

Relation of Masses and Spectroscopic Observables to Structure *

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It is often possible to understand collective effects in nuclei by considering the numbers of valence particles, i.e. total number of valence protons and neutrons. Ideas such as $N_p N_n$ and P-factor schemes [1] have successfully correlated observables such as $R_{4/2}$ which is the energy ratio of the first excited 4^+ and 2^+ states. In this talk, we will discuss the sensitivity of calculated collective contributions for deformed nuclei to separation energies and how both experimental separation energies and the first excited 2^+ states show correlated changes as a function of N. Finally, the enhancement of collective effects [2-4] will be investigated in terms of correlations of masses and spectroscopic observables including some results using the IBA.

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