

Isoltrap harvest 2008

Monday 17 November 2008 14:40 (30 minutes)

The ISOLDE mass-spectrometer Isoltrap has recently successfully addressed a number of scientific highlights across the entire nuclear chart, among others: the question of proton-halo character of ^{17}Ne , and the “restoration” of the $^{132},^{134}\text{Sn}$ and $^{80},^{81}\text{Zn}$ shell closures, of great relevance for the astrophysical r process. The latest results include masses of neutron-rich Ag and Cd isotopes which are important due to the proximity of $Z = 50$, and masses of neutron-deficient Cd isotopes relevant for the magicity of $N = 50$.

Also 2008 gave us many very nice results: masses around $Z=82$ interesting for neutrino-mass determination; masses of $^{126},^{128}\text{Cd}$, $^{143}-^{146}\text{Xe}$ and $^{223}-^{229}\text{Rn}$ interesting for nuclear-structure questions: residual neutron-proton interaction reflected in the so called dV_{np} values, and compared to IBA calculations, and –presently ongoing- masses and trap-assisted decay spectroscopy on neutron-rich Hg isotopes. During our investigations we even discovered a new nuclide, ^{229}Rn . The presentation will give a comprehensive review of the above results, followed by an outlook.

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Session Classification: Ground State Properties