Contribution ID: **112** Contribution code: **MOP016** Type: **Poster Presentation**

Benchmarking the use of BPM quadrupole moments to measure emittance

Monday 11 August 2025 16:00 (2 hours)

For the PIP-II program, transverse emittance in the Fermilab Booster must remain well controlled at higher bunch intensities. 4-plate beam position monitors (BPMs) have a small but measurable quadrupole moment, making it possible to infer transverse emittance. By compositing many BPMs together, it becomes possible to improve the quality of the quadrupole signal. The Fermilab Booster BPM system has been used to measure these quadrupole moments in the past year and derive emittances from them. Recent benchmarks show that the derived BPM emittances show similar emittance evolution and value to IPM and Multiwire data. This approach can both supplement and complement existing non-intercepting emittance monitors in accelerators.

Please consider my poster for contributed oral presentation

Yes

Would you like to submit this poster in student poster session on Sunday (August 10th)

No

Footnotes

Funding Agency

I have read and accept the Privacy Policy Statement

Yes

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