

Polynomial trends in nuclear electromagnetism

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Abstract

Nuclear species with large imbalances between protons and neutrons are tough to produce and live incredibly short. Fewer and fewer atomic nuclei become the subject of new scientific inquiries each year. In this emerging reality, contemporary nuclear data tend to be local, and their associated interpretations are often limited in scope and applicability. However, nuclear electromagnetic properties often follow simplistic mass-dependent trends that can be described with a simple polynomial. This subject has been reinvigorated by collinear laser spectroscopy, which typically addresses an isotopic chain and is therefore generally non-local. A survey over the entirety of nuclear data on magnetic moments will be presented, and future work on charge radii and electric moments will be outlined.