around the coulomb barrier, in low energy region, enhancement of the sub-barrier fusion cross-section for some systems could be seen as compared to its corresponding theoretical predictions. Among the various degrees of freedom that influence the sub-barrier fusion cross-section enhancement, the role of static deformation and quantal zero point motion is well established but there are still ambiguities in the quantitative effects of positive Q –value neutron transfer channels. To investigate the transfer reaction and the sub-barrier fusion cross-section of the system 18O + 116Sn, having positive Q –values for the two neutron stripping channels, the experiment to measure the fusion excitation functions of this system was carried out at HIRA, IUAC, New Delhi. The preliminary result of the data analysis along with the theoretical calculations carried out for the fusion cross section and barrier distribution measurements will be presented in the conference.
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