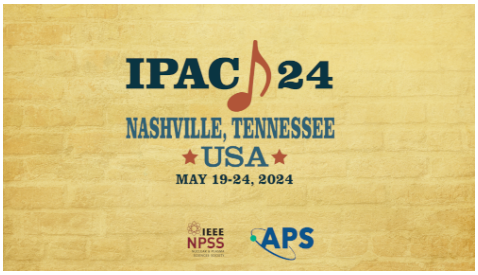

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Investigating transverse noise excitation for improving slow extracted spill quality at the CERN PS

Thursday, 23 May 2024 16:00 (2 hours)

One of the most fundamental aspects of the slow extraction process is the uniformity of the spill. In this contribution, the application of transverse radio-frequency (RF) noise excitation is investigated to mitigate the low-frequency ripple (~100 Hz), which is caused by imperfections in the power converters supplying current to the CERN Proton Synchrotron's (PS) main magnets. A transverse RF exciter and a realistic power converter ripple are incorporated into an Xsuite simulation model of the CERN PS to simulate the slow extraction process and benchmarked with beam measurements.

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