

Abstract Submitted
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Nuclear observables indicating the evolution of shell structure

IAN BENTLEY, Saint Mary's College — The formation and disappearance of shells and subshells across the chart of the nuclides is discussed. A previously introduced method of structural analysis is used to compare experimental observables among neighboring even-even nuclei. The observables investigated include the mean square charge radius, as well as, other spectroscopic and mass related quantities. The technique employs differential observables and uses them to serve as the derivatives for these quantities of interest. Local extrema in these observations indicate shell closures and the lack of local extrema indicate missing shell closures. The ground-state spin and parity of odd-A nuclides provide additional insight on these shell structure determinations, for both protons and neutrons.

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