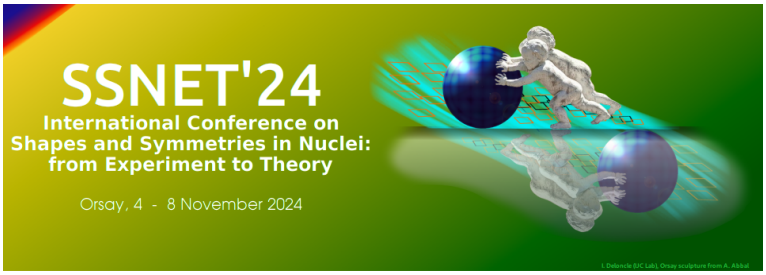

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Clustering and Collective Dynamics in Atomic Nuclei

mardi 5 novembre 2024 15:05 (20 minutes)

The emergence and interplay of effective degrees of freedom, which include collective shape variables, pairing correlations, near-threshold collectivities due to coupling to the continuum, and clustering, represent one of the central questions of modern nuclear physics and quantum many-body physics more broadly. In this talk, I aim to provide specific perspectives on these phenomena and their study using configuration interaction approaches that incorporate continuum physics, as well as methods relying on symmetry and underlying many-body complexity.

In particular, I will highlight our recent advancements in studying clustering using configuration interaction methods that stem from fundamental nucleon-nucleon interactions. I will discuss specific applications of our theoretical studies of light nuclei and recent works on experimental validations.

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