

*Organisé conjointement par
CPHT-École Polytechnique et Groupe Théorie IPN Orsay*

SÉMINAIRE de PHYSIQUE des PARTICULES

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Hadron interactions from lattice QCD - application to hadron resonances

Résumé :

I will present recent progresses of LQCD on hadronic interactions which play a crucial role to understand hadron resonances and the properties of atomic nuclei. So far, two theoretically equivalent methods, the Lüscher's method and the HAL QCD method, to extract scattering observables have been proposed. First, I will discuss hadron interactions using so-called the "plateau method" in which the energy eigenvalues calculated from the temporal correlation of two hadrons are used to extract the scattering phase shifts by the Lüscher's method. I will demonstrate how the plateau method suffer from a serious contamination of the mixing with different states. I then demonstrate how the HAL QCD method solves the issue. Finally, I proceed to discussions of coupled-channel hadron interactions on the lattice with the HAL QCD method, which are important to study the nature of hadron resonances.

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14:30

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