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Transfer reactions to populate the PDR in 96Mo

The pygmy dipole resonance (PDR) is a cluster of 1- states around and below the neutron separation energy and has gained traction in nuclear structure studies. The microscopic nature of the PDR is still an open question in particular, whether these 1- states are of single-particle or collective nature. The study here presented is a first attempt to investigate the single-particle or the collective nature of these 1- states by exploiting the sensitivity of one-particle transfer reactions to excite single-particle states. The measurements on transfer reactions (p,d) and (d,p) were performed on two different targets to populate the 96Mo residual nucleus. The ejectiles were detected, identified and momentum-analyzed by the MAGNEX spectrometer and its focal-plane detector which is installed at the Laboratori Nazionali del Sud of Instituto di Fisica Nucleare in Catania. In this talk, the data reduction process of the (p,d) reaction will be presented together with some preliminary results.

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Apply to be considered for a student ; award (Yes / No)?

Yes

Level for award;(Hons, MSc, PhD, N/A)?

PhD

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