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Study of the IMFs production probability and dependence from the Isospin of the entrance channel in projectile-like break-up at Fermi energies

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The reactions $^{124}\text{Xe} + ^{64}\text{Zn}$ and ^{64}Ni at 35 A.MeV beam incident energy (InKisSy, Inverse Kinematic Isobaric System, experiment) were studied at INFN-LNS with the 4π CHIMERA detector and compared to results of previous studied reactions $^{124,112}\text{Sn} + ^{64,58}\text{Ni}$ [1]. We study the IMF production probability and emission mechanism in the projectile-like fission by using the kinematical reconstruction of the PLF* source and the break-up alignment angle as main observable. We show that prompt-dynamical emission is enhanced by increasing the projectile and target Isospin content in the entrance channel. Experimental results are compared with the Constrained Molecular Dynamic code CoMD. A new experiment [2] has been approved in order to expand our investigation at lower energies of 20 A.MeV by using CHIMERA coupled with 10 telescopes of the new FARCOS correlator.

REFERENCES

- [1] P. Russotto et al., Phys. Rev. C92, 014610 (2015).
- [2] E.V. Pagano, E. De Filippo, P. Russotto and NewChim collaboration, CHIFAR LNS-PAC proposal.

Selected session

Nuclear Structure and dynamics

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