Contribution ID: 9

## MTCA.4-based high-speed digitizer system for J-PARC MR

Tuesday 10 December 2024 17:00 (15 minutes)

Monitoring and analysis of the recorded beam signal is essential for the beam operation.

Oscilloscopes are currently used to record the waveform of the beam signal in the Main Ring (MR) of the Japan Proton Accelerator Research Complex (J-PARC).

Since the memory size and the data transfer speed are limited for the oscilloscope,

it is hard to record and transfer the waveform of the beam signal for the whole acceleration cycle for every pulse.

To meet the requirement, a high-speed MTCA digitizer system is introduced into the J-PARC MR.

MTCA digitizer system consists of Teledyne SP Devices ADQ14 digitizer AMC and Vadatech VT816 chassis. The digitizer's memory is large enough to store the beam signal for the whole acceleration cycle recorded with a sampling speed faster than 500MSa/s.

Data transfer via PCI-express in the MTCA backplane enables continuous data acquisition from the digitizer. In this presentation, the current status and future of the application of the MTCA.4-based digitizers are presented.

Primary author: SUGIYAMA, Yasuyuki (KEK)

Presenter: SUGIYAMA, Yasuyuki (KEK)

Session Classification: Session 2