Beam Loss Monitoring

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Abstract

This tutorial will review the characteristics of the ionizing radiation caused by beam losses from various types of particle accelerators, including high and low energy proton and electron machine. The characteristics of a variety of beam loss monitors and their suitability for typical applications will then be reviewed. Detectors to be discussed include gas ionization chambers, proportional chambers, GM tubes, solid-state PIN diodes, Compton diodes, Phototube-scintillator systems, Cerenkov detectors, proton recoil (for neutron), and thermal neutron detectors.