

# Multi-neutrons correlations in the continuum

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**Abstract:** The Shell Model is a widely used theory for describing many-body systems. It is based on a single-particle representation from which the many-body representation is built in. In nuclear physics, the many-body shell model is used to describe the ground and low-lying spectra. The extension of the shell model to open system requires the inclusion of the single-particle continuum into the representation. This can be achieved by considering the real energy scattering states, using the Newton's representation or by incorporating the resonances, through the so called Berggren representation. In this seminar, I will discuss applications of the many-body shell model with complex energy states, known as Gamow Shell Model, in relation to atomic nuclei with one, two, and four valence neutrons, all of them describing finite unbound systems.



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