Isotopic Yields and Isoscaling in Fission

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abstract

A simple model is proposed to examine the isotopic yields of the fragments from binary fission. For a given charge partition the peaks and widths in the isotope distributions are studied both with the liquid-drop model and with shell modifications. The basis for isoscaling is also explored. The symmetry energy plays a dominant role in both the distributions and the isoscaling behavior. A systematic increase in the isoscaling parameter, $\alpha$, with the proton number of the fragment element is predicted in the context of the liquid-drop model. Deviations arising from shell corrections are explored.