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## Density distribution of $^{14}\text{Be}$ from reaction cross-section measurements

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We have performed reaction cross section ( $\sigma_R$ ) measurements to deduce the matter density distribution of  $^{14}\text{Be}$ . We deduced the matter density distribution of  $^{14}\text{Be}$  from the measured  $\sigma_R$  of  $^{14}\text{Be}$  with both proton and carbon targets at around 41 and 76 MeV/nucleon and previously measured  $\sigma_R$  at relativistic energies.  $^{14}\text{Be}$  ( $Z=4$ ,  $N=10$ ) nucleus is thought to be the two-neutron halo nucleus consisting a core nucleus  $^{12}\text{Be}$  plus the two valence neutrons. Our observation supports this picture. Furthermore, the resultant density distribution is found to have dominant configuration of the  $s$ -wave with partial mixture of the  $d$ - or  $p$ -wave. In our analysis, 39% mixing of the  $p$ -wave is suggested. We also compared the deduced root-mean-square matter radius with the theoretical calculations. The detail of the comparison will be presented.

### Biography

Tetsuaki Moriguchi has completed his PhD from University of Tsukuba. His interests are density distributions and radii of unstable nuclei located far from stability line on the nuclear chart.

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