

## Fast Spill Monitoring at the CERN SPS

Monitoring the extraction of protons from the CERN Super Proton Synchrotron (SPS) ring to the North Area (NA) facility at a high rate is crucial for optimizing the extraction process and ensuring efficient fixed target physics. To achieve this, it is necessary to measure beam current fluctuations across a wide range of frequencies, from a few hundred Hz to several hundred MHz. This optimization is important for the current facility operation, ongoing NA consolidation, and future Physics Beyond Colliders (PBC) projects. PBC may even require measurements in the several GHz range.

This presentation will focus on the current status and future prospects of fast spill monitors that have been developed and tested in recent years. One particular emphasis will be on a monitor that detects beam-induced Optical Transition Radiation (OTR). Additionally, an overview of the status of diamond, secondary electron emission, and Cherenkov light monitors will be provided.

**Primary authors:** Dr BENITEZ, Sara (CERN); Dr BELOHRAD, David (CERN); Dr MAZZONI, Stefano (CERN); EFFINGER, Ewald (CERN); Dr CALVO, Eva (CERN); GOLDBLATT, Aurelie; RONCAROLO, Federico (CERN)

**Presenter:** RONCAROLO, Federico (CERN)

**Session Classification:** Slow Extraction Hardware and Machine Protection