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Beam Position Monitoring for Low Energy Cooling Section

Thursday 30 October 2025 14:00 (30 minutes)

Electron-Ion Collider will employ electron cooling of protons at the injection energy. To reduce the space charge effects, the RF system will be set to produce flat top proton bunches with reduced peak current. There will be three electron bunches per proton bunch separated by 5 nanoseconds. Electronics for the electron beam can be based on a conventional narrow-band processing at 394 or 591 MHz frequency. But the receivers for the proton beam are more demanding since we want to support their operation at store energy as well where bunch repetition rate can increase to 98.5 MHz. In this paper the technical solution as well as cross calibration of two systems are presented.

Footnotes

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Yes

Author: PINAYEV, Igor (Brookhaven National Laboratory)

Co-author: SELETSKIY, Sergei (Brookhaven National Laboratory)

Presenter: PINAYEV, Igor (Brookhaven National Laboratory)

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