

Planned future upgrades of Linear IFMIF Prototype Accelerator (LIPAc)

Monday 26 August 2024 16:00 (2 hours)

Under the Broader Approach (BA) agreement the Accelerator Facility validation activities aim at demonstrating the acceleration of 125 mA D⁺ beam up to 9 MeV. This is the main goal of the Linear IFMIF Prototype Accelerator (LIPAc) under installation, commissioning and operation in Rokkasho.

LIPAc is currently operating in its Phase B+ configuration, which consists of all the beamline except the SRF Linac (high duty cycle operation results up to 5 MeV are reported by T. Akagi in this conference). Installation and commissioning activities of the SRF Linac will then follow to complete Phase C and D operations.

In parallel, a number of upgrades for several systems are being designed and procured taking into account the lessons learned so far during commissioning and operation and will be the main object of this paper. These systems are: a new injector encompassing a new design of beam production and extraction system and of the LEPT; a new RF system based on SSPA technology for the RF-RFQ, whose full scale prototype is being manufactured and validated in 2024; a new set of RF-RFQ power couplers with improved design to overcome the limitations suffered by the couplers currently installed in LIPAc; a new set of SRF-RF power couplers and HWR; a new MPS based on centralized design and COTS.

Footnotes

Funding Agency

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