Contribution ID : **297**   Type : **Oral talk**

The BM@N experiment online data processing and QA system

Friday, 25 October 2024 16:55 (15)

The BM@N experiment (Baryonic Matter at Nuclotron) is a fixed target experiment and the first stage of the NICA project (Nuclotron based Ion Collider fAcility). The experimental facility is designed to explore properties of dense quark matter. The code for data decoding, track reconstruction and QA is being developed as a part of BmnRoot – a BM@N software framework, based on the FairRoot package. The QA system is capable of online decoding of the raw data stream from the data acquisition, the consequent reconstruction and live web histogramming. The system is flexible and allows to run decoding, reconstruction and monitoring processes as processes on different machines exchanging data via ZeroMQ sockets. The user is able to monitor any detector subsystem, select specific detector station, plane, time or strip profile histograms in 1/2/3D view. The QA functions are presented by reference run auto-selecting and consequent overlaying histograms. The online QA has been tested on several technical and the physical run during the 4th NICA commissioning run.

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Session Classification :   Facilities and advanced detector technologies

Track Classification :   Facilities and advanced detector technologies