

JYFLTRAP at IGISOL - Atomic masses from nuclear structure physics to fundamental physics

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JYFLTRAP and IGISOL-facility has been in high-precision operation now for few years producing vast amount of atomic mass data for nuclear structure studies and fundamental physics. All in all more than 200 atomic masses of ground and isomeric states has been measured from sub-keV to few keV precision. In this contribution the recent highlights from the facility will be reviewed and few examples will be described in more detail.

In neutron-rich side of the nuclide chart proton-induced fission of ^{238}U has been applied to produce isotopes from Ni to Pd for mass spectroscopy in JYFL. In this contribution, new data on the evolution of the $N=50$ shell gap will be discussed.

On neutron-deficient side, a large fraction of our mass measurement program has concentrated on the refractory isotopes below 100Sn . These measurements contribute to nuclear structure and nuclear astrophysics questions in this region. In this contribution, recent measurements around ^{94}Ag will be discussed in detail to shed light on the puzzle of highly disputed two-proton decaying high-spin ($21+$) isomer in ^{94}Ag .

Finally, precision Q -value measurements for super allowed beta decay and double beta decay will be discussed in context of CVC-hypothesis, unitarity of CKM-matrix and neutrino physics.

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