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Investigation of proton resonant states in ^{23}Al and ^{22}Mg using radioactive beams at CNS JIANJUN HE, SHIGERU KUBONO, TAKASHI TERANISHI, MASAHIRO NOTANI, HIDETADA BABA, SHIN'ICHIRO MICHIMASA, Center for Nuclear Study, University of Tokyo (CNS), Japan, SHUNJI NISHIMURA, MIZUKI NISHIMURA, YOSHIYUKI YANAGISAWA, RIKEN (The Institute of Physical and Chemical Research), Japan, HIRONORI IWASAKI, Department of Physics, University of Tokyo, Japan, NAHO HOKOIWA, MICHIIYA KIBE, YASUYUK GONO, Department of Physics, Kyushu University, Japan, JUNYUNG MOON, JU-HAHN LEE, CHUN-SIK LEE, Department of Physics, Chung-Ang University, South Korea, SEIGO KATO, Department of Physics, Yamagata University, Japan — We have studied the proton resonances in ^{23}Al and ^{22}Mg via the resonant scattering of radioactive beams on a thick CH_2 target. The ^{22}Mg and ^{21}Na beams were separated by the **CNS Radioactive Ion Beam separator (CRIB)** with energies of 4.4 AMeV and 4.0 AMeV, respectively. At scattering angles of $\theta_{lab} = 4^\circ$, 17° and 23° , the recoiled particles were measured by three sets of ΔE -E Si telescopes. As for nucleus ^{23}Al (via $^{22}\text{Mg}+p$), several new resonant states were observed. As for nucleus ^{22}Mg (via $^{21}\text{Na}+p$), the previously observed resonant states were confirmed. The states above the alpha threshold were observed, which are related to the $^{18}\text{Ne}(\alpha, p)^{21}\text{Na}$ reaction. The resonant parameters were deduced from an R-matrix code. The nuclear structures and the astrophysical implications are discussed.

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