

Nuclear matter radii determined by interaction cross sections

A. Ozawa

Institute of Physics, University of Tsukuba
Tsukuba, Ibaraki 305-8571, Japan

Experimental studies on nuclear matter radii determined by interaction cross sections (σ_I) will be reviewed. Recently σ_I have been extensively measured at FRS facility in GSI, where RI beams with relativistic energies ($\sim 1 A$ GeV) are available. Using Glauber-model analysis, nuclear matter radii of unstable nuclei can be determined from the measured σ_I . We have determined nuclear matter radii in p - sd shell region and some Cl and Ar isotopes, as shown in Fig.1. In near future, measurements of σ_I will be performed in RIKEN RI beam factory (RIBF), where RI beam energies are around 400 A MeV. In RIBF, we will determine the nuclear matter radii for more neutron rich nuclei and much heavier nuclei up to Sn.

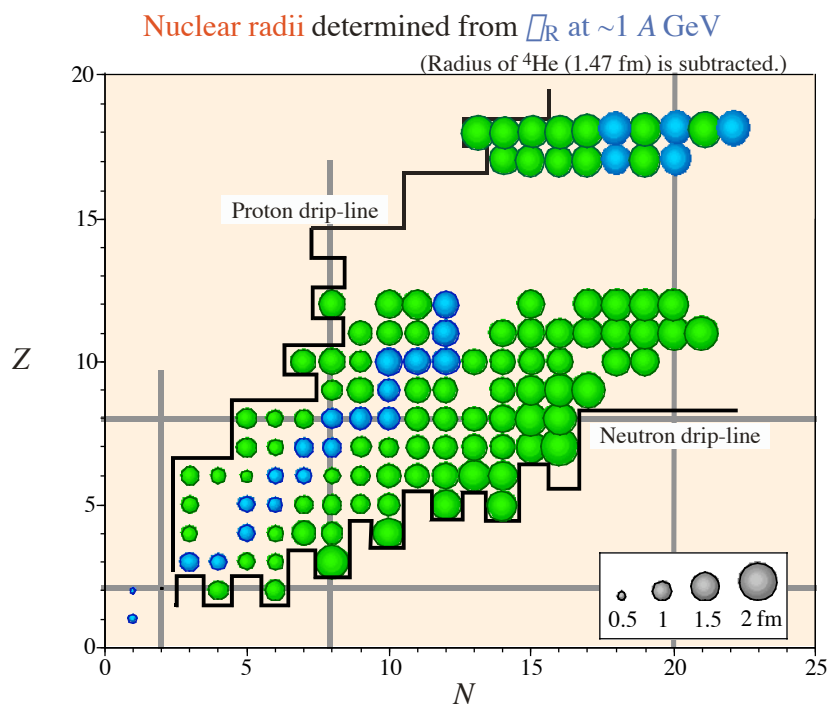


Fig. 1 Nuclear matter radii determined from interaction cross sections. Blue (green) circles show stable (unstable) nuclei, respectively.