

Ground States of Structure of Even $^{104-106}$ Ru Isotopes

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Abstract : In this conference, we apply the interacting boson model-1 (IBM-1) formula for U(5) symmetry in order to calculate the energy levels and reduced transition probabilities for a few yrast transitions in Ru with neutron $N=60, 62$. The neutron rich even-even isotopes of Ru are very interesting to investigate using IBM-1, because even $^{104,106}\text{Ru}$ isotopes are great consequence due to excited near the magic number 50. The calculation of ground state band and $B(E2)$ values using IBM-1 for $Z=44$ are not calculated to describe the valuable information of nuclear structure by U(5) limit. The parameters in the formula are deduced based on the experimental energy level and value of $B(E2, 2^+ \rightarrow 0^+)$. The yrast states and transition strength $B(E2)$ from 1st 4^+ to 1st 2^+ , 1st 6^+ to 1st 4^+ and 1st 8^+ to 1st 6^+ states of Ru for even $N= 60, 62$ were calculated. The quadrupole moments, deformation parameters and U(5) limit were discussed for those nuclei.

Keywords : $B(E2)$, energy level, ^{104}Ru , ^{106}Ru

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