



Contribution ID: 162 Contribution code: FRXD3

Type: Invited Oral Presentation

## Commissioning and operation of the SPIRAL2 SC linac

*Friday, 12 May 2023 10:00 (30 minutes)*

The SPIRAL2 linac is now successfully commissioned; H<sup>+</sup>, 4He<sup>2+</sup>, D<sup>+</sup> have been accelerated up to nominal parameters and 18O<sup>6+,7+</sup> and 40Ar<sup>14+</sup> beams have been also accelerated up to 7 MeV/A. The main steps with 5 mA H<sup>+</sup>, D<sup>+</sup> beams and with 0.8 mA 18O<sup>6+</sup> are described. The general results of the commissioning of the RF, cryogenic and diagnostics systems, as well as the preliminary results of the first experiments on NFS are presented. In addition of an improvement of the matching to the linac, the tuning procedures of the 3 Medium Energy Beam Transport (MEBT) rebunchers and 26 linac SC cavities were progressively improved to reach the nominal parameters in operation, starting from the classical “signature matching method”. The different cavity tuning methods developed to take into account our particular situation (very low energy and large phase extension) are described. The tools developed for an efficient linac tuning in operation, e.g. beam energy and intensity changes, choice of the optics to obtain the requested beam parameters on target...are also discussed.

### Funding Agency

### Footnotes

### I have read and accept the Privacy Policy Statement

Yes

**Primary author:** ORDUZ, Angie (Grand Accélérateur Nat. d'Ions Lourds)

**Co-authors:** BERNAUDIN, Pierre-Emmanuel (Grand Accélérateur Nat. d'Ions Lourds); DI GIACOMO, Marco (Grand Accélérateur Nat. d'Ions Lourds); JAMET, Christophe (Grand Accélérateur Nat. d'Ions Lourds); LAGNIEL, Jean-Michel (Grand Accélérateur Nat. d'Ions Lourds); NORMAND, Guillaume (Grand Accélérateur Nat. d'Ions Lourds); SAVALLE, Alain (Grand Accélérateur Nat. d'Ions Lourds); URIOT, Didier (Commissariat à l'Energie Atomique et aux Energies Alternatives)

**Presenter:** ORDUZ, Angie (Grand Accélérateur Nat. d'Ions Lourds)

**Session Classification:** MC04.3 - Hadron Accelerators (Invited)