Université Paris-Saclay
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Séminaire de Physique Nucléaire Théorique

Two, three and many nucleons with effective interactions.

V. S. Timóteo

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The nuclear force is responsible for nuclear binding and is understood as being a residual of the QCD interactions between quarks and gluons. The non- perturbative nature of the strong interactions at low energies motivated two decades of development in a framework where the main symmetries are kept but the relevant degrees of freedom are changed. With pions and nucleons, few-body (and many-body) nuclear systems become much more tractable. I will start by discussing some interesting details of the two-nucleon force, then I review the separable and chiral approaches to the three-nucleon system and finish with some results for light nuclei and neutron matter.

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