Institut de recherche sur les lois fondamentales de l'univers

ESNT Seminar

Friday 15/06/2018, 11h-12h

Bat 703, DPhN salle de séminaires 135, CEA Saclay, Orme des Merisiers

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Electromagnetic response in finite nuclei with Self-Consistent Green's Functions

This talk will deal with two specific applications related to the interaction of the electromagnetic field with finite nuclei: quadrupole effective charges and electromagnetic dipole excitations, both computed with the sole experimental input coming from the parametrization of a realistic nuclear interaction. The many-body formalism adopted is the Self-Consistent Green's Functions formalism, and special emphasis will be given to the methods used to include non-perturbatively the nuclear correlations.

The nuclei considered are selected isotopes in the Oxygen, Nickel and Calcium chains, with the aim of investigating the evolution of effective charges and dipole responses towards the neutron dripline. The computed values of effective charges are compatible with the phenomenological ones used in shell model applications.