乞掲示

理化学研究所原子核グループコロキウム　*2002. 6. 28*

講師 ： Prof. Wenqing Shen

(SINR China)

題目 ： Possible exotic structure in light proton rich nuclei around A $\sim$ 30

∗ The seminar will be given in *English.*

日時 ： 2002年 6月 28日 (Fri.)　15:00 –

場所 ： RIKEN Main Bldg. 3F Seminar Room

Abstract

Radioactive ion beams were produced through the projectile fragmentation induced by 69 MeV/nucleon ^{36}Ar primary beam on a ^{9}Be target. Measurements of reaction cross sections for 44 nuclei with A $\sim$ 30 (mostly proton-rich), on carbon were performed on RIBLL (Radioactive Ion Beam Line in Lanzhou) of HIRFL (Heavy Ion Research Facility in Lanzhou) at intermediate energies around 30 MeV/nucleon by a transmission method. The experimental cross sections for ^{23}Al and ^{27}P are abnormally large compared with their neighboring nuclei. Together with the previous experimental facts such as the binding energy and ground state data, it suggests anomalously large matter root-mean-square radii and proton halo structure in ^{23}Al and in ^{27}P. There is an enhancement for the cross sections of ^{17}F+^{12}C compared with the neighboring isotopes. Considering that the ground state of ^{17}F is $1d_{5/2}$, this can indicate that there is a proton skin in ^{17}F. The calculation of relativistic density-dependent Hartree model (RDDH) shows that the nuclei ^{23}Al and ^{27}P may have proton-halo structure and ^{17}F may have proton-skin structure. The significance of these measurements is discussed.

∗ Host researcher : A. Ozawa (RIKEN)

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セミナー係

重イオン核物理研究室　福田 直樹　柳澤 善行

セミナー係連絡先

(email)　seminar@rarfaxp.riken.go.jp

(FAX)　048–462–4464

(WWW)　http://rarfaxp.riken.go.jp/~seminar/