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Data acquisition system of beam loss diagnostics for SKIF synchrotron light source

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Data acquisition system of beam loss monitors (BLM) was developed for Siberian ring source of photons (SKIF) which is under construction in Novosibirsk, Russia. The BLM consist of Cherenkov beam loss monitors (CBLM) and scintillator-based beam loss monitors (SBLM), which should ensure the stability of the SKIF operation. Recording system for CBLM is based on two-channel measuring modules operating with 10-bit amplitude resolution, sampling rates up to 5 GHz, with repetition rates up to 10 kHz. These modules based on DRS4 chip (Swiss Institute PSI), working scale-time conversion technology (SCA - switch capacitor array). Four-channel measuring modules are used to record signals from SBLM. They were developed based on the oscillographic data recording method. Each channel of the measuring module provides data recording with a sampling rate of 250 MHz and an amplitude resolution of 14 bits. The CBLM and SBLM measuring modules are combined into the general data acquisition system by cable synchronization lines, linking the data acquisition cycles to external events.

Minioral

Yes

IEEE Member

Yes

Are you a student?

No

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