NUCLEAR SHAPE CHANGES IN ODD-A PROMETHIUM ISOTOPES (PM)

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Abstract

We have developed a special computing code for calculation of nuclear shape changes and quadrupole moments (Q) of Promethium Isotopes. It has been shown from these calculations that by increasing neutron number, deformation parameter also increase for heavier isotopes which means more deformation from spherical shape. By comparison with Nilsson level energy diagrams we can infer quadrupole deformation parameter (β_2) and hence calculate quadrupole moments of these isotopes.

Keywords: Yrast states, Backbending , Deformation parameter, Quadrupole moment, Shape change