

SHELL STRUCTURE OF Cd ISOTOPES: DESTRUCTION OF MAGIC NUMBER $N = 64$

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On the basis of data on neutron stripping and pick-up reactions, estimates of the populations of neutron orbits in even-even stable isotopes of Cd were obtained. Using the method of joint analysis of the stripping and pick-up data [1] the most accurate values of the occupation numbers and energy locations of ^{114}Cd neutron orbits were obtained. The obtained results were used to explain the sequence of spin and parity of the ground states of Cd isotopes. It is shown that the 'weak' closure of the orbits $d_{5/2} - g_{7/2}$ which takes place in the Sn isotopes is destroyed in a specified Cd isotope. Magic number $N = 64$ manifested itself in isotopes of Sn disappears in other isotopes with distance from $Z = 50$. This result explains the features of the graphs of the first 2^+ states of isotopes with Z near $Z = 50$.

1. I.N.Boboshin, V.V.Varlamov, B.S.Ishkhanov, I.M.Kapitonov// Nucl. Phys. A. 1989. V.496. P.93.