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A Beyond Mean Field description of global and spectroscopic properties of atomic nuclei

In this talk the state of the art of beyond mean field theories, BMFT, will be presented. Ground-state properties, in particular binding energies, odd-even mass differences, mass radii and electromagnetic moments of the Magnesium isotopic chain will be discussed. At the same time a comprehensive study of the spectroscopic properties of ^{25}Mg will illustrate the capability of the method to describe excited states of odd nuclei. These studies, together with the spectrum and the transition probabilities of the nucleus ^{44}S , show that BMFT provide an accuracy comparable with large shell model calculations with tuned interactions. The advantages of the present approach are the added value of the intrinsic system interpretation and that the interaction, the Gogny force, is well known for its predictive power and good performance all over the chart of nuclide.

Mercredi 21 juin 2017, 11h30
IPN, Bât. 100, Salle des conseils