



MexNICA Plans for 2021

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MexNICA Plans for 2021 within the PWG1



MexNICA group is interested to contribute to PWG1 on topics directly or related to:

- **Multiplicity distribution**
- **Pseudorapidity distribution**
- **Transverse momentum**

MexNICA group has other interest (hyperon polarization, magnetic fields, etc.) and is working on that, but these will be reported elsewhere.

Information required to start our studies



- Who knows the status of the mentioned analysis (groups working on it)?
- We would like to be in touch with groups working on that subjects to join efforts (multiplicity, pseudorapidity, etc.)
- Who coordinate the MPD Software(MC simulation and analysis). We need to get the updated software.

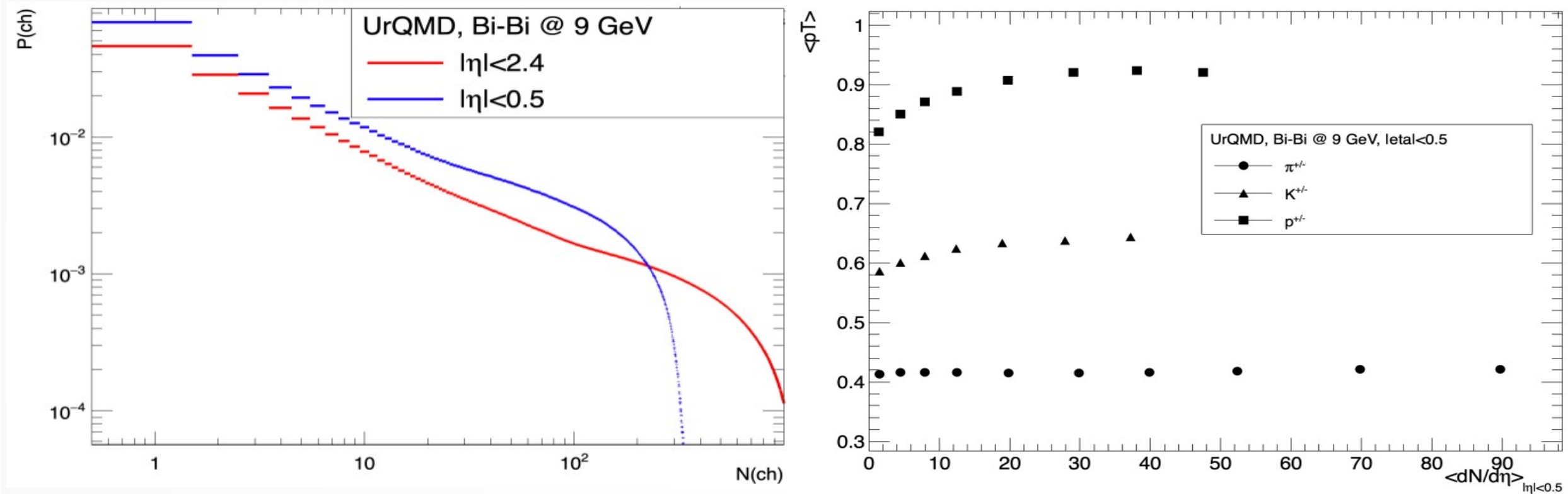
<https://git.jinr.ru/nica/mpdroot/-/tree/dev/tpc>

Name	Last commit	Last update
..		
CMakeLists.txt	Revised usage of hit flags. Some cleaning. TPythia8 gen...	7 months ago
MpdParticleIdentification.cxx	commit for ParticleIdentification from Gyulnara	3 years ago
MpdParticleIdentification.h	commit for ParticleIdentification from Gyulnara	3 years ago
MpdTPCpid.cxx	commit for ParticleIdentification from Gyulnara	3 years ago
MpdTPCpid.h	commit for ParticleIdentification from Gyulnara	3 years ago
MpdTpc2dCluster.cxx	Updates for EMC; little fixes for some files.	1 year ago
MpdTpc2dCluster.h	dE/dx corrections for clusters.	4 years ago
MpdTpcClusterFinderAZ.cxx	dE/dx corrections for clusters.	4 years ago
MpdTpcClusterFinderAZ.h	dE/dx corrections for clusters.	4 years ago
MpdTpcClusterFinderMlem.cxx	Revised usage of hit flags. Some cleaning. TPythia8 gen...	7 months ago
MpdTpcClusterFinderMlem.h	Faster digitizer and cluster finder.	3 years ago
MpdTpcClusterFinderQAHistograms.cxx	Init repo	6 years ago

TPC updated
(1-6) years ago!

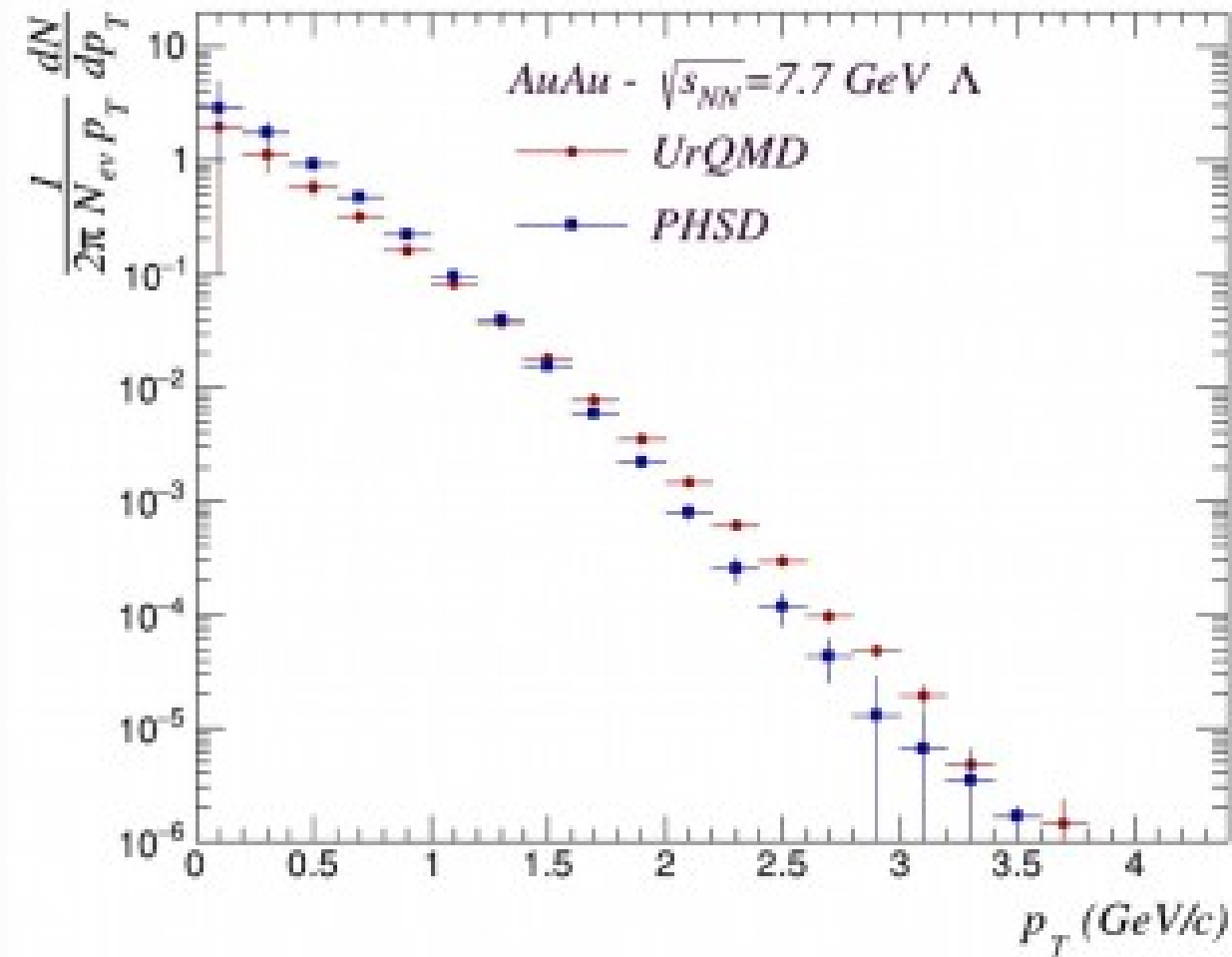
backup

Multiplicity and $\langle p_T \rangle$ distributions from UrQMD, Bi+Bi at 9 GeV



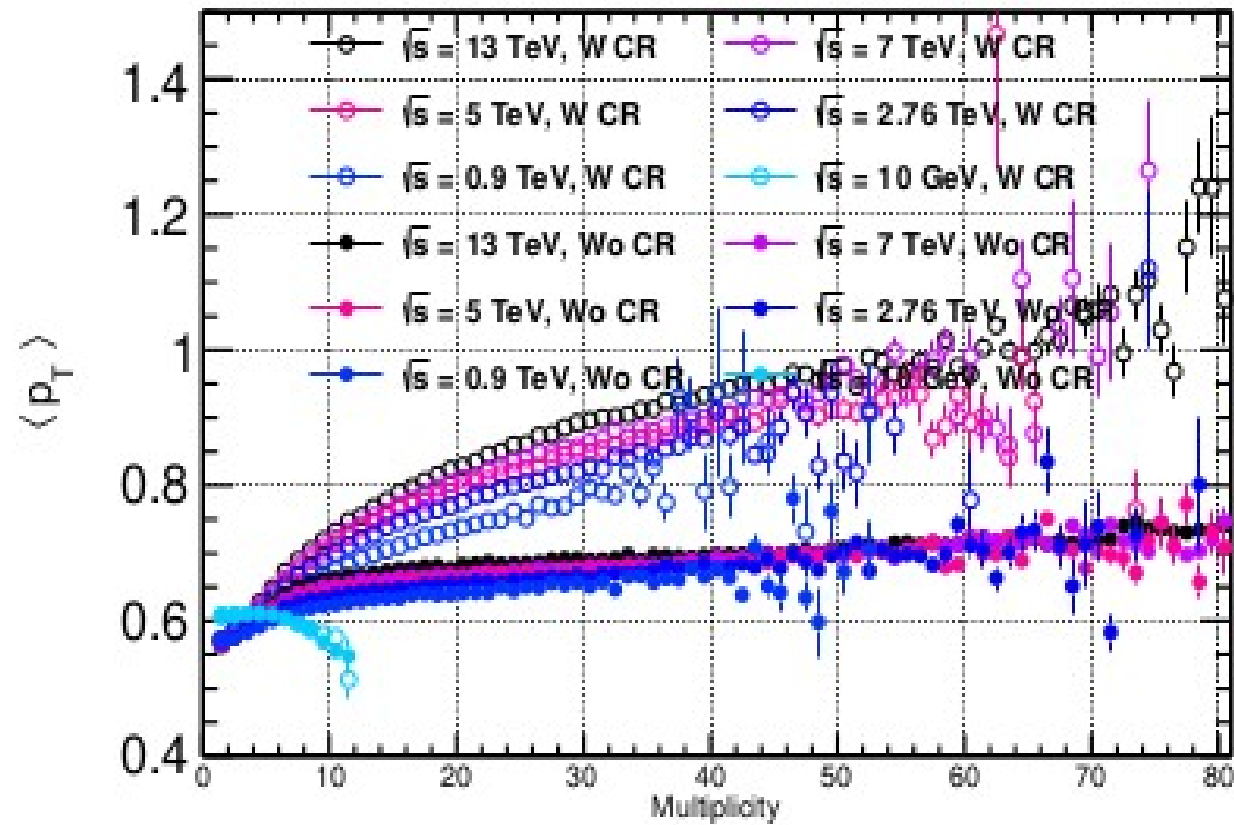
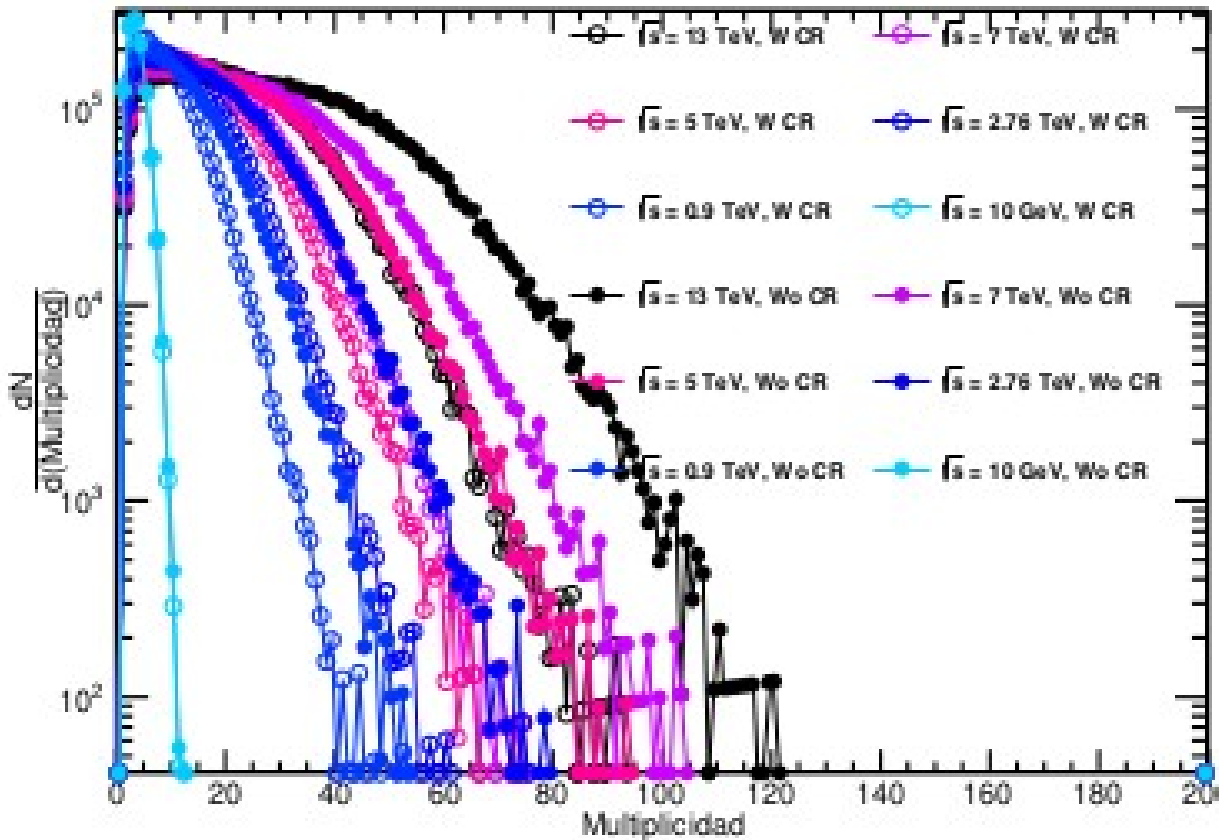
Monte Carlo generation with nuclear effects considered. A sample of 992,500 events.

pt distributions from UrQMD 7.7 GeV



Different event generator produce
different pt distributions

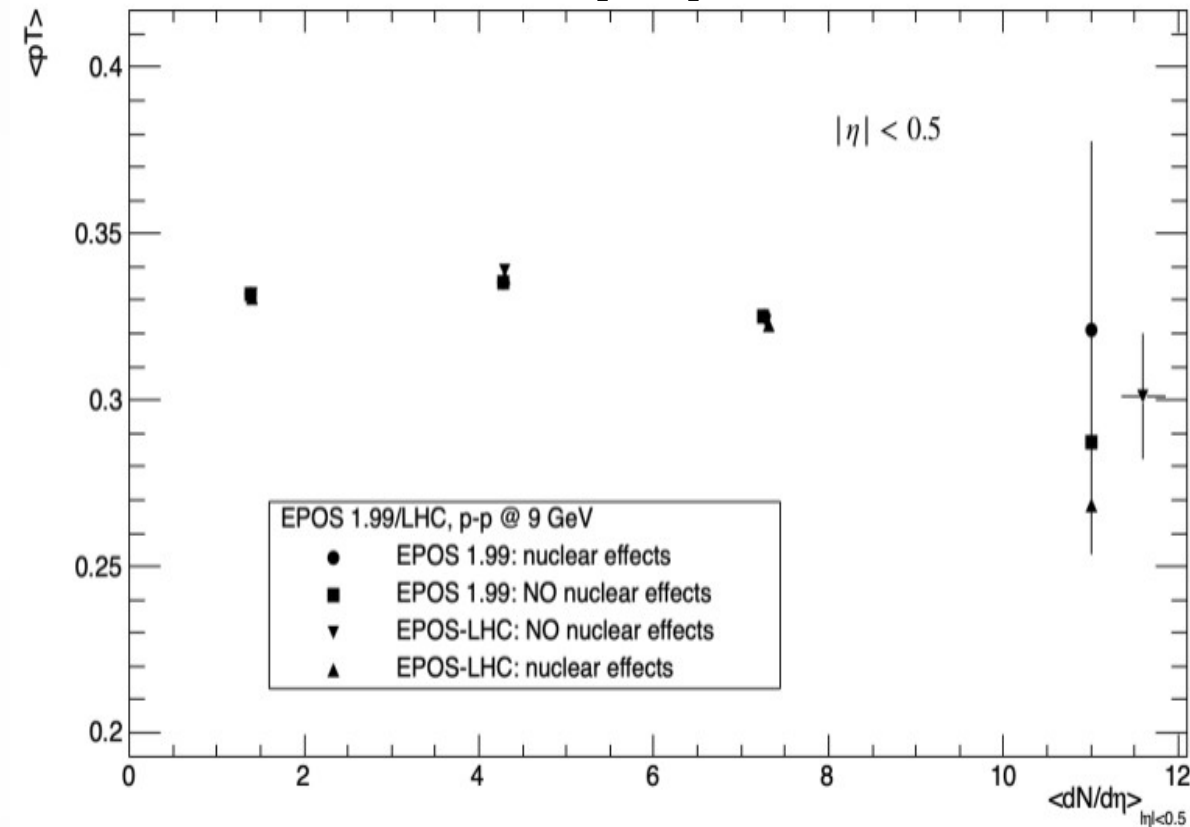
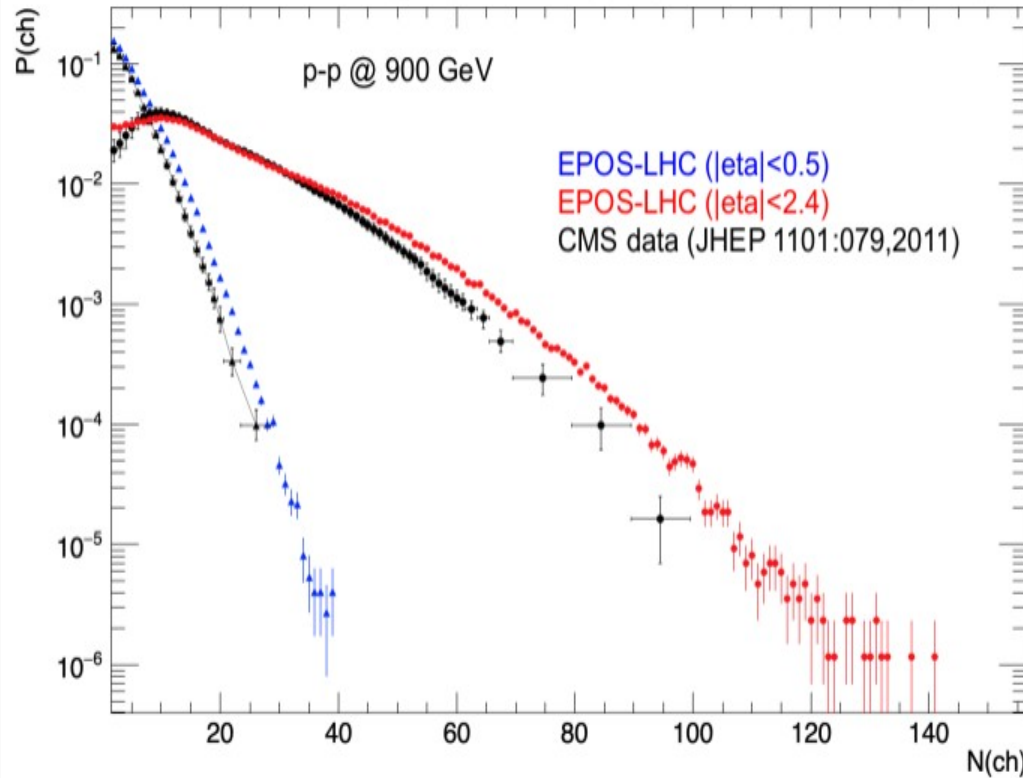
Multiplicity and $\langle p_T \rangle$ distributions from Pythia, p+p at different energies



Multiplicity and $\langle p_T \rangle$ distributions from p+p with EPOS-LHC

p+p at 9 GeV.

Good description of EPOS between 10 and 40 charged particles for large eta (red)
EPOS overestimates the charged particle multiplicity for more central regions (blue points)



Comments on the results:

Good description of EPOS between 10 and 40 charged particles for large eta (red).

EPOS overestimates the charged particle multiplicity for more central regions (blue points)