EFFECTS OF DISTORTION ON THE INTERCLUSTER MOTION IN ^{2}H,^{3}He,^{6}Li AND ^{9}Be ON TROJAN HORSE APPLICATIONS

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Deuteron induced quasi-free scattering and reactions have been extensively investigated in the past few decades as well as ^{6}Li, ^{3}H, ^{3}He and ^{9}Be induced ones. This was done not only for nuclear structure and reaction mechanisms investigation but also for important astrophysical implications (Trojan Horse Method)[1]. In particular the width and the shape of the spectator momentum distribution inside several nuclei which have been used as Trojan Horse ones have been obtained as a function of the transferred momentum for all these nuclei. The behaviour of the width of the spectator momentum distribution as a function of the transferred momentum will be discussed extensively. This work is the continuation of what has been done for Li^6 in [2]. Moreover a complete study on Trojan Horse method applications will also be given because the momentum distribution of the spectator particle inside the Trojan horse nucleus is a necessary input for the application of this method. This will give hints on distortion effects at low energies as well as implications for nuclear astrophysics.

[1] C. Spitaleri *et al.*, Phys. Rev. C **60**, 055802 (1999).
[2] R.G. Pizzone *et al.*, Phys. Rev C **71**, 058801 (2005)