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Pinpointing Structure of Exotic Nuclei Using Simple Signatures¹

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The advent of radioactive nuclear beams opens up entirely new regions of exotic nuclei for study. However, the experimental data on these nuclei will be sparse and different methods for elucidating structure from a few simple observables are necessary. An approach using the interacting boson approximation (IBA) model to interpret the low energy spectra of collective even-even nuclei will be presented. By investigating the intersection of constant contours of simple observables within the IBA symmetry triangle, the structure of a particular nucleus can be determined relative to the three dynamical symmetries of the IBA and to the phase structure in the triangle. This approach can be tested on isotopic chains near stability, then applied to exotic regions of nuclei.

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