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Commissioning status of the RF power source for the LIPAc SRF linac

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The Linear IFMIF Prototype Accelerator (LIPAc) is designed as a high-current deuteron linear accelerator (linac) capable of accelerating a 125-mA beam up to 9 MeV in continuous wave (CW) mode. The RFQ linac and subsequent beam transport lines equipped with several diagnostics successfully commissioned a 119-mA deuteron beam with an 8.75% duty cycle. The superconducting RF (SRF) linac is the remaining critical component to be commissioned in CW to reach the final acceleration target of 9MeV. The installation of the SRF linac into the beamline is currently underway. In preparation for the integrated commissioning of the SRF linac, the RF station has been commissioned in stand-alone mode. Unlike the synchronized RF control of the RFQ (where 8 RF chains inject in one resonant cavity), the SRF-RF control can be fine-tuned individually and new functionalities peculiar to the SRF environment, such as quench detection, have been implemented. This report summarizes the features of the LIPAc SRF-RF system and its current commissioning status.

I have read and accept the Privacy Policy Statement

Yes

Footnotes

Funding Agency

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