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## Optics measurements to test eddy current compensation in the CERN Proton Synchrotron injection magnets

*Wednesday 4 June 2025 16:00 (2 hours)*

Single-turn injection in the CERN Proton Synchrotron (PS) takes place on a displaced orbit in the injection region. A closed-orbit bump is created at injection by means of dipole corrector magnets (BSW), pulsed over hundreds of turns. The pulsing of the BSWs, and the related fast field changes, generate sextupole eddy-currents. The beam, injected off-center, is affected by feed-down. This can result in a significant tune-shift during injection. A new circuit was installed in the machine at the end of 2023 to mitigate the effects of these sextupole eddy-currents at injection. Beam-based measurements have been carried out to characterize this effect and assess the impact of the eddy-currents compensation circuit on the measured optics.

### Footnotes

### Paper preparation format

LaTeX

### Region represented

Europe

### Funding Agency

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