Int. Workshop "Shapes and Dynamics of Atomic Nuclei: Contemporary Aspects" ed. Nikolay Minkov, Heron Press, Sofia 2015

On E0 Transitions in Even-Even Nuclei

V.P. Garistov, A. Georgieva

Institute for Nuclear Research and Nuclear Energy, Sofia, Bulgaria

Abstract

We analyze simultaneously the parabolic distribution of the energies of low lying collective states $K^{\pi} = 0^+$ [1] and the classification of these states energies within the Interacting Vector Boson Model (IVBM) [2]. The classification of the 0^+ states energies within (IVBM) is performed with the fixed set of parameters extracted from the fitting of the model energies with the experimental data for $K^{\pi} = 0^+$ rotational bands. The calculation of E0 transition probabilities for these two approaches is carried out.

References

- V. Garistov, Rearrangement of the Experimental Data of Low Lying Collective Excited States, Proceedings of the XXII International Workshop on Nuclear Theory, ed. V. Nikolaev, Heron Press Science Series, Sofia, (2003), 305;
- [2] Georgieva A, Raychev P and Roussev R 1983 J. Phys. G: Nucl. Phys 9, 521; Georgieva A I, Ganev H G, Draayer J P and Garistov V P 2009 Physics of Particles and Nuclei 40, No. 4, 461 - 501.