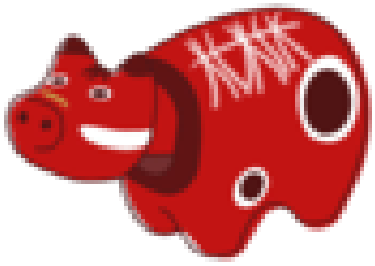

Contribution ID: **24** Type: **not specified**

In-gas-cell laser ionization spectroscopy of the nuclei in the vicinity of N=126 at KISS

Wednesday, 5 March 2025 10:15 (20 minutes)

We have developed the KEK Isotope Separation System (KISS) [1] at RIKEN to study the nuclear structure of the nuclei in the vicinity of neutron magic number $N = 126$ from the astrophysical interest. These neutron-rich nuclei have been produced by using multinucleon transfer reactions [2] with the combinations of the low-energy ^{136}Xe beam and the production targets of W, Ir, and Pt.
At the KISS facility, radioisotopes are ionized by applying in-gas-cell laser ionization technique. In the ionization process, we can perform laser ionization spectroscopy of the refractory elements with the atomic number Z = 70-78 such as Hf, Ta, W, Re, Os, Ir, and Pt, which can not be performed in other facilities. Laser spectroscopy can be used to effectively investigate the nuclear structure through the measured magnetic moments, isotope shifts (IS), changes in the mean-square charge radii, and quadrupole deformation parameters. We have performed in-gas-cell laser ionization spectroscopy of ^{199g,199m,200,201}Pt [3], ^{196,197,198}Ir [4], ^{194,196}Os [5], and ^{191,192}Re produced at KISS.
In this conference, we will report the recent results of laser ionization spectroscopy, and the perspective of future plan at KISS.

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Type of contribution

Are you a student or postdoc?

no

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