



Venerdì 10 Giugno 2016, ore 14:30, **Sala Wataghin**

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***Nuclear Physics with ab initio few-body methods***

Nuclei are the most common manifestation of Quantum Chromo-Dynamics (QCD) in the non-perturbative regime. A description of these systems that starts from the mutual interaction of quarks is still in a semi-qualitative status. An economic but realistic representation can be obtained by considering them as composed by "effective" structureless constituents, protons, neutrons or hyperons, interacting through "effective" mutual forces which are the results of the complicated underlying dynamics and symmetries. In this seminar I will illustrate with some examples the two goals that nowadays are pursued by the few-body community i) an accurate description of those forces and of their two- or three-body nature and ii) the dependence on them of typical many-body phenomena. The two goals are pursued by comparing to data results obtained solving the  $A$  baryon quantum mechanical problem with high accuracy. The importance of ab initio nuclear physics results as inputs for other fields will also be illustrated.