

Система онлайн мониторинга эксперимента BM@N

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ЛФВЭ, ОИЯИ

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General characteristics:

Beams - $p, d \dots {}^{197}\text{Au}^{79+}$

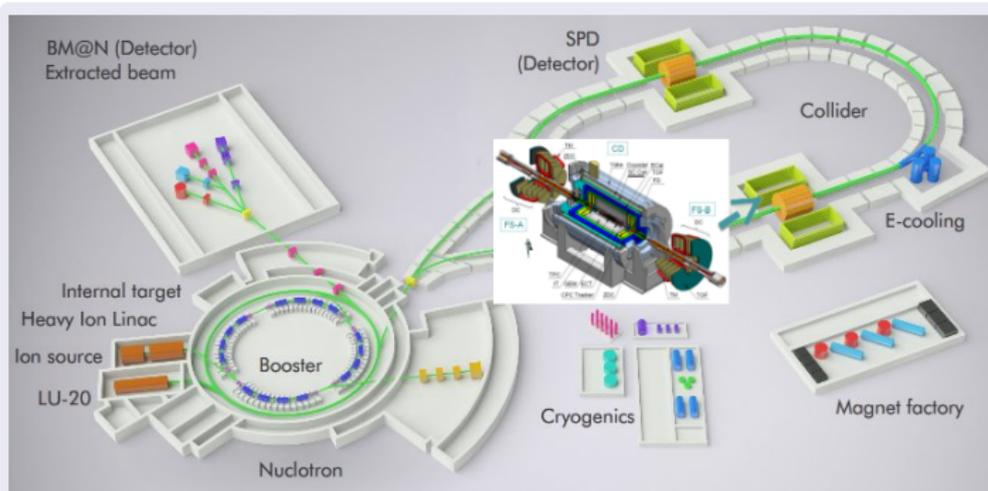
Collision energy:

$$\sqrt{s_{NN}} = 4 - 11 \text{ GeV} \quad E_{lab} = 1 - 6 \text{ AGeV}$$

Luminosity: $10^{27} \text{ cm}^{-2} \text{ s}^{-1}$ (Au), 10^{32} (p)

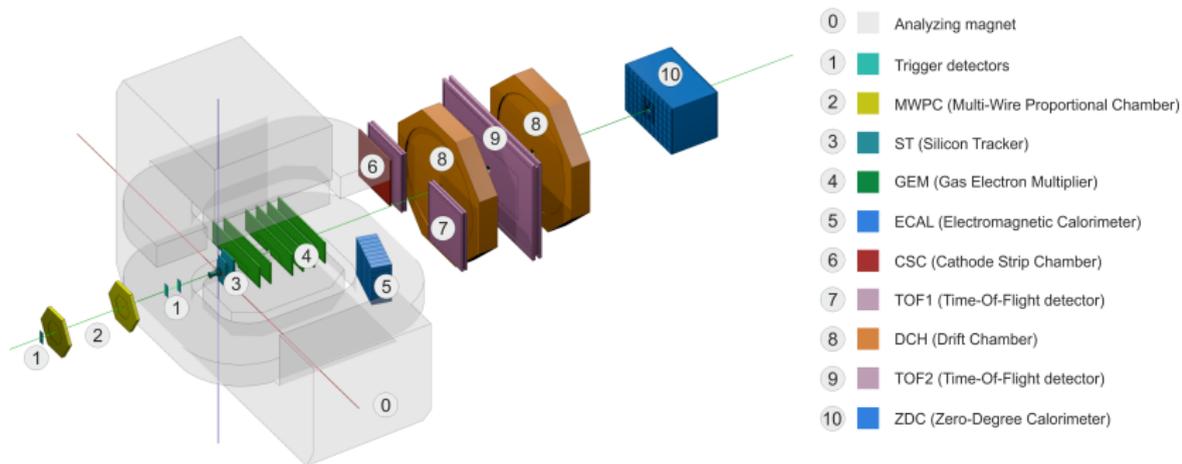
Experiments:

- 2 interaction points - **MPD** and **SPD**
- Fixed target experiment - **BM@N**

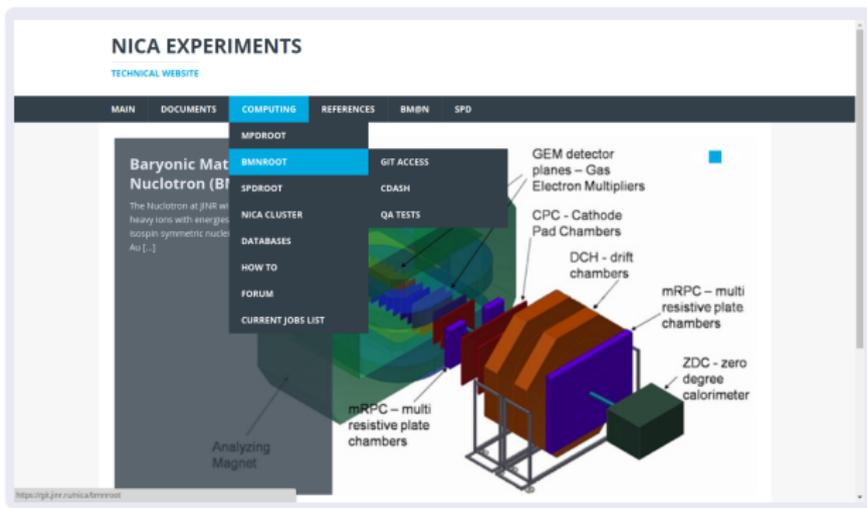


The general contractor is **STRABAG** (Bodostal-3 & PCJ are the sub-contractors)

- **2017**: extracted beams of heavy ions are available within the BM@N experiment
- **2019**: a first configuration of the MPD setup available.
- **2023**: commissioning of the fully designed NICA-complex is foreseen.



<https://nica.jinr.ru/ru/projects/bman.php>



NICA experiments home web-page:

<http://mpd.jinr.ru>

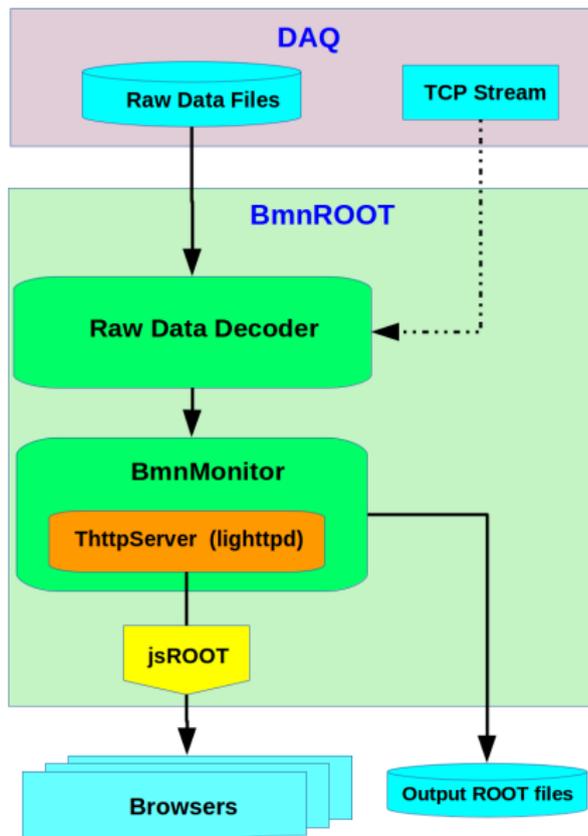
- News
- Software repositories
- Software tests
- Forums
- Database for physics run
- E.t.c.

Benefits:

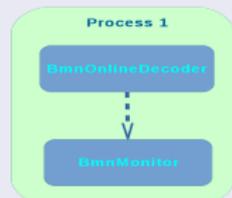
- Inherits basic properties from FairRoot (<https://fairroot.gsi.de/>), C++ classes
- Extended set of event generators for heavy-ion collisions
- Detector composition and geometry; particle propagation by GEANT3/4
- Advanced detector response functions, realistic tracking and PID included
- Event display for Monte-Carlo and experimental data

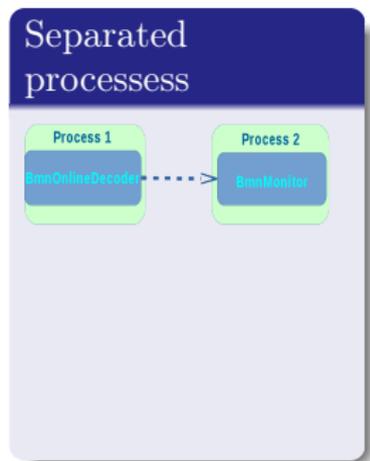
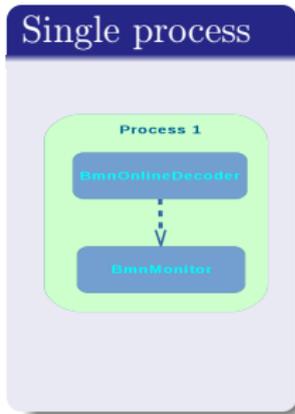
BmnROOT repository

<https://git.jinr.ru/nica/bmnroot>

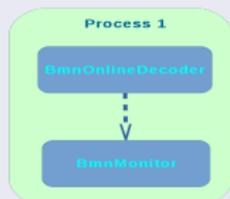


Single process





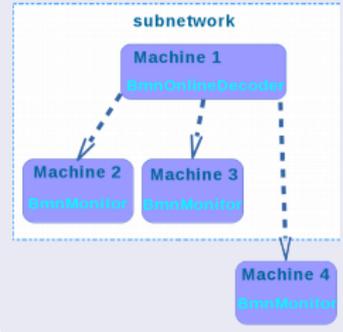
Single process



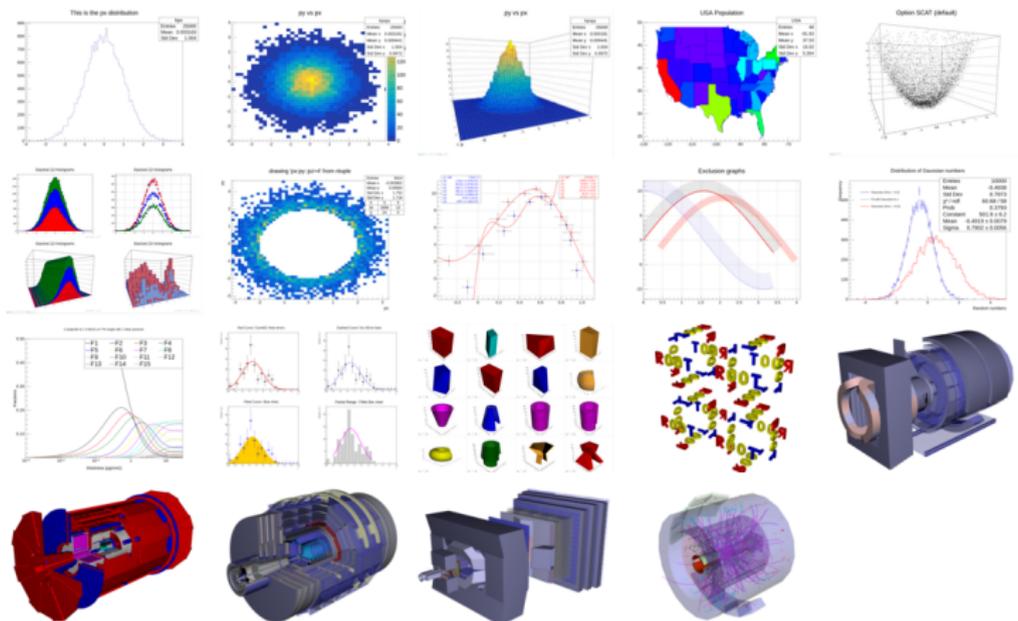
Separated processes



Distributed

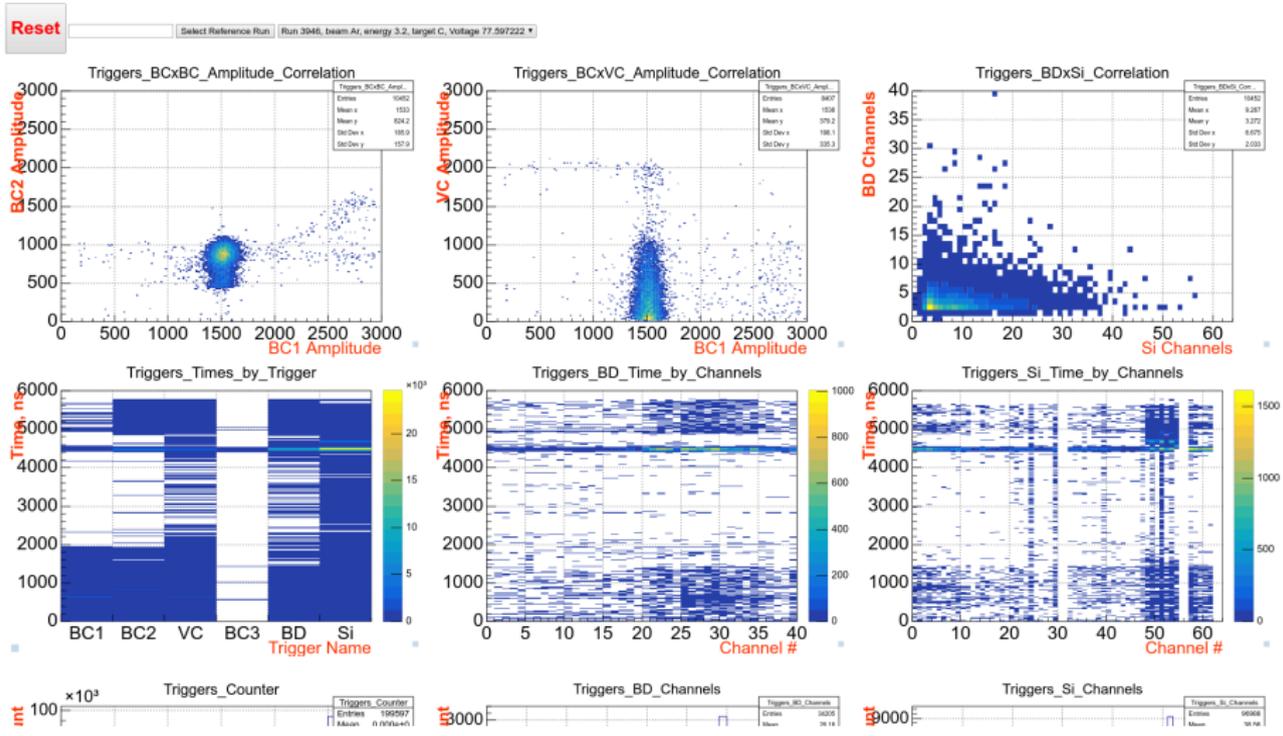


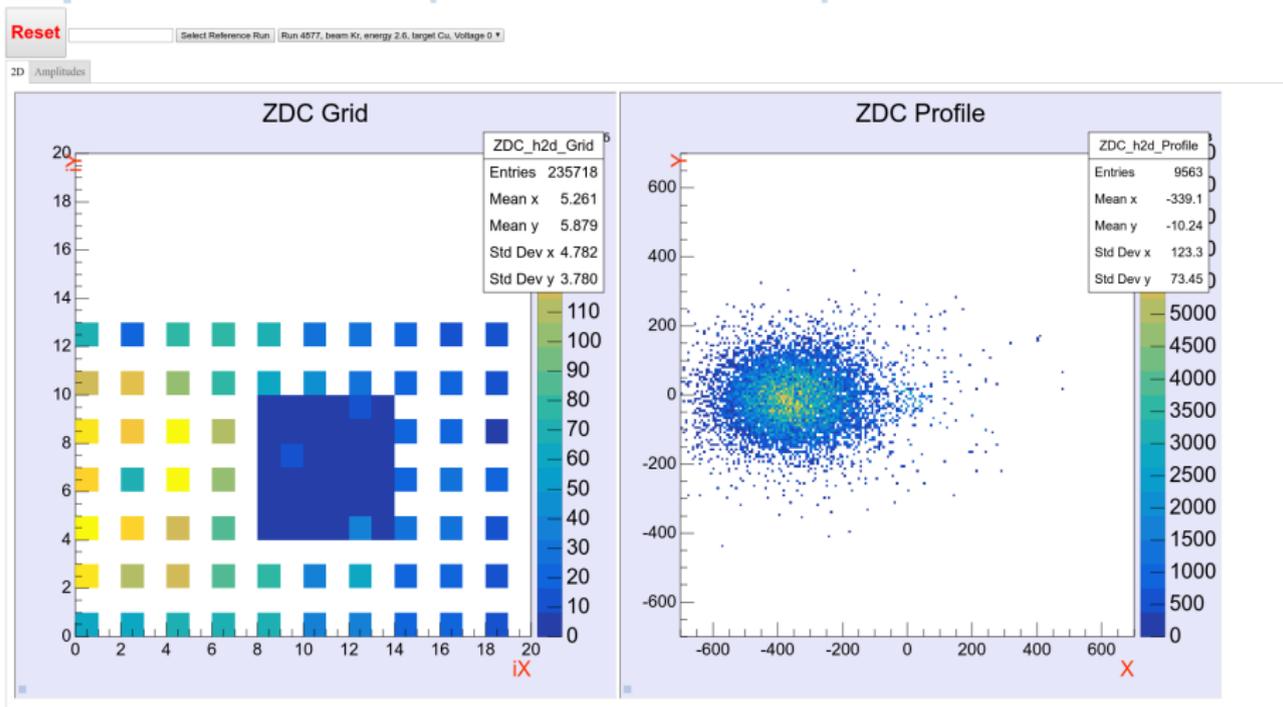
zeromq.org

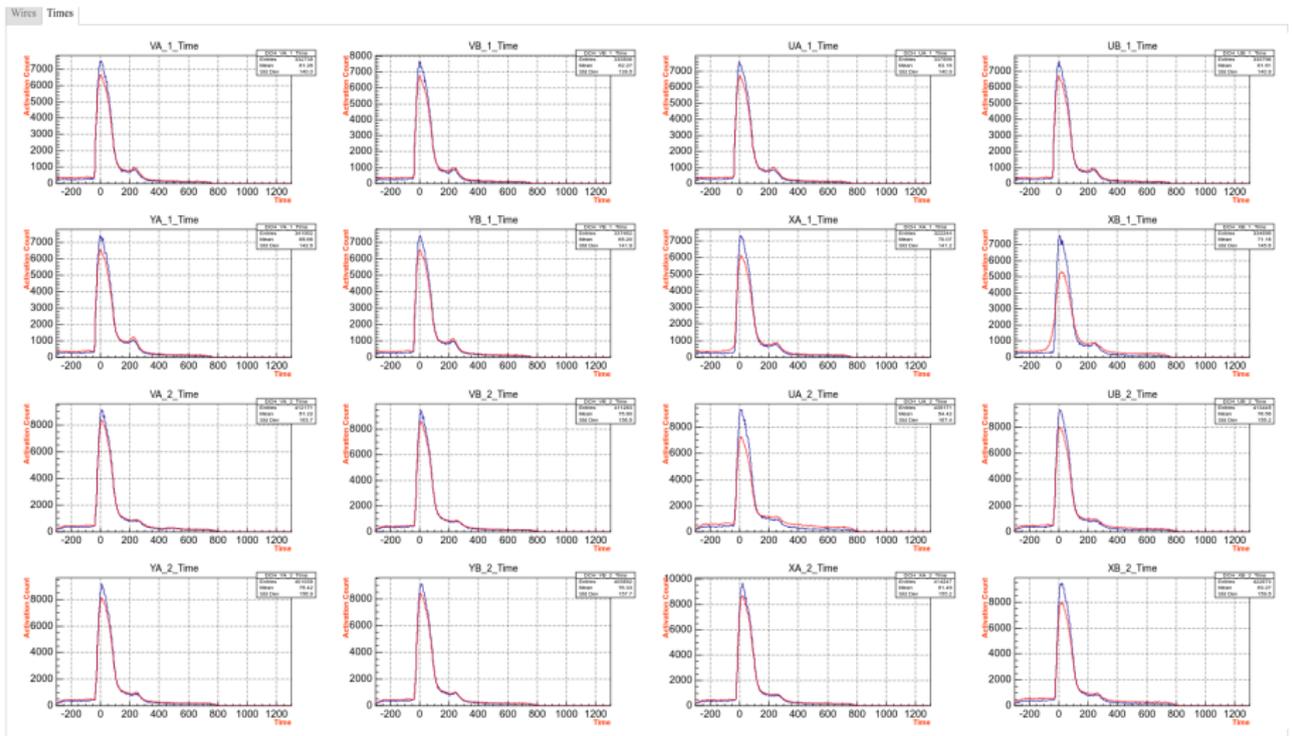


jsROOT website

<https://root.cern.ch/js/>







Дальнейшие планы

- Распараллеливание декодировки сырых данных
- Автоматизация QA
- Включение всей цепочки реконструкции треков и визуализации через ROOT EventMonitor.

Спасибо за внимание =)