Data acquisition monitoring system with Manyo Library at MLF, J-PARC

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The on-line monitoring system, which executes data reduction and visualization in the middle of a measurement, is strongly required by users at MLF, J-PARC. However, we had only a simple on-line monitoring provided by the DAQ-Middleware [1], which gives users just graphical plots or text data with a poor flexibility. To realize useful on-line monitoring, we’ve developed successfully the system to read and analyze only event data increased newly by our data acquisition system (DAQ) by means of repeated observations of data files. This system is achieved by two developments. One is a new component of DAQ-Middleware to make position indexes in data files at a same time as neutron event recording in order to enable fast access to a part of event data files. Another is a new function in Manyo Library [2] to make histogram by reading repeatedly incremental events using the index information of event data files. As results, a mount of events analyzed at a time is optimized and its process time including the visualization becomes short, which works like the on-line monitoring.

In this presentation, we report the current status of this monitoring system and introduce how it is working on some actual beam lines in MLF at J-PARC.

References