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Shell model calculation on Sn isotopes and evolution of shell structure NORITAKA SHIMIZU, Department of Physics, University of Tokyo, TAKAHARU OTSUKA, Department of Physics and CNS University of Tokyo, RIKEN, NSCL MSU — We perform shell model calculations of low-lying excited states of $^{100-132}$Sn even-even isotopes, and discuss the properties of the $E2$ transition probabilities of low-lying excited states. Recent improvements of rare isotope beam technique provide us with the experimental information of proton-rich tin isotopes towards ^{100}Sn, especially $B(E2; 0_1^+ \rightarrow 2_1^+)$ values of $^{106-114}$Sn. These $E2$ probabilities show unexpectedly large and inconsistent with the prediction of the large scale shell model calculation based on G-matrix prescription. In this work, we adopt rather schematic interaction such as pairing-plus-quadrupole interaction and monopole interaction, which is considered to play an important role in shell evolution of proton-rich nuclei around ^{100}Sn and $Z = N = 50$ shell gaps, with utilizing angular-momentum and number projection techniques and the Monte-Carlo shell model instead of traditional n-particle n-hole truncation. We demonstrates how the shell gap and $\nu 0h11/2$ intruder orbit evolve with decreasing neutron numbers of Sn isotopes, and discuss the origin of the anomalous behaviour of $E2$ transition probabilities.

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