Abstract Submitted
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Nuclear shells, sub-shells and shell evolution IAN BENTLEY, Saint Mary's College (Indiana) — Shell structure in nuclei is seen in transition rates, binding energies and the energetics of excited states. The robustness of shells have been tested using extrema and differential observables. The shell and sub-shell closures between $8 \leq N, Z \leq 50$, and missing signatures of shells will be a primary focus, as will the migration of shells in energies of $6_1^+, 8_1^+$, and 10_1^+ states. Pairing correlations have been determined across the chart of the nuclides using linear fits as a function of $I(I+1)$ for $I \geq 20$ yrast states. These correlations occur at roughly the same locations as binging energy based correlations, but are noticeably larger in magnitude. A discussion of the comparison of experimentally determined pairing correlations and pairing calculations using the BCS formalism for gadolinium nuclei will be included.

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