

Mixed Symmetry Isomeric States in Nuclei

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(Received: 2001-1-18; Revised: 2001-6-25)

Abstract: Mixed symmetry states are studied in the framework of the neutron-proton interacting boson model. It is found that some of the mixed symmetry states with moderate high spins change very fast with respect to the Majorana interaction. Under certain conditions, they become the yrast state or yrare state. These states are difficult to decay and become very stable. This study suggests that a possible new mode of isomers may exist due to the special nature in their proton and neutron degrees of freedom.

PACS: 21.60.Fw, 21.60.Ev, 27.50.+e, 27.60.+j

Key words: mixed symmetry states, isomeric states, neutron-proton interacting boson model

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