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## Electromagnetic Response in Nuclei: From Few- to Many-body Systems

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The electromagnetic response of nuclei is a fundamental quantity to calculate, since due to its perturbative nature a clean comparison with experimental data can be performed. First principles computations are key to bridge nuclear physics with the underlying QCD regime [1]. Nowadays this valuable information is not only accessible for the lightest nuclei, but novel theoretical approaches are being developed to tackle nuclei with a larger number of nucleons.

Combining the Lorentz integral transform with the coupled-cluster method recently allowed us to perform ab initio calculations of response functions and related sum rules for light and medium-mass nuclei [2,3]. I will present recent highlights on neutron skins and polarizabilities and discussed them in the context of recent and future experiments [4,5].

References:

- [1] S. Bacca and S. Pastore, J. Phys. G: Nucl. Part. Phys. 41 123002 (2014).
- [2] S. Bacca et al., Phys. Rev. Lett. 111m 122502 (2013).
- [3] M. Miorelli et al., Phys. Rev. C 94, 034317 (2016).
- [4] G. Hagen et al., Nature Physics 12, 186-190 (2016).
- [5] J. Birkhan et al., arXiv:1611.07072.

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