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Structure and reactions of N=7 isotones: the role of core degrees of freedom

The explicit consideration of core degrees of freedom is crucial in order to obtain an accurate description of the structure and reactions of light exotic nuclei. In particular, it is important to consider the role of ground state correlations, respecting the Pauli principle, and including at the same time the continuum in the calculations (1). This is possible in the framework of Nuclear Field Theory, taking the coupling of valence particles and core vibrations in a consistent way. I will present calculations of the spectrum and of direct reactions on N=7 isotones, going from the halo nuclei 10Li and 11Be to the more bound systems 12B and 13C.

(1) F. Barranco, G. Potel, R.A. Broglia and E. Vigezzi, Phys. Rev. Lett. 119 (2017) 082501

Summary

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