

## Nuclear structure oddities from ISOLTRAP mass measurements

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The results of two recent ISOLTRAP experiments are discussed in this contribution.

- (1) Sudden offset of deformation around  $N=60$   
(or, Reformation of Kr isotopes around  $N=60$ )

Whereas canonical nuclear structure decrees a sub-shell closure at  $N=56$ , neutron-rich Zr and Sr isotopes are known to exhibit sudden and intense deformation instead. This deformation, visible from a deep dent in the mass surface, is interpreted as a nuclear quantum phase transition. It is of interest to determine the conditions where this phase transition (or deformation) begins but also where it ends. Microscopic mass predictions in the mean-field framework (HFB-17) tells us that Kr will be strongly deformed as well. However, first mass measurements of  $^{96,97}\text{Kr}$ , using the Penning-trap spectrometer ISOLTRAP, show this not to be the case.

- (2) All quiet on the western  $N=40$  front  
(or, Magic-number migration in Mn isotopes)

The many attempts of establishing a shell closure at  $N=40$  have resulted in admitting that the effect depends on whether  $Z=28$  or not. New mass measurements of Mn ( $Z=25$ ) from ISOLTRAP confirm this observation. In fact, the strong effect at  $N=35$  visible from previous measurements is shown to completely disappear. However, a new effect, though more subtle, does appear in the case of  $N=34$ , perhaps indicating the manifestation of a new magic number.

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