

## Student's Zone 2018 of the NICA Project



Contribution ID: 44

Type: **Team for the Future of NICA Dubna 2018**

# BM@N online monitoring development

BMN online monitoring development

BM@N - Baryonic Matter at Nuclotron is a fixed target experiment that is part of NICA (Nuclotron-based Ion Collider fAcility). This experiment is dedicated to study ion collisions to study properties of the equation-of state (EoS) of dense nuclear matters. This EoS plays a crucial role for understanding nature of neutron stars and collapses of supernovae.

Data taking in experiment requires continuous monitoring of quality. Therefore it's important to have an on-line system for monitoring quality of experimental data. Currently was implemented fast decoding algorithm and monitoring system to BmnROOT. System consists of two parts – first is RawDataDecoder that gets raw data from DAQ system and decodes into ROOT format. Second part is BmnMonitor that reads data from ZeroMQ socket and fills histograms. Histograms are made accessible by ROOT THttpServer. Lighttpd web server serving as local proxy makes it available for outside http requests.

*Tasks:*

1. Installation of BmnROOT
2. Installation of lighttpd web server
3. Extension of the monitoring functional: adding new histograms for existent detector presenting classes; writing new classes particularly for cathode strip chamber and other.

*Recommended literature:*

1. <http://mpd.jinr.ru/howto-install-mpdroot/>
2. <http://zeromq.org/>
3. ROOT Data Analysis Framework, Users's Guide
4. <https://root.cern.ch/js/>
5. <https://github.com/root-project/jsroot/blob/master/docs/HttpServer.md>

*Number of participants: 1*

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**Session Classification:** TeFeNica-2018

**Track Classification:** Slow Control Warsaw 2018