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How evident is the shape coexistence phenomenon in the lead region?

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The lead region is considered as a paradigm of the shape coexistence phenomenon and several decades of experimental effort have supported this believe. In particular, long chains of the Pb, Hg, Pt and Po isotopes have been measured and a rich experimental body of data concerning excitation energies, electromagnetic transition rates, radii, magnetic g-factors, alpha-hindrance factors and Coulomb excitation reactions, has been obtained [1]. In the case of Pb and Hg, the presence of intruder states is self-evident inspecting the parabolic energy systematics of the intruder states. However, however in the case of Pt and Po, the presence and influence of intruder states is not obvious. In this contribution, we try to clarify the situation using a set of Interacting Boson Model calculations that we carried out during the last few years [2]. We show that in order to understand the systematics of the large set of observables in this mass region, we can resort to simple arguments based on the strength of the interaction between regular and intruder configurations, and, moreover, on the energy difference between both types of configurations.

[1] K. Heyde and J. L. Wood, *Revs. Mod. Phys.* 83, 1467 (2011).

[2] J.E. Garcia-Ramos and K. Heyde, *Nucl. Phys. A* 825, 39 (2009); J.E. Garcia-Ramos, V. Hellemans, and K. Heyde, *Phys. Rev. C* 84, 014331 (2011); J.E. Garcia-Ramos and K. Heyde, *Phys. Rev. C* 89, 014306 (2014).

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