

Experimental Fragment of the Nuclotron Beam Losses Monitor System

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Abstract

One of the main tasks of the LHE accelerator complex development is to increase the intensity of accelerated beams. To solve this problem, it is necessary to design the systems of orbit correction and control, betatron oscillation frequency measurement and beam loss monitoring.

The aim of the Nuclotron Beam Loss Monitor System (BLMS) is to locate and to measure beam losses during injection, acceleration and extraction by registering neutron radiation in proximity to the accelerator structure elements. The BLMS is part of the Nuclotron Control System. An advanced version of the BLMS will include 64 neutron detectors installed near the vacuum covers of the structural lenses. Data acquisition is performed by the hardware placed in the Nuclotron Data Concentrator.

An experimental fragment of the BLMS is described and first experimental results are discussed in this paper.