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Séminaire de Physique Nucléaire Théorique

Nuclear electromagnetic dipole response with the Self-Consistent Green's Function formalism.

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Microscopic calculations of the electromagnetic response of light and medium-mass nuclei are now feasible thanks to the availability of realistic nuclear interactions with accurate saturation and spectroscopic properties, and the development of large-scale computing methods for many-body physics. In my talk I will present calculations of isovector dipole electromagnetic response and related quantities, i.e. integrated dipole cross section and polarizability, and compare with data from photoabsorption and Coulomb excitation experiments. 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 computed quantities towards the neutron dripline.

Mercredi 9 Janvier 2019
11 :30
IJCLab, Bât. 100, Salle Bâtiment 100, Salle A015