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News from the ion cooler-buncher of the DESIR hall

The General Purpose Ion Buncher (GPIB) is a gas-filled radiofrequency-quadrupole that will be instaled at the entrance of the DESIR experimental hall currently under construction at GANIL. The GPIB will both cool the beams coming from the SPIRAL1 and S3 facilities and bunch them if needed by the experiments further downstream.
All the beams being delivered to the DESIR hall going through the GPIB, the latter must accomodate the different needs of the various experiments in terms of intensity as well as of time and energy distributions while maintaining a high transmission.
The mechanical design is highly similar to the existing ISCOOL RFQ located on the HRS beamline at ISOLDE (CERN) but the new radiofrequency system based on an air-coupled balun transformer enables a much stronger radial confinement of the ions inside the cooler so as to handle the high production rates expected at DESIR: around 10^8 ions per second for most nuclides but up to 10^{10} ions per second in some specific cases.
The GPIB has been assembled at LP2i-Bordeaux where it is currently being commissioned in parallel with the PIPERADE double Penning trap that has been installed on the same beamline and makes use of the cooled beam of the GPIB. A transmission of 80% or higher has been demonstrated in continuous mode (cooling only) up to a few nA of incoming alkali ions while the transverse emittance is lowered down to about 10 π.mm.mrad at 3 keV. Results concerning energy and time dispersions will also be shown.

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