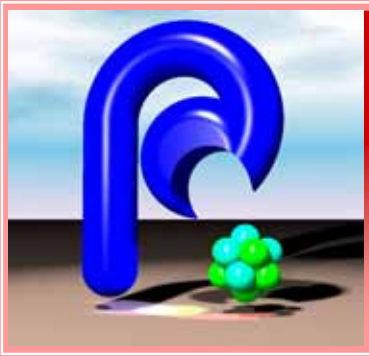

独立行政法人理化学研究所
原子核グループ

第 9 回 RIBF 核物理セミナー

RIKEN Nuclear Physics Group

The 9th RIBF Nuclear Physics Seminar

Search for low lying dipole strength in the neutron rich nucleus ^{26}Ne

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Abstract

We carried out the Coulomb excitation, on a lead target, of an exotic beam of neutron-rich nucleus ^{26}Ne at 58 MeV/n, in order to study the possible existence of a pygmy dipole resonance above the neutron emission threshold. The experiment was performed at the RIKEN Accelerator Research Facility and included a gamma-ray detector, a charged fragment hodoscope and a neutron detector. Using the invariant mass method in the ^{25}Ne+n decay channel, and by comparing the reaction cross section on the lead target and a light target of aluminium, we observe a sizeable amount of E1 strength between the one neutron and the two neutron emission thresholds. The corresponding ^{26}Ne angular distribution confirms its nature and we deduce its reduced dipole transition probability value. Our method also enables us to extract for the first time the decay pattern of a pygmy resonance. By detecting the decay photons from the excited states below the neutron emission threshold and by analyzing the angular distribution of the inelastically scattered ^{26}Ne we deduce the reduced transition probability of the first 2^+ state, from the ground state. The value obtained being in disagreement with a previous result.

The seminar will be given in English

Jan. 10 (Tue), 2005 10:30-
Conference Hall, RIBF Bldg. 2F

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