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Low frequency beam position monitoring at the TRIUMF cyclotron injection line

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A new 1mA ion source and a new injection line are presently under construction at TRIUMF for the 500 MeV H- cyclotron. A 300keV ion beam is pulse modulated at the exit of the ion source with a duty cycle varying in the range 1% - 99%. The pulse repetition frequency is around 1kHz and this is the only time varying beam structure available for a substantial fraction of the injection line, till the beam is bunched with an RF-frequency of 23MHz, before being injected to the cyclotron. A set of new diagnostics was developed to support operation of the injection line including the beam position monitoring system operating in the kHz regime. The beam position measurements are based on capacitive pickups and high-impedance electronics to extend the sensitivity towards low frequencies. Details of the system and test measurements will be presented.

Footnotes

Funding Agency

I have read and accept the Privacy Policy Statement

Yes

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