



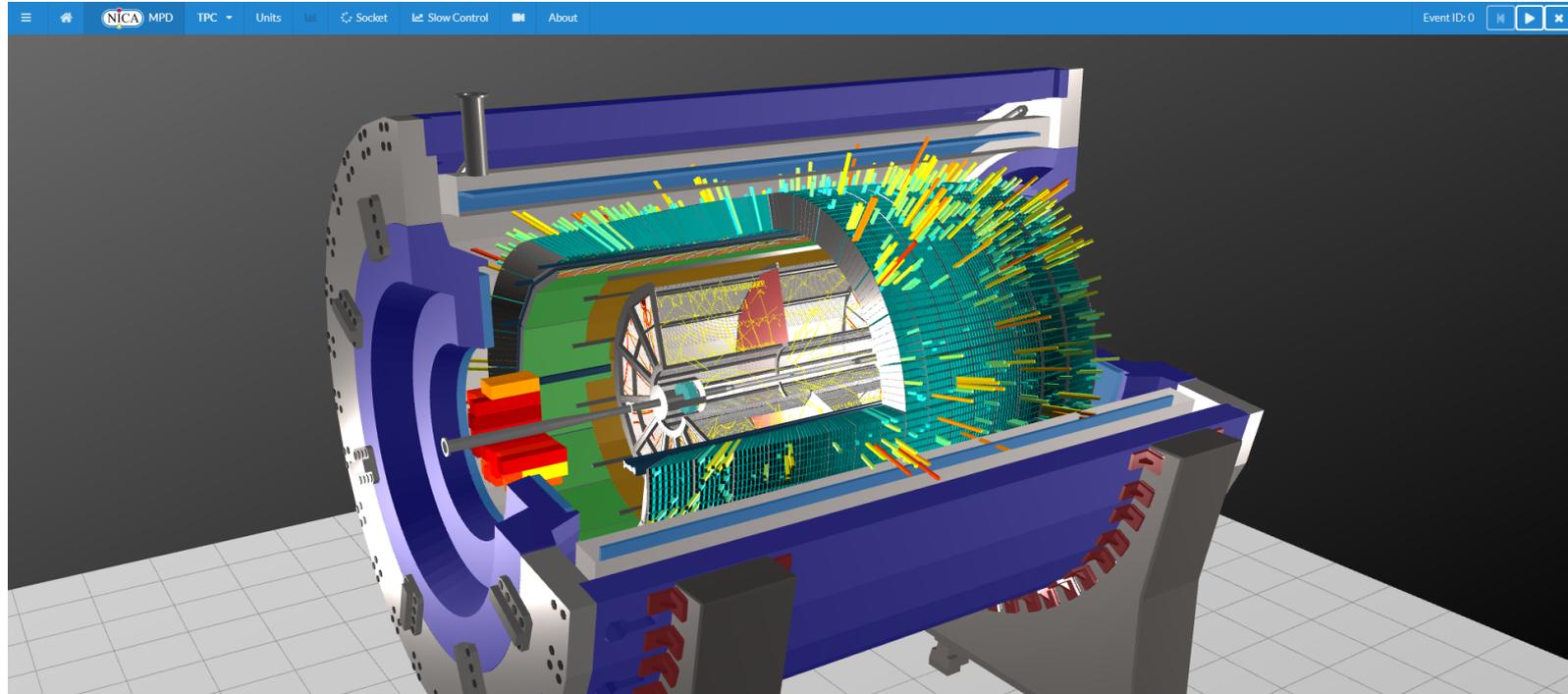
Visualization of MC & DST tracks with MPD Event Display

Alexander Krylov (LHEP)

Email: avkrylov@jinr.ru

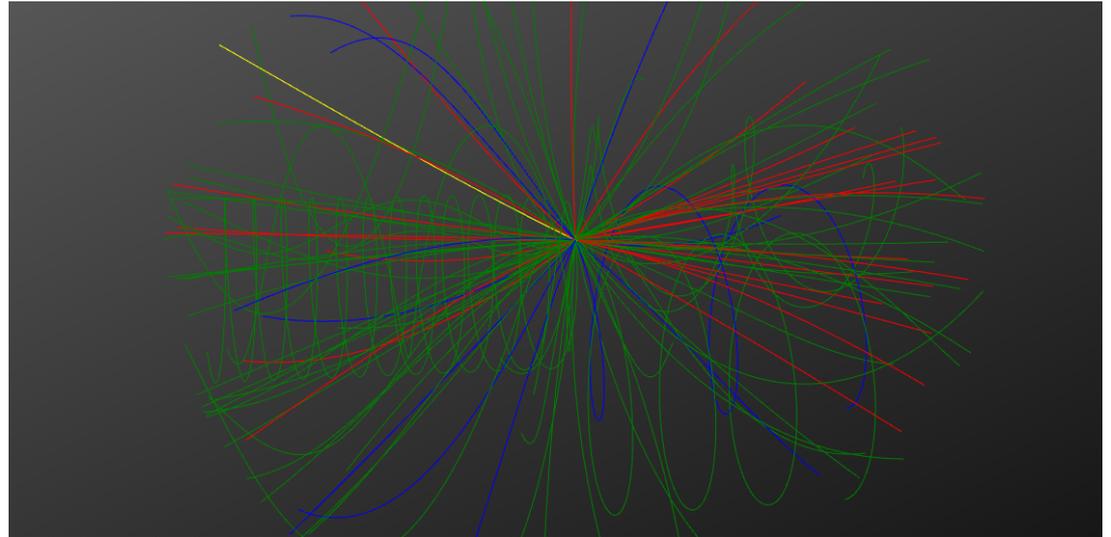
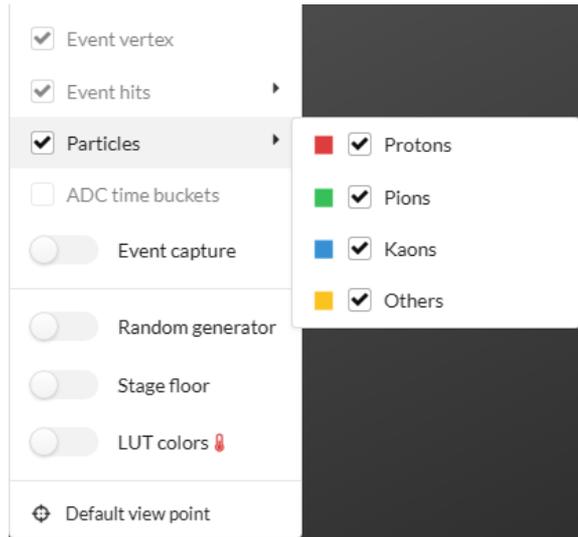
Oleg Rogachevsky (LHEP)

MPD Event Display



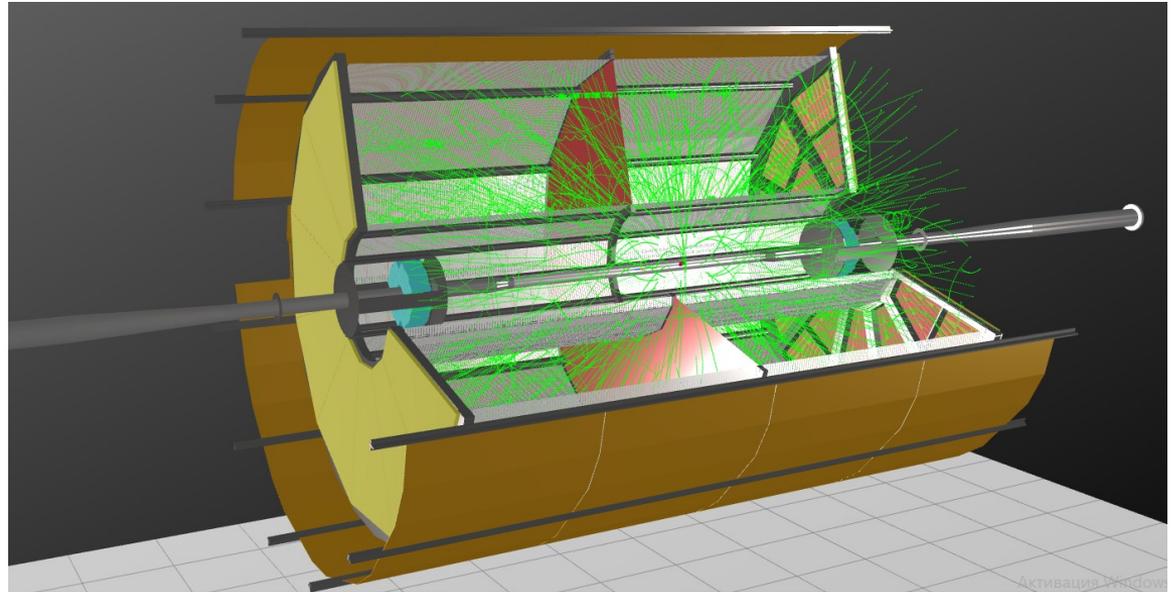
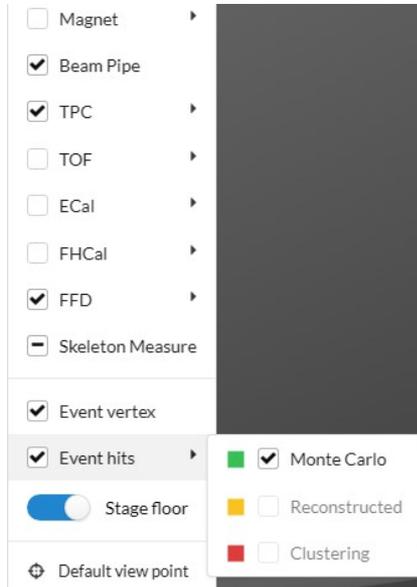
Event Display capabilities

- MC event (vHLLU_UrQMD_7.7Gev) — MC tracks visualization:



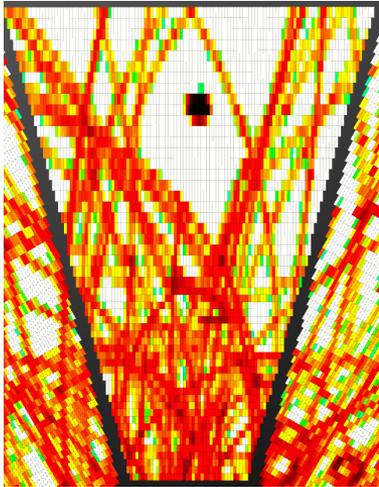
Event Display capabilities

- MC event (LAQGSM_7.7Gev) — MC points (GEANT) visualization:

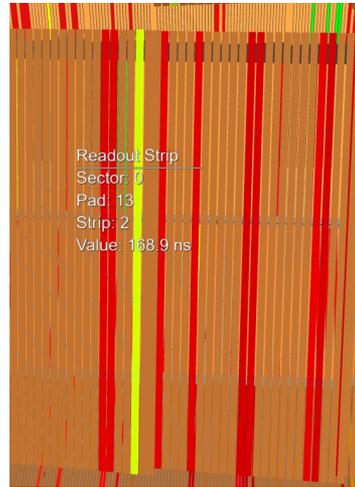


Event Display capabilities

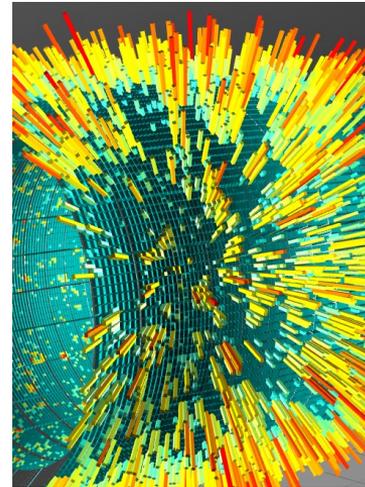
- Reconstucted events (LAQGSM_7.7Gev) — detector hits visualization:



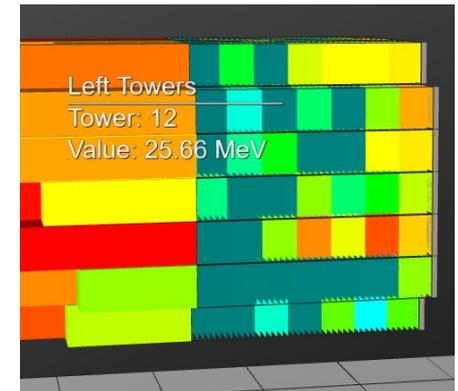
TPC Pads



TOF Strips



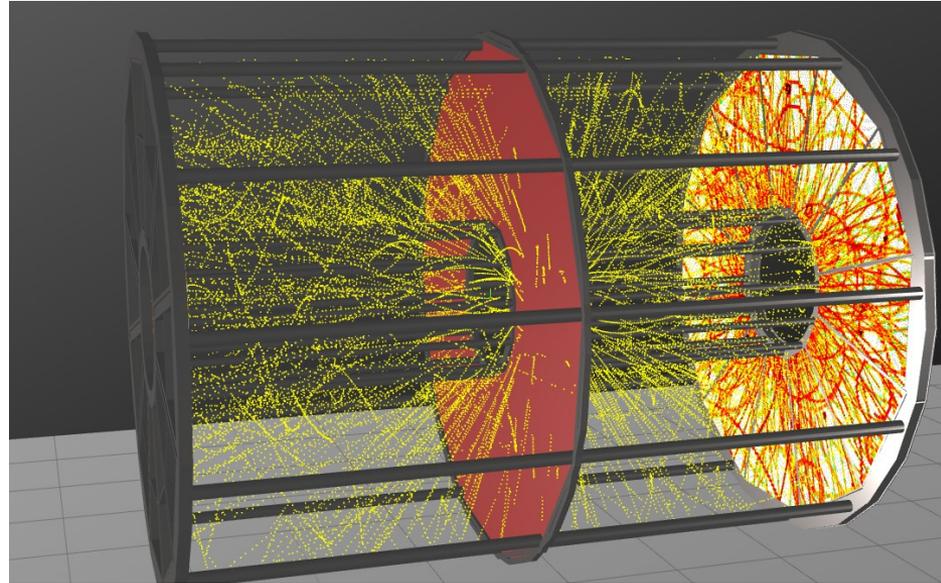
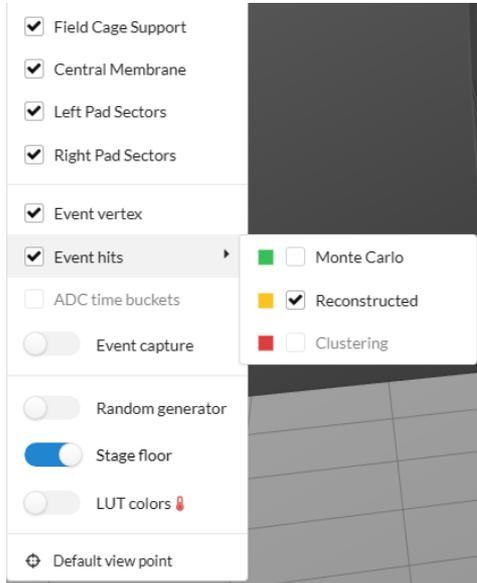
ECal towers



FHCAL towers

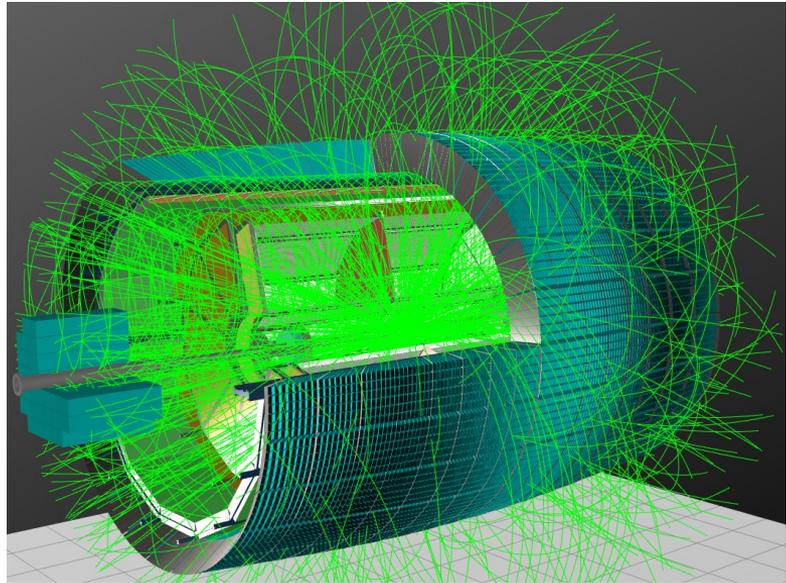
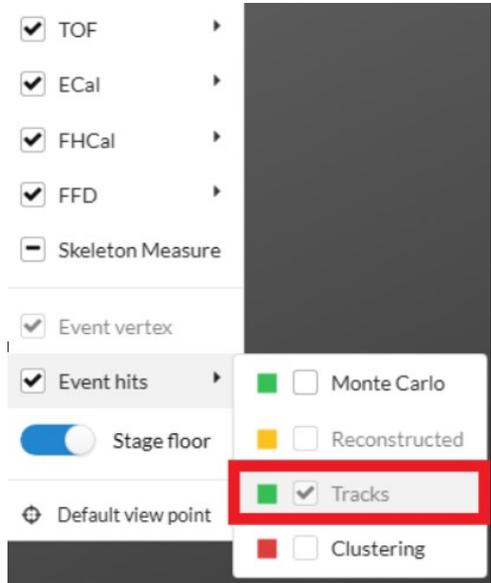
Event Display capabilities

- Reconstructed file (LAQGSM_7.7Gev) — reconstructed TPC hits visualization:

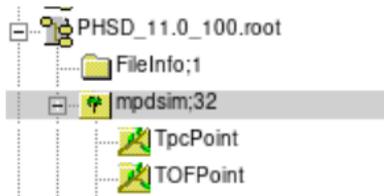
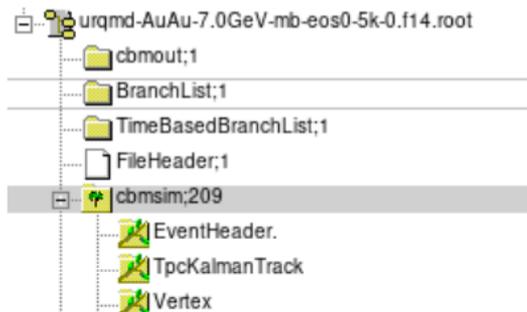
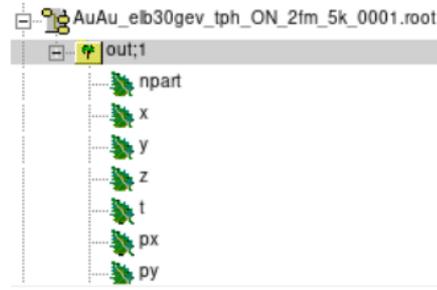
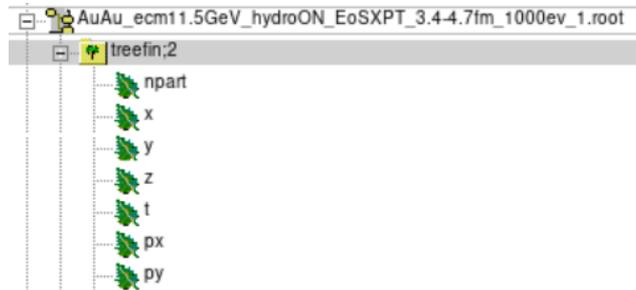


Event Display capabilities

- DST event (mpddst.root) — reconstructed tracks visualization:



Root files «TTree» names



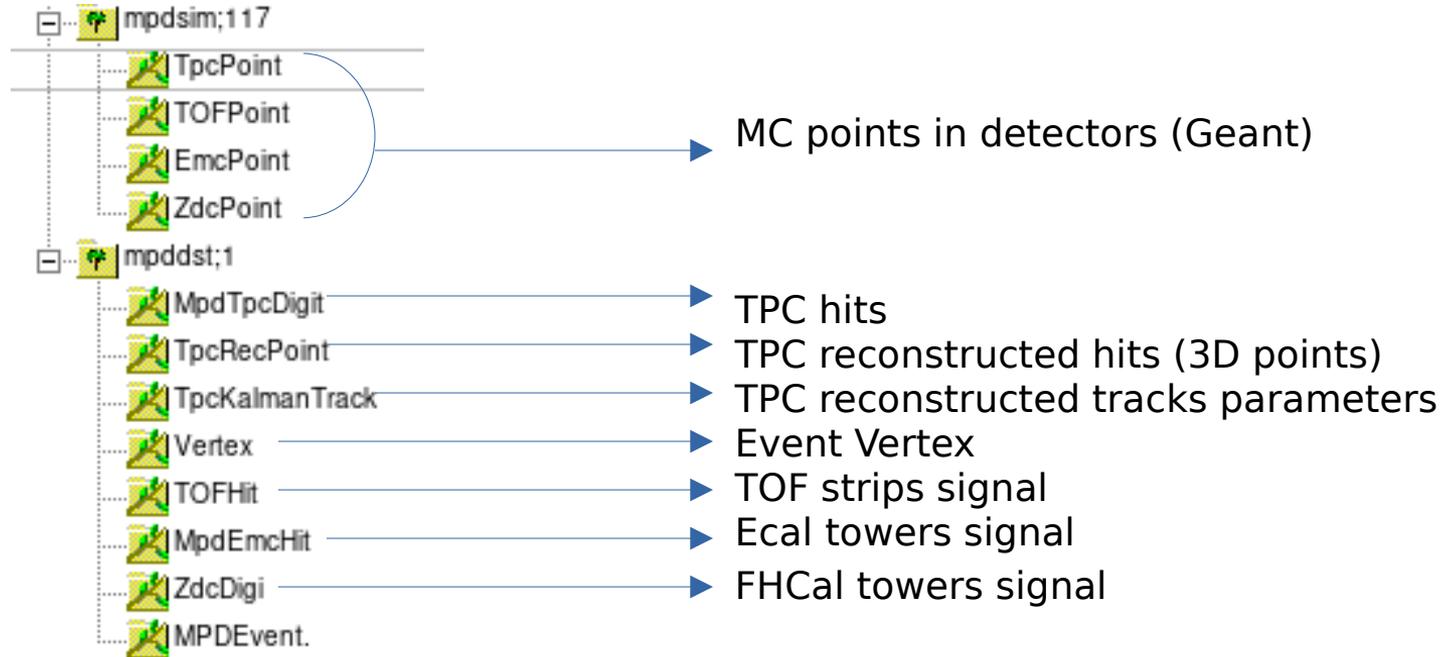
Root format files:

- treefin
- treeini
- out
- cbmsim (obsolete)
- mpdsim

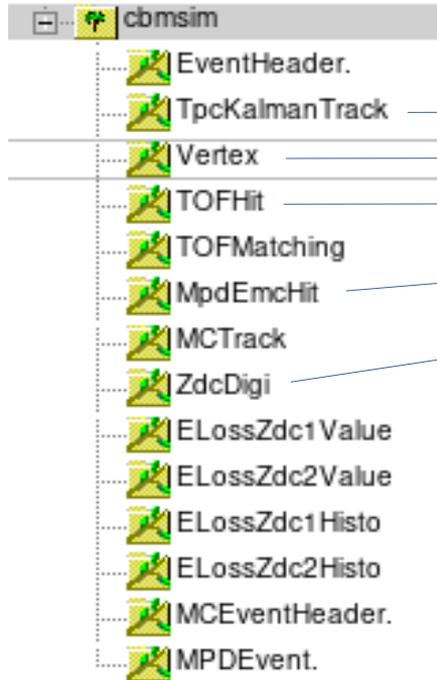
Other format files:

- f14
- r12

Full information root file



Database root files information



TPC reconstructed tracks parameters

Event Vertex

TOF strips signal

ECal towers signal

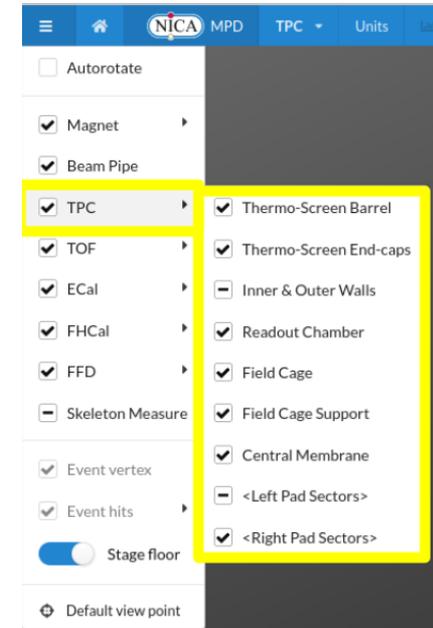
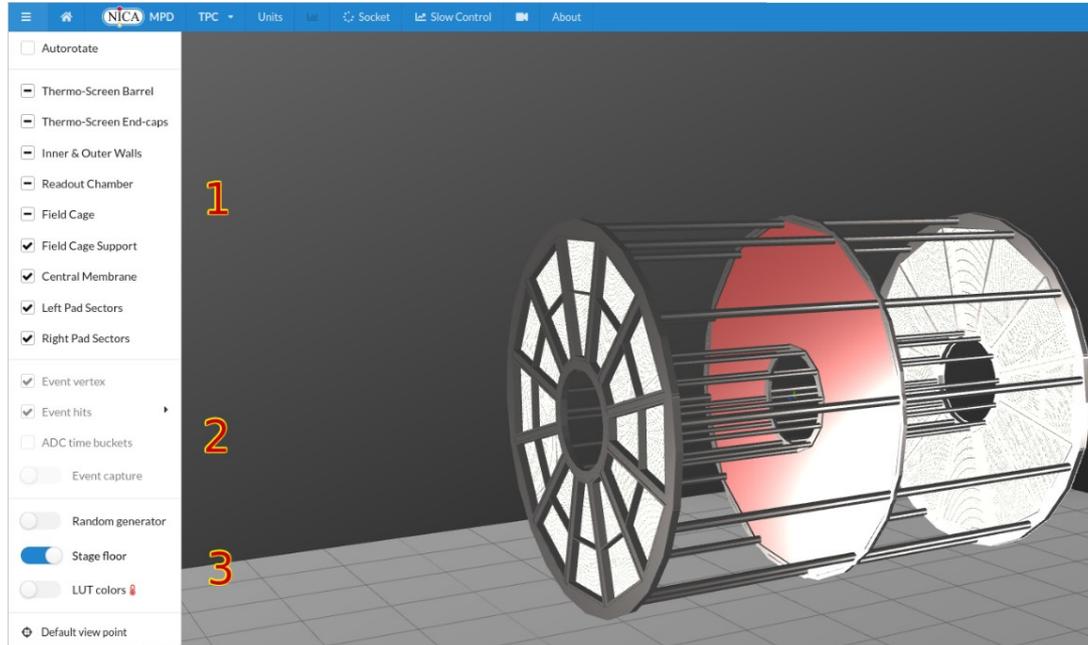
FHCAL towers signal

MC points from Geant simulation

TPC pads info (hits)

TPC reconstructed hits (3D points)

Event Display menu



Link to MPD database

NICA MPD TPC Units Socket Slow Control About

Server: Socket:

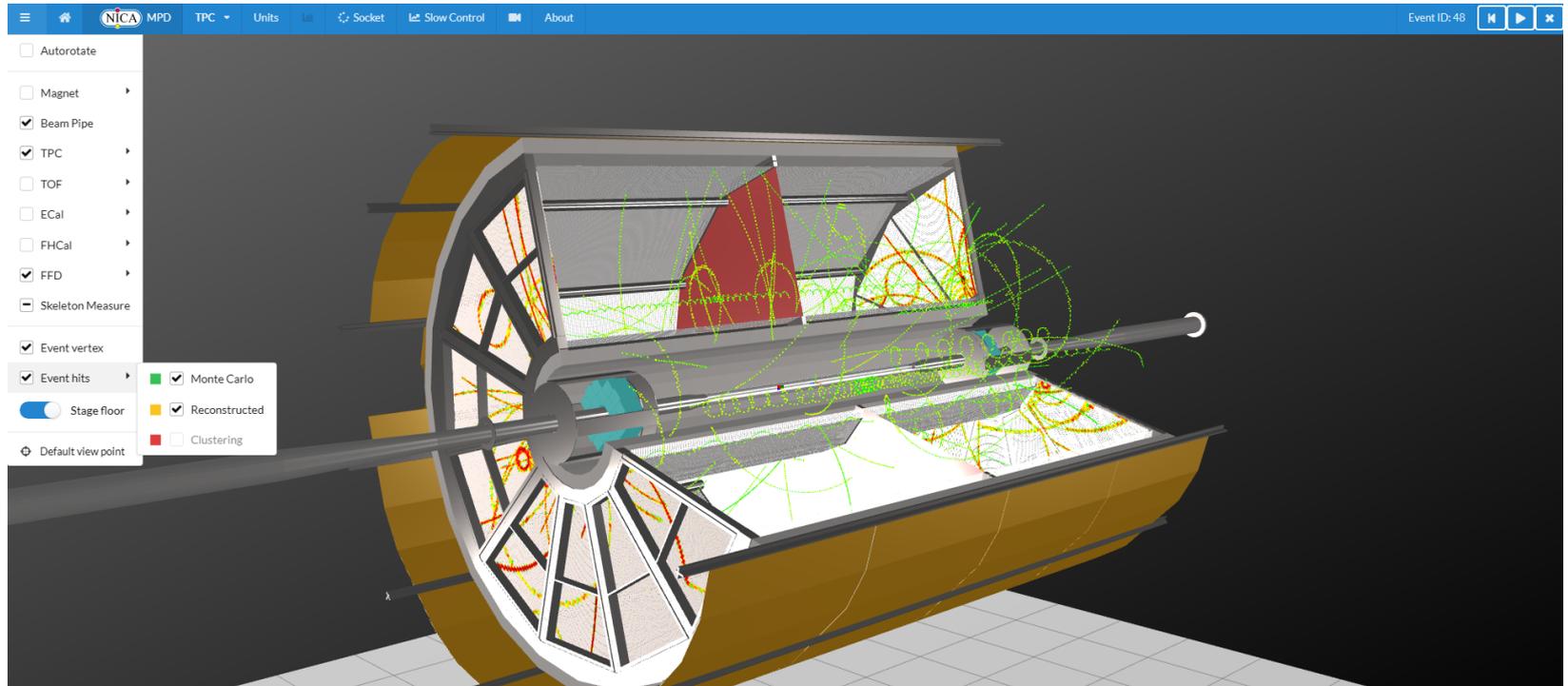
File: Event Content: Interval: 1 step Compression: addon gzip Level: 4

Advanced

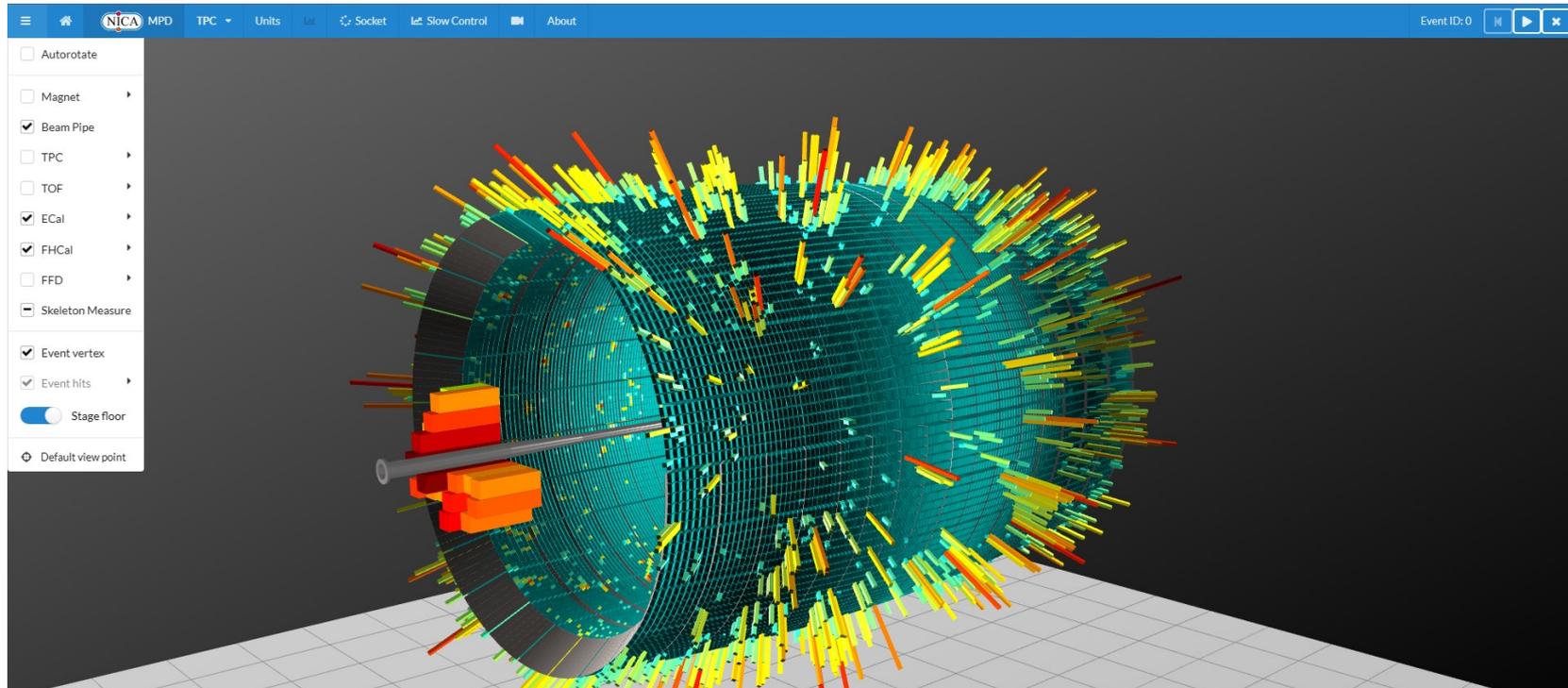
Reset DataBase

| Energy | Centrality | Generator | Generator modification | Reconstruction modification |
|--|--|--|------------------------------------|-----------------------------|
| <input type="text" value="Select Energy"/> | <input type="text" value="Select Centrality"/> | <input type="text" value="Select Generator Name"/> | | |
| 9 | mb | PHSD | 2018-03-06-1859676a1f5e-glue1-emf1 | |
| File name | | Event number | File size, Mb | |
| phsd-CuAu009.0GeV-mb-glue1-emf1-5k-0177.gz | | 5000 | 51589 | |
| phsd-CuAu009.0GeV-mb-glue1-emf1-5k-0015.gz | | 5000 | 52359 | |
| phsd-CuAu009.0GeV-mb-glue1-emf1-5k-0128.gz | | 5000 | 51911 | |
| phsd-CuAu009.0GeV-mb-glue1-emf1-5k-0226.gz | | 5000 | 50565 | |
| phsd-CuAu009.0GeV-mb-glue1-emf1-5k-0180.gz | | 5000 | 52905 | |
| phsd-CuAu009.0GeV-mb-glue1-emf1-5k-0107.gz | | 5000 | 49419 | |
| phsd-CuAu009.0GeV-mb-glue1-emf1-5k-0158.gz | | 5000 | 53848 | |
| phsd-CuAu009.0GeV-mb-glue1-emf1-5k-0209.gz | | 5000 | 51843 | |
| phsd-CuAu009.0GeV-mb-glue1-emf1-5k-0092.gz | | 5000 | 49986 | |

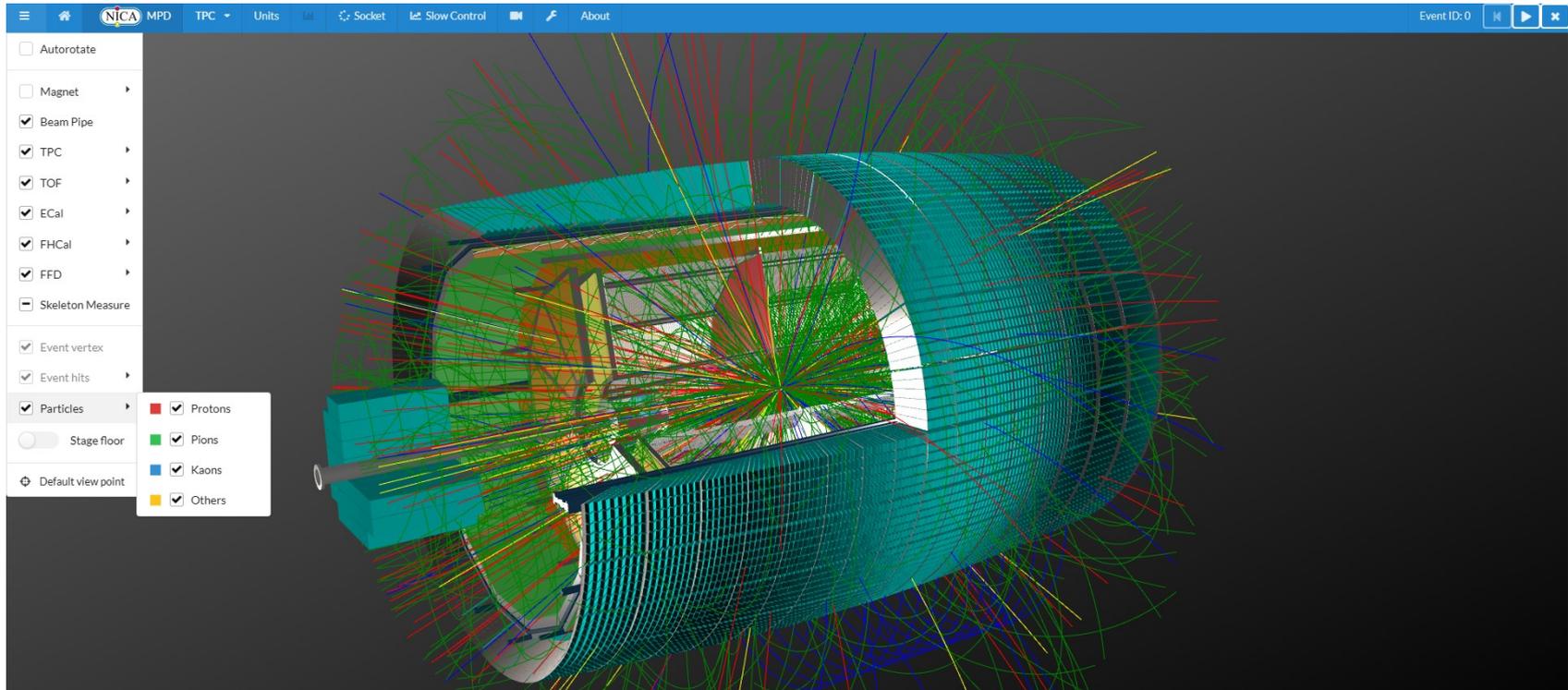
Event Display visualization examples



Event Display visualization examples



Event Display visualization examples



Summary

- Next release MPD Event Display will be able to visualize full chain of reconstruction process:
(generator → geant4 → clusterFinder → tracking)
- Generator files formats will be added
- «How to use MPD Event Display» page will be able after release through a link from the Event Display or from the main MPD software site (<https://mpdroot.jinr.ru/how-to>)
- Link to database would be separate page.



Thank you for your attention!