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Systematic change of neutron density distribution in tin isotopes deduced from proton elastic scattering at 295 MeV SATORU TERASHIMA, HARUTAKA SAKAGUCHI, YUSUKE YASUDA, Kyoto University, HIROYUKI TAKEDA, RIKEN, MASARU YOSOI, Research Center for Nuclear Physics, Osaka Univeristy, TAKATSUGU ISHIKAWA, Laboratory of Nuclear Science, Tohoku University, MASATOSHI ITOH, Tohoku University, TAKAHIRO KAWABATA, Center for Nuclear Study, University of Tokyo, MAKOTO UCHIDA, Tokyo Institute of Technology, TESUO NORO, HIDETOMO YOSHIDA, TAKASHI ISHIDA, SHUN ASAJI, TAKAHISA YONEMURA, Kyushu University — Cross sections and analyzing powers of proton elastic scattering off ^{116,118,120,122,124}Sn at 295 MeV have been measured up to about 3.5 fm^{-1} in momentum transfer to deduce a systematic change of neutron density distribution. We have used effective interaction to explain proton elastic scattering off N=Z nuclei whose density distribution are well known. For the analysis, we have used the relativistic impulse approximation with relativistic Love-Franey interaction which was tuned by using medium effect. Then, we have applied the elastic proton scattering to deduce the neutron density distribution of tin isotopes. The result of our analysis shows a clear systematic behavior which shows a gradual filling in the $3s_{1/2}$ neutron single particle orbit.

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