

PLATAN 2024 - Merger of the Poznan Meeting on Lasers and Trapping Devices in Atomic Nuclei Research and the International Conference on Laser Probing



Contribution ID: 155

Type: **Poster Presentation**

Technical progress at the double Penning trap PIPERADE

The inauguration of the buildings for the DESIR facility marked an essential step in developing experiments with low-energy radioactive beams in France. The LP2IB laboratory has been a primary driving force by devising several complex devices that will be the backbone of the facility. In this presentation, I will show the development work done for one of these devices, i.e. the double Penning trap PIPERADE (Pièges de Penning pour le RADionucléides à DESIR). This Penning trap spectrometer has been designed for high-resolution mass purification of strongly contaminated ion beams. To push the limits of existing devices, PIPERADE is equipped with a high-capacity large trap that aims to separate up to $1e5$ ions per bunch. Purified samples will be re-injected in the main DESIR beam line for downstream setups to perform trap-assisted spectroscopy. Alternatively, the samples can be utilized to perform high-precision mass measurements. After a presentation of the DESIR facility and of the local installation at LP2I Bordeaux, I will present the PIPERADE device as well as the most recent developments on the trap, notably the progress on the PI-ICR technique.

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Session Classification: Poster Sessions