

Abstract Submitted
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Structure of even-A nuclei in the neutron-rich region of the nuclear chart predicted by the r-process¹ RAUL CHAVARRIA, Florida International University, ANI APRAHAMIAN, Notre Dame University — The main goal in nuclear physics is the study of the properties of the nucleus as a function of protons and neutrons that make it up. Three particular areas of interest in nuclear physics are the study of masses, structures and half-lives of nuclei. Much is known about nuclei close to stability but lack of sophisticated equipment has limited research on exotic nuclei in the neutron-rich region of the nuclear chart predicted by the r-process. By studying the energies of the 4+ and 2+ excited states of nuclei to the ground state of even-A nuclei, it is possible to roughly determine the structure of nuclei. Looking at how this ratio changes as a function of the P factor, it is possible to see how the structure changes for nuclei as the neutron and proton count move away from close shell magic numbers. This provides an important tool to study the structure of exotic nuclei whose quadrupole moment is very difficult to see experimentally. I will discuss specific predictions on the structure of even nuclei at $A \sim 110$.

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