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### **Recent experiments of interaction and reaction cross sections and the related results**

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Recent experiments of interaction ( $\sigma_I$ ) and reaction ( $\sigma_R$ ) cross sections will be reviewed. Measurements of  $\sigma_I$  and  $\sigma_R$  have been proved to be effective tools to reveal the halo or skin structure in proton-rich and neutron-rich nuclei [1]. Very recently,  $\sigma_I$  for  $^{72-80}\text{Kr}$  on carbon targets have been measured at FRS in GSI with relativistic energies ( $\sim 1 A \text{ GeV}$ ). Since the charge radii for the nuclei are known by optical isotope-shift measurements, by our  $\sigma_I$  measurements the proton skin thickness of the nuclei can be investigated. Some tentative results of the measurements will be presented.  $\sigma_R$  at intermediate energies are quite indispensable to deduce the effective matter density distributions by their energy dependence. Recently,  $\sigma_R$  have been extensively measured at RIPS in RIKEN by a new setup [2]. As a byproduct, longitudinal momentum distributions of fragments from a projectile can be measured at the same time [3]. In special, one and two nucleon(s) removal channels can be observed at the same time. Recently, by the setup, we performed experiments for  $^{14-19}\text{C}$  and some proton rich nuclei including  $^{23}\text{Al}$ , that is a potential proton halo candidate due to its small proton separation energy. Some results of the experiments will also be introduced.

[1] A.Ozawa et al., Nucl. Phys.A 693 (2001) 32.

[2] T.Zheng et al., Nucl. Phys. A 709 (2002) 103.

[3] T.Tamaguchi et al., Nucl. Phys. A 724 (2003) 3.