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Electromagnetic and neutral-current responses from Quantum Monte Carlo

Wednesday, 27 September 2017 12:00 (30 minutes)

Understanding the structure and the electroweak interactions of atomic nuclei in terms of their individual constituents is an intriguing nuclear many-body problem. In addition, precise measurements of neutrino oscillations require a quantitative understanding of neutrino-nucleus interactions. I will show how quantum Monte Carlo allows to consistently describe the structure of atomic nuclei and their interaction with electroweak probes, providing a reliable estimate of the theoretical uncertainty of the calculation. I will focus on the electromagnetic and neutral-current response functions of ^{12}C, discussing the effect of two-body currents and the role of relativistic effects in correlated nuclear systems.

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