
A SEARCH FOR E1 STRENGTH IN ^{70}Ni AROUND THE THRESHOLD

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The structure and nature of the pygmy dipole resonance (PDR) states below and above the neutron threshold is a recent open problem, particularly in exotic, neutron rich nuclei. Present experimental observations give only limited information on this subject. New experiments using different methods are needed. After a pioneering experiment on the exotic nucleus ^{68}Ni [1] in 2005 at GSI laboratories a recent measurement at the RIKEN laboratories on the even more neutron rich ^{70}Ni with the 4π scintillator arrays DALI2 (NaI) + HECTOR+(LaBr3:Ce) setup contributes to solve the open questions. The experiment was based on relativistic Coulomb excitation together with the detection of the incoming and outgoing particles event by event. The detection of the produced gamma-rays in the reaction, provides insight into the problem of the electric dipole response and E1 strength distribution around particle separation threshold..

REFERENCES

[1] „Search for the Pygmy Dipole Resonance in ^{68}Ni at 600 MeV/nucleon” O. Wieland et al. PRL 102, 092502 (2009)