

## NICA EXPERIMENTS

TECHNICAL WEBSITE

The screenshot displays the technical website for NICA experiments. At the top, a navigation bar includes links for MAIN, DOCUMENTS, COMPUTING, REFERENCES, BM@N, and SPD. A dropdown menu under DOCUMENTS is open, listing NICA, MPD, SPD, MPD DESIGN PICTURES (highlighted), PUBLICATIONS, and PRESENTATIONS. A secondary dropdown under MPD DESIGN PICTURES lists MPD INTEGRATION and MPD LAYOUT. The main content area features a 3D cutaway diagram of the detector assembly with labels: Recoil, Analyzing Magnet, mRPC – multi resistive plate chambers, GEM detector planes – Gas Electron Multipliers, CPC - Cathode Pad Chambers, DCH - drift chambers, mRPC – multi resistive plate chambers, and ZDC - zero degree calorimeter. The bottom of the page has four columns: SOFTWARE (listing BmnRoot, MpdRoot, FairSoft, ROOT), TAGS (listing BATCH, BMNROOT, GEOMETRY, GIT, GITLAB, INTERACTIVE, LIT FARM, LXMPD-UI, MPDROOT, PROOF), META (listing Log in, Entries RSS, Comments RSS, WordPress.org), and CONTACTS (listing Feedback, Forum).

## NICA EXPERIMENTS

[TECHNICAL WEBSITE](#)

[MAIN](#)

[DOCUMENTS](#)

[COMPUTING](#)

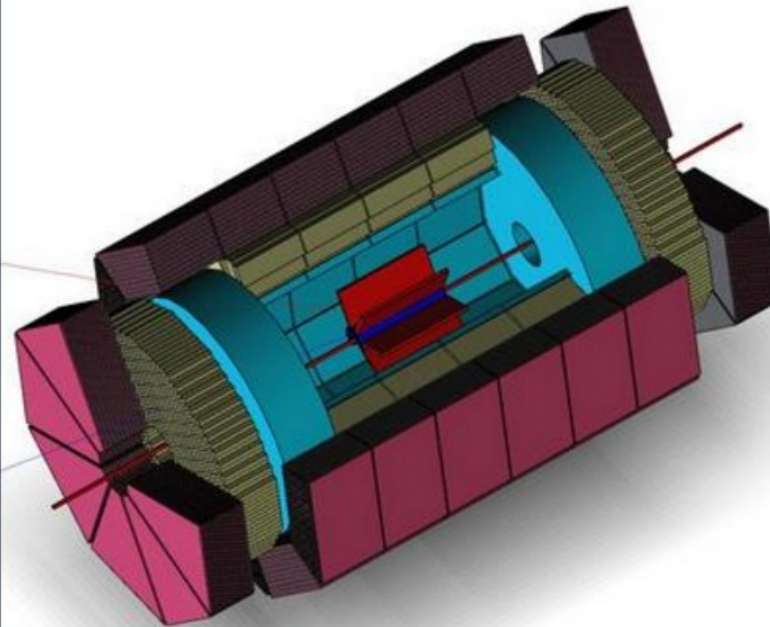
[REFERENCES](#)

[BM@N](#)

[SPD](#)

### Spin Physics Detector (SPD)

Measurements of asymmetries in the lepton pair (Drell-Yan) production in collisions of non-polarized, longitudinally and transversally polarized protons and deuterons beams are suggested to be [...]



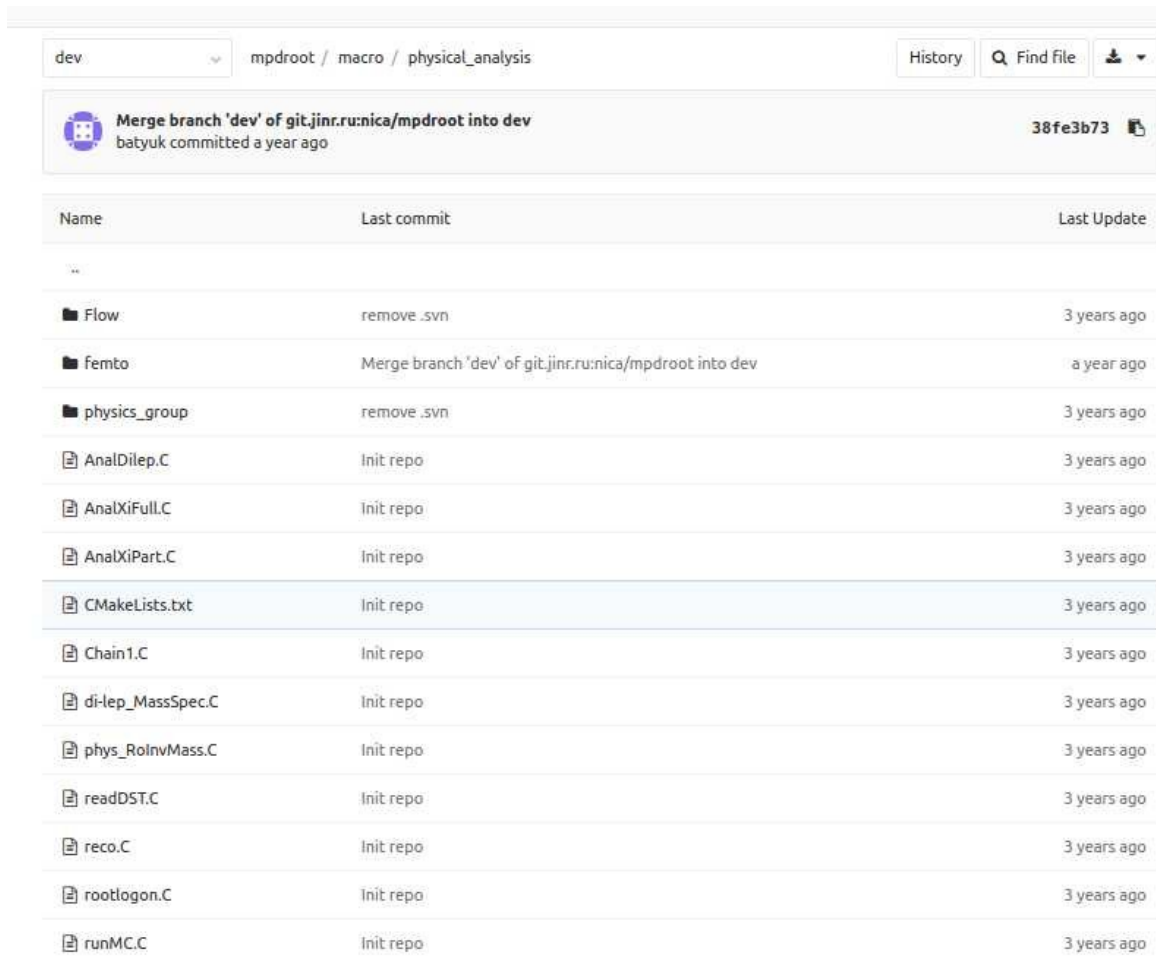
[SOFTWARE](#)

[TAGS](#)

[META](#)

[CONTACTS](#)

# Physics analysis directory



The screenshot shows a Git repository interface. At the top, the current branch is 'dev' and the path is 'mpdroot / macro / physical\_analysis'. There are buttons for 'History', 'Find file', and a download icon. Below this is a commit message: 'Merge branch 'dev' of git.jinr.ru:nica/mpdroot into dev' by 'batyuk' committed 'a year ago' with commit hash '38fe3b73'. A table below lists the files in the repository, including folders and individual files, with their last commit and update dates.

Name	Last commit	Last Update
..		
Flow	remove .svn	3 years ago
femto	Merge branch 'dev' of git.jinr.ru:nica/mpdroot into dev	a year ago
physics_group	remove .svn	3 years ago
AnalDilep.C	Init repo	3 years ago
AnalXiFull.C	Init repo	3 years ago
AnalXiPart.C	Init repo	3 years ago
CMakeLists.txt	Init repo	3 years ago
Chain1.C	Init repo	3 years ago
di-lep_MassSpec.C	Init repo	3 years ago
phys_RoInvMass.C	Init repo	3 years ago
readDST.C	Init repo	3 years ago
reco.C	Init repo	3 years ago
rootlogon.C	Init repo	3 years ago
runMC.C	Init repo	3 years ago

**Refreshing of physics results**

# Data taking & storage

## Protected: Simulation DB

Recent data on Thursday 12th of October 2017 | [Report mistake](#)

Data simulation DB for MPD						
Gen	Beam1	Beam2	Energy	Trigger	Path	Events
LAQGSM	Au	Au	7	mb	/nica/data4mpd2/LAQGSM/7GeV-mb/AuAuss7_7mb1/AuAuss7_7mb1_mer.r12.gz	
LAQGSM	Au	Au	7	mb	/nica/data4mpd2/LAQGSM/7GeV-mb/AuAuss7_7mb2/AuAuss7_7mb2_mer.r12.gz	
LAQGSM	Au	Au	7	mb	/nica/data4mpd2/LAQGSM/7GeV-mb/AuAuss7_7mb3/AuAuss7_7mb3_mer.r12.gz	
LAQGSM	Au	Au	7	mb	/nica/data4mpd2/LAQGSM/7GeV-mb/AuAuss7_7mb4/AuAuss7_7mb4_mer.r12.gz	
LAQGSM	Au	Au	7	mb	/nica/data4mpd2/LAQGSM/7GeV-mb/AuAuss7_7mb5/AuAuss7_7mb5_mer.r12.gz	
LAQGSM	Au	Au	7	mb	/nica/data4mpd2/LAQGSM/7GeV-mb/AuAuss7_7mb6/AuAuss7_7mb6_mer.r12.gz	
LAQGSM	Au	Au	7	mb	/nica/data4mpd2/LAQGSM/7GeV-mb/AuAuss7_7mb7/AuAuss7_7mb7_mer.r12.gz	
LAQGSM	Au	Au	7	mb	/nica/data4mpd2/LAQGSM/7GeV-mb/AuAuss7_7mb8/AuAuss7_7mb8_mer.r12.gz	
LAQGSM	Au	Au	7	mb	/nica/data4mpd2/LAQGSM/7GeV-mb/AuAuss7_7mb9/AuAuss7_7mb9_mer.r12.gz	
LAQGSM	Au	Au	7	mb	/nica/data4mpd2/LAQGSM/7GeV-mb/AuAuss7_7mb10/AuAuss7_7mb10_mer.r12.gz	
LAQGSM	p	C	4	mb	/nica/data4mpd2/LAQGSM/4GeV/pC-new/p4GeVCmb/p4GeVCmb1_mer.r12.gz	
LAQGSM	p	C	4	mb	/nica/data4mpd2/LAQGSM/4GeV/pC-new/p4GeVCmb/p4GeVCmb2_mer.r12.gz	
LAQGSM	p	C	4	mb	/nica/data4mpd2/LAQGSM/4GeV/pC-new/p4GeVCmb/p4GeVCmb3_mer.r12.gz	
LAQGSM	p	C	4	mb	/nica/data4mpd2/LAQGSM/4GeV/pC-new/p4GeVCmb/p4GeVCmb4_mer.r12.gz	
LAQGSM	p	C	4	mb	/nica/data4mpd2/LAQGSM/4GeV/pC-new/p4GeVCmb/p4GeVCmb5_mer.r12.gz	
LAQGSM	p	C	4	mb	/nica/data4mpd2/LAQGSM/4GeV/pC-new/p4GeVCmb/p4GeVCmb6_mer.r12.gz	
LAQGSM	p	C	4	mb	/nica/data4mpd2/LAQGSM/4GeV/pC-new/p4GeVCmb/p4GeVCmb7_mer.r12.gz	
LAQGSM	p	C	4	mb	/nica/data4mpd2/LAQGSM/4GeV/pC-new/p4GeVCmb/p4GeVCmb8_mer.r12.gz	
LAQGSM	p	C	4	mb	/nica/data4mpd2/LAQGSM/4GeV/pC-new/p4GeVCmb/p4GeVCmb9_mer.r12.gz	
LAQGSM	p	C	4	mb	/nica/data4mpd2/LAQGSM/4GeV/pC-new/p4GeVCmb/p4GeVCmb10_mer.r12.gz	

Стр. 1 из 1 727 | Просмотр 1 - 20 из 34 525

MC data --- NC cluster

MOCK data for  
Physics analyses

LIT CICC

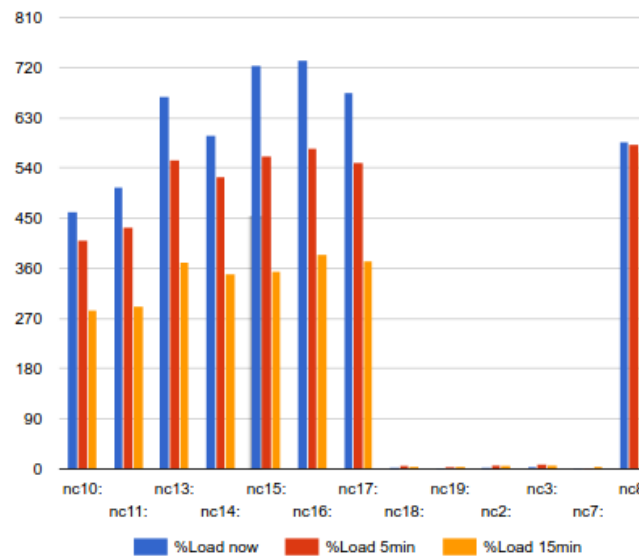
# Software usage

## Protected: Cluster monitoring

### ONLINE cluster nodes

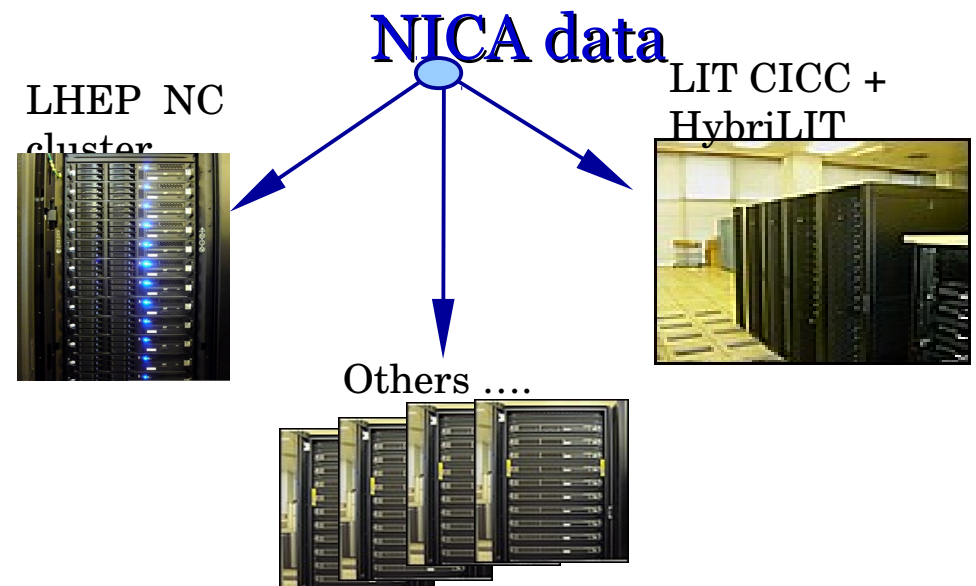
Node	%Load now	%Load 5min	%Load 15min	Users	Uptime(days)	Time
nc10:	462	410	285	2	28	13:39:03
nc11:	506	434	292	0	23	13:39:03
nc13:	668	555	371	0	13	13:39:58
nc14:	598	525	351	0	23	13:39:03
nc15:	725	561	354	1	26	13:39:03
nc16:	734	575	386	1	29	13:39:03
nc17:	675	550	374	0	19	13:39:03
nc18:	3	7	5	1	5	13:38:54
nc19:	1	4	5	1	21	13:39:04
nc2:	3	8	6	5	22	13:39:04
nc3:	4	10	8	0	6	13:38:32
nc7:	0	1	5	1	30	13:36:05
nc8:	587	582	568	16	34	13:39:03

The load average calculation



# Software development

- ★ Root 5 to Root 6
- ★ FairRoot to ALFA
- ★ Shared data&software for LHEP, LIT ...
- ★



# Physics working group



## The STAR experiment

at the Relativistic Heavy Ion Collider, Brookhaven National Laboratory

### Mailing lists

[STAR lists](#)

[Hypernews](#)

[BNL lists](#)

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[Physics](#)

[Experiment](#)

[Collaboration](#)

[Publications](#)

[News - Events](#)

[Mailing lists](#)

[Computing](#)

[The future](#)

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### ★ star mailing lists

Note: Ⓢ = STAR private list, Ⓣ = public list

#### General

- Ⓢ [STAR mail](#): Collaboration announcements
- Ⓢ [STAR BNL](#): STAR BNL group
- Ⓢ [STAR papers](#): STAR papers
- Ⓢ [STAR talks](#): STAR talks
- Ⓣ [STAR juniors](#): STAR juniors

#### Physics Working Groups

- Ⓢ [Bulk correlations](#)
- Ⓢ [Heavy flavor](#)
- Ⓢ [Jet-like correlations](#)
- Ⓢ [Light flavor and Peripheral Collisions](#)
- Ⓢ [Spin physics](#)
- Ⓢ [PWG convenors](#)

#### Special topics

- Ⓢ [Cross-PWG discussion](#)
- Ⓢ [Jet finding](#) | [Flow](#)
- Ⓢ [HBT](#) | [Event structure](#)
- Ⓢ [Photon reconstruction and analysis](#)
- Ⓢ [Parity violation discussions](#)
- Ⓢ [Beam Energy Focus Group](#)
- Ⓢ [CME Focus Group](#)

#### Computing

- Ⓢ [Starsoft](#): Broad software issues
- Ⓢ [Starsimu](#): Simulation discussion
- Ⓢ [Calibrations](#) | [Vertex](#) | [MuDst](#)
- Ⓣ [Grid](#) | Ⓢ [Scheduler](#)

#### Detector Subsystems

- Ⓢ [BEMC-EEMC](#): Electromagnetic Calorimeters
- Ⓢ [EPD](#): Event Plane Detector
- Ⓢ [PMD](#): Photon Multiplicity Detector
- Ⓢ [SSD](#): Silicon Strip Detector
- Ⓢ [TOF MTD](#): Time Of Flight
- Ⓢ [TPC](#): Time Projection Chamber
- Ⓢ [STAR trig](#): STAR trigger group
- Ⓢ [FGT](#) | [HFT](#) | [FMS](#): STAR tracking upgrade

#### Experiment

- Ⓢ [Operations](#)
- Ⓢ [Shift Leaders](#)
- Ⓢ [Period Coordinators](#)
- Ⓢ [Quality assurance](#)
- Ⓢ [Trigger Board](#)

#### External mailing lists

- Ⓣ [RootTalk](#): ROOT users forum
- Ⓣ [RCF mail](#): RHIC Computing Facility

➤ Bulk ? (Spectra)

➤ Strangeness

➤ Flows (MEPHI)

➤ Femtoscopy (Malinina)

➤ Fluctuations (Rustamov)

➤ Electromagnetic probes

➤ Polarization ?

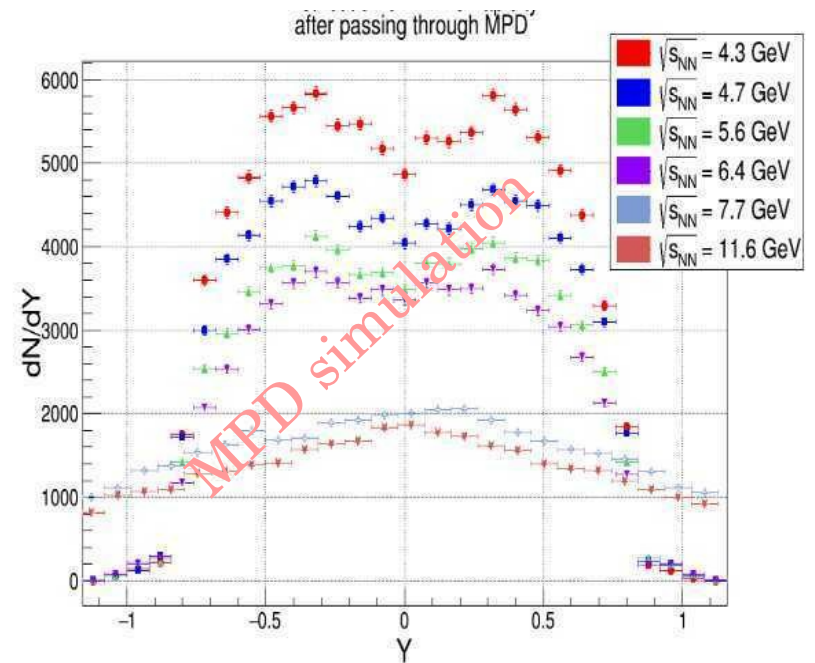
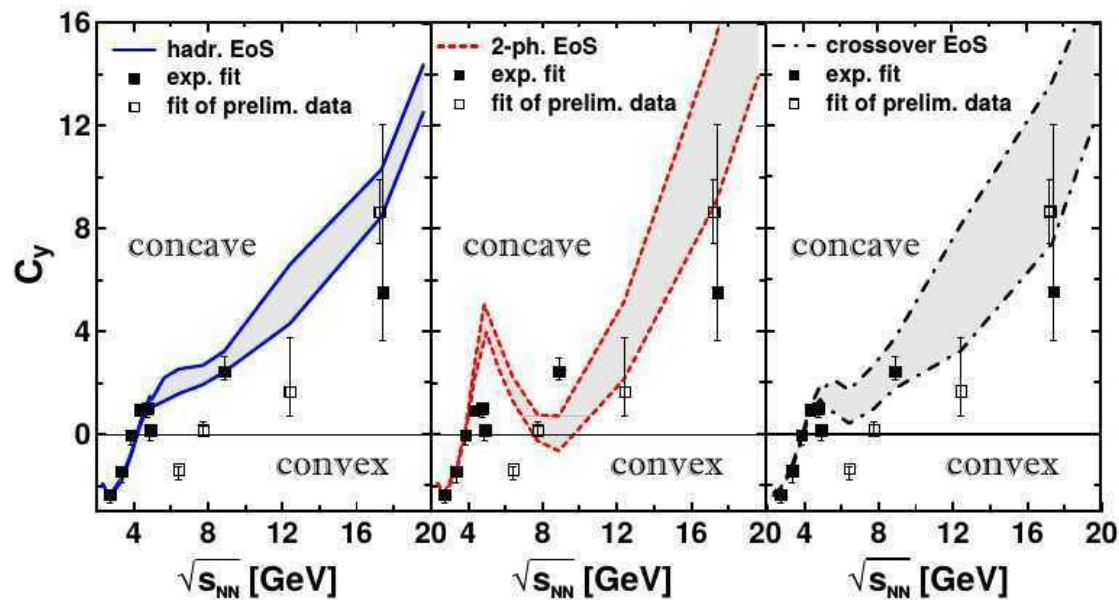
Tracking & PID



# Baryon stopping power

## 3FD model

$$C_y = \left( y_{\text{beam}}^3 \frac{d^3N}{dy^3} \right)_{y=0} / \left( y_{\text{beam}} \frac{dN}{dy} \right)_{y=0} = (y_{\text{beam}}/w_s)^2 (\sinh^2 y_s - w_s \cosh y_s)$$



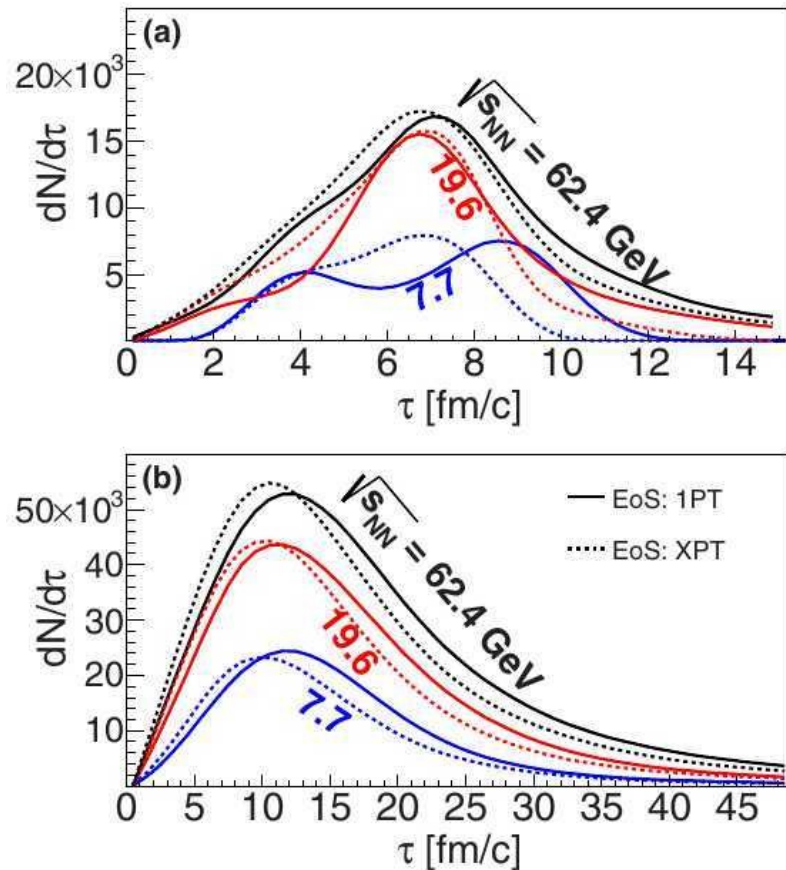
Yu.B. Ivanov, PL B721 (2013) 123  
arXiv:1211.2579



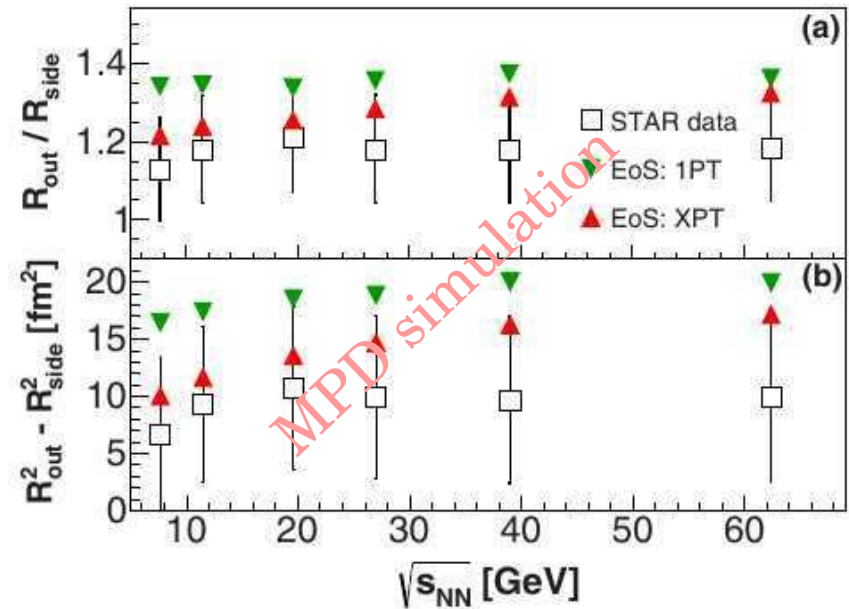
# Femtoscscopy for NICA

PHYSICAL REVIEW C 96, 024911 (2017)

vHLLE + UrQMD model



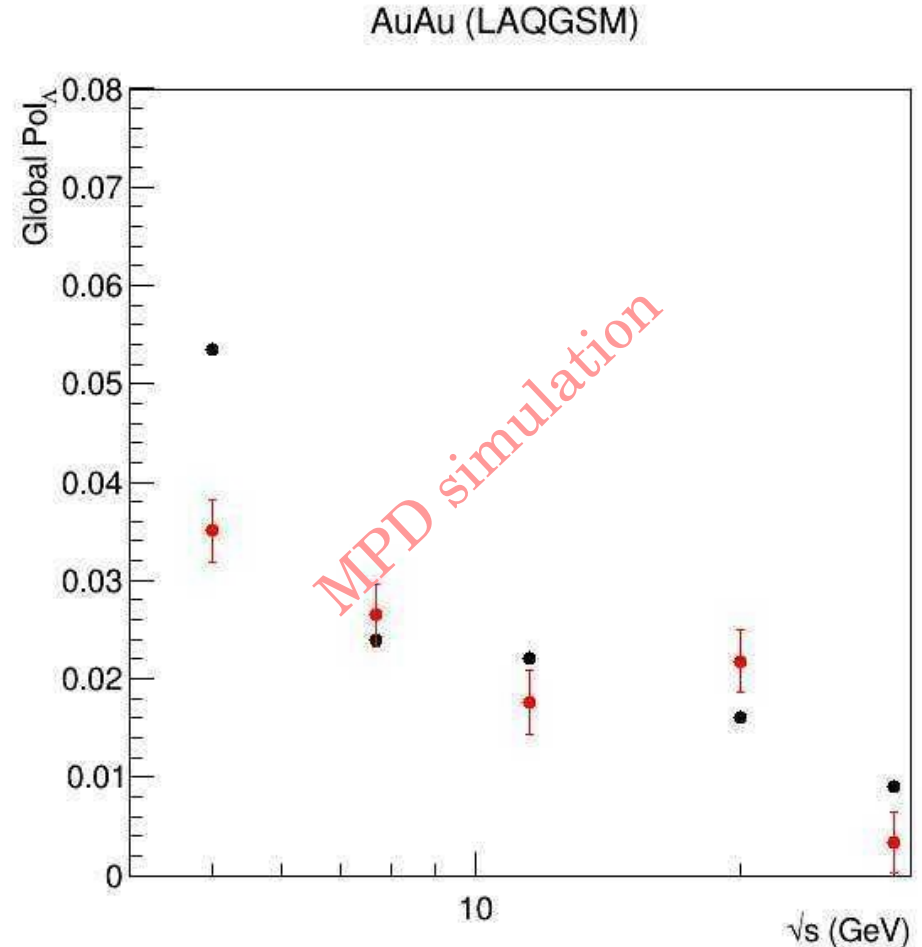
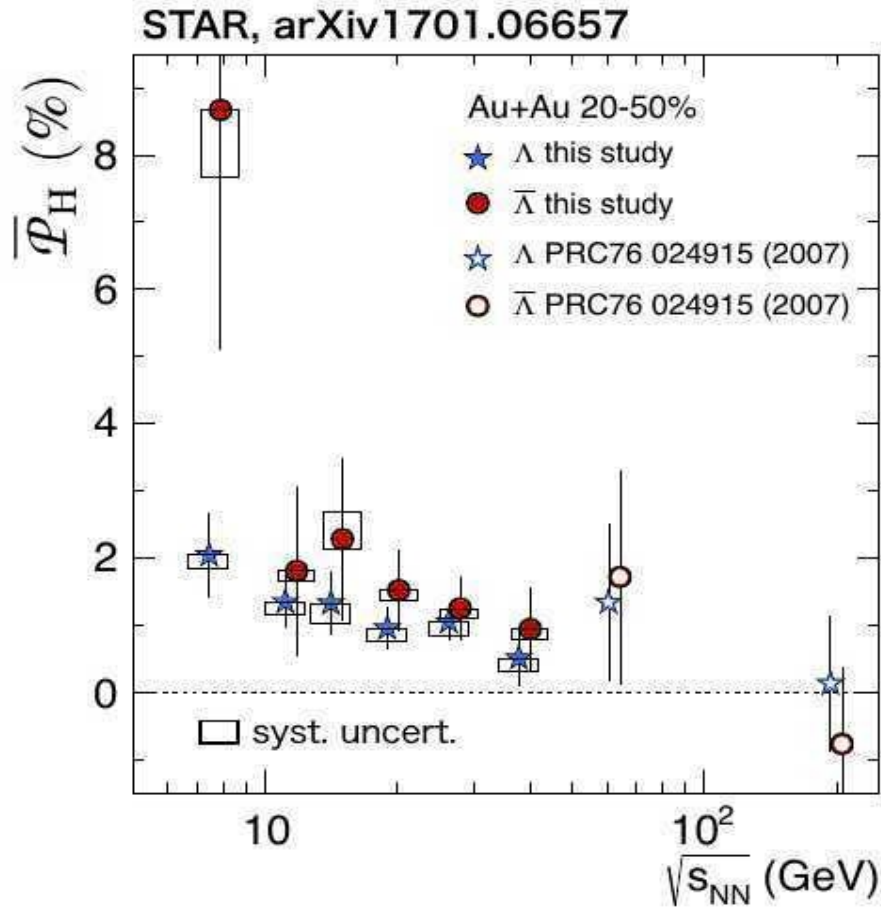
Pion emission times at the particlization surface (a) and the last interactions (b) in the center-of-mass system of colliding gold nuclei at different values of  $\sqrt{s_{NN}}$ .



Ratio of the out and side radii (a) and difference of the radii squared (b) as a function of  $\sqrt{s_{NN}}$  derived from the STAR data ( $0.15 < kT < 0.25$  GeV/c, 0–5% centrality) and compared with the model calculations using the two EoSs.

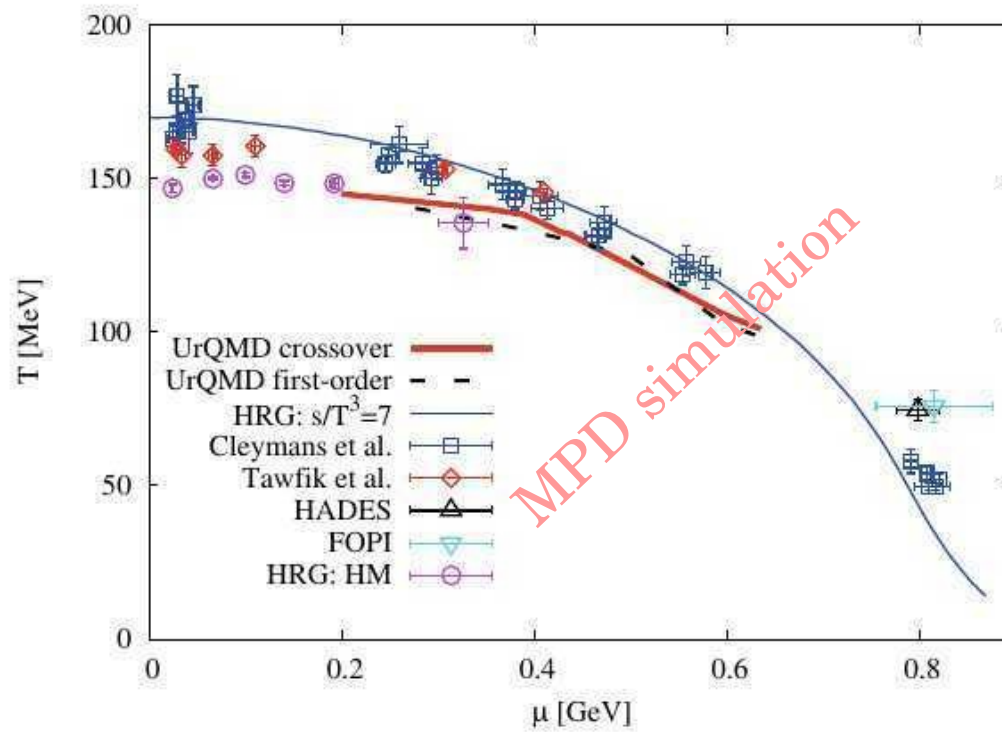
# Global $\Lambda$ polarization for MPD

A.Kechechyan



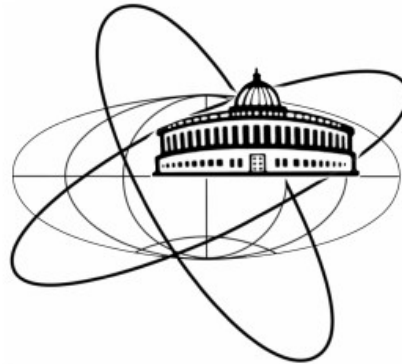
# QCD Phase diagram

Eur. Phys. J. A (2016) 52: 324



## Vorticity and Lambda-hyperon polarization in PHSD transport model

E.E. Kolomeitsev, V.D. Toneev, V. Voronyuk



QCD at nonzero baryon density  
October 4, 2017

