TUTORIAL ORAL

Beam Loss Monitors (BLMs): Physics, Simulations and Applications in Accelerators

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Beam Loss Monitors are common devices used in hadron and lepton accelerators. Depending on accelerator specifics, BLMs could be just diagnostics or could play an essential role in the Machine Protection System (MPS). This tutorial discusses different types of BLMs and their applicability to different accelerators. It covers traditional BLMs like ionization chambers and scintillator-based devices, and also less common techniques like those based on fiber optics and avalanche diodes. The tutorial gives an overview of the underlying physics involved in beam loss detection, and recent advances in computer simulation of particle interaction with matter helpful for BLM modeling. Options for signal processing electronics are described, as well as interfaces to both the control system and the MPS.

Funding Agency: ORNL/SNS is managed by UT-Battelle, LLC, under contract DE-AC05-00OR22725 for the U.S. Department of Energy.