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Exploring exotic nuclei within the MCAS framework

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The study of exotic nuclei, especially near and beyond the drip lines, is becoming increasingly important with the advent of new facilities, which seek to explore the nuclear landscape well beyond the valley of stability. Theoretical efforts have increased in order to develop realistic models and determine (predict) properties, given that many of the nuclei of relevance may still be inaccessible experimentally. Its direct application to nuclear astrophysics makes this aspect crucial. This talk will describe one method of description of exotic nuclei, that coming from the collective model aspects of the Multi-Channel Algebraic Scattering (MCAS) theory, which has had great success in describing spectra of exotic nuclei. Comparisons with the shell model will be made where possible. Future prospects will be discussed.

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