



Contribution ID: 104

Type: Poster

Statistical Properties of ^{133}Xe and ^{85}Kr from Inverse Kinematics Reactions.

The low energy enhancement (LEE) has a potential of increasing the Maxwellian-Average cross sections (MACS) by up to two orders of magnitude. This theoretically predicted effect is pronounced in the mass region towards the neutron drip line. However, to this date there is no experimental data, which proves or disproves the existence of the low energy enhancement in the neutron rich nuclei. This is due to the limitation of the currently existing experimental techniques, which are mostly applicable to the nuclei that are located in the valley of beta stability. In this work we explore the possibility of probing the LEE, neutron rich nuclei, using inverse kinematics experiments and the ratio method of extracting the photon strength function. Thus I will present preliminary results for the $^{84}\text{Kr}(d,p)^{85}\text{Kr}$ and $^{130}\text{Xe}(d,p)^{133}\text{Xe}$ reactions that were performed at iThemba LABS using the beam energy of 300 MeV.

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