



## Development of Mass Spectrometers for Nuclear Astrophysics

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Zoom:

<https://ijclab.zoom.us/j/98233990874?pwd=cUN5THhpcJJBbzRVbk1qWVpRWGI5UT09>

In this seminar, I will introduce the pivotal role of atomic masses in our understanding of Nature, from the definition of the age of the sun to the structure of the nucleus as well as the physics of neutron stars. The increasingly precise knowledge of atomic masses continues to play an important role in our understanding of the evolution of the universe. The recent observation of gravitational-wave signals by LIGO/VIRGO simultaneously with a light source detected by Fermi/INTEGRAL from a neutron star merger event GW170817 was a turning point in the history of the nucleosynthesis of chemical elements. In this context, atomic masses of exotic nuclei are the most important nuclear properties for understanding the synthesis of half of the heavy chemical elements in such cataclysmic event. I will show the key role of mass spectrometry advances in overcoming the challenges of mass measurements of exotic nuclei, with emphasize on developments conducted at ISOLDE/CERN and RIBF/RIKEN. I will also show the broader applications of mass spectrometry techniques in the determination of other nuclear properties that are essential for nuclear astrophysics as well as nuclear physics.