

Spectroscopy of ^{100}Cd from one-proton removal

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Low-lying states of ^{100}Cd from one-proton removal reaction (^{101}In , $^{100}\text{Cd}+\gamma$) have been studied using in-beam γ -ray spectroscopy at the Radioactive Isotope Beam Factory at RIKEN. A new method is proposed to separate peaks mixed together in the spectrum. Using this new method, two new γ transitions were identified and tentatively assigned as decays from two previously unknown states. The configurations of the two states are proposed by comparing with the shell model calculations and the systematic of Cd isotopes. The relative population intensities of the two lowest $4+$ states were extracted, and the relative spectroscopy factors to these two states were deduced. The results suggest that the first $4+$ state has neutron configuration and the second $4+$ state is of proton configuration, in agreement with shell model predictions.

Primary authors: XU, Yingfeng (Institute of Modern Physics, Chinese Academy of Sciences); Prof. WANG, Shitao (Institute of Modern Physics, Chinese Academy of Sciences)

Presenter: XU, Yingfeng (Institute of Modern Physics, Chinese Academy of Sciences)

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