

## **BACKBENDING AND SHAPE CHANGES IN ODD-A LANTHANUM ISOTOPES (LA)**

**S. MOHAMMADI AND S. ZAND**

Department of Physics, Payame Noor University, PO BOX 19395-3697 Tehran, Iran

### **Abstract**

We have developed a special computing code for calculation of nuclear shape changes and quadrupole moments ( $Q$ ) of Lanthanum Isotopes. It has been shown from these calculations that by increasing neutron number, deformation parameter also increase for more heavier isotopes which means more deformation from spherical shape. By comparison with Nilsson level diagrams we can infer quadrupole deformation parameter ( $\beta_2$ ) and calculate quadrupole moments of these isotopes.

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