

# Communications from Physics Coordinator

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## SpdRoot 4.1.7 (development branch)

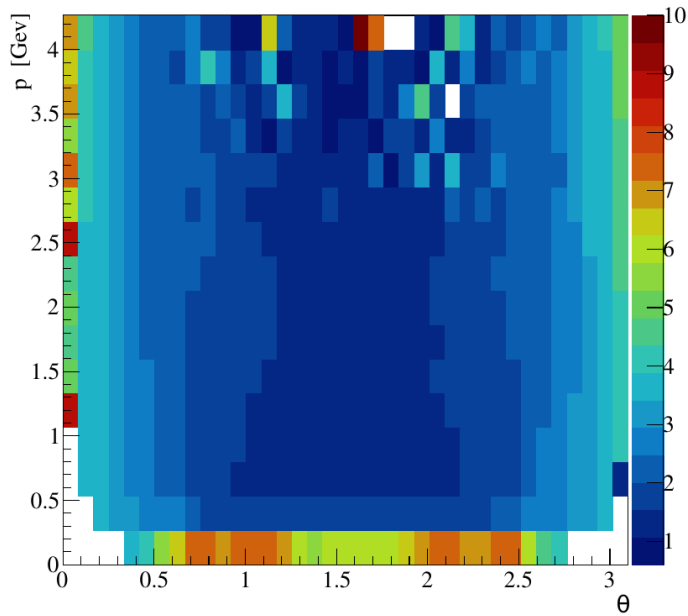
- New in SpdRoot 4.1.7 (development stage):
  - FARICH (simulation + simplified reconstruction, see talk by Artem) -- update on D-meson ( $\Lambda$ ) analysis is possible
  - MAPS/DSSD separation implemented – MAPS optimization is now possible
  - Update on BBC geometry (can validate BBC studies using the full geometry)
  - Fixed and updated primary vertex reconstruction
  - Also fixes initializing track momentum before fit (now randomization around MC-truth – affected track reconstruction efficiency), fixed overlaps in different systems, etc... (see my previous communications)
- There is production of **~20 million** events. So far no major issues are found (not everything is tested). Can proceed to massive production in one-two weeks.
- The test sample for the collision energy of **10 GeV** for the 1<sup>st</sup> stage will be prepared soon.
- A work on **data space reduction** is crucial to accumulate decent statistics.
- *Improved straw simulation, options for ST geometry and “realistic hit production”* and hopefully more realistic track finding can be expected in the **next release**.

# SpdRoot 4.1.7 (dev) and production files

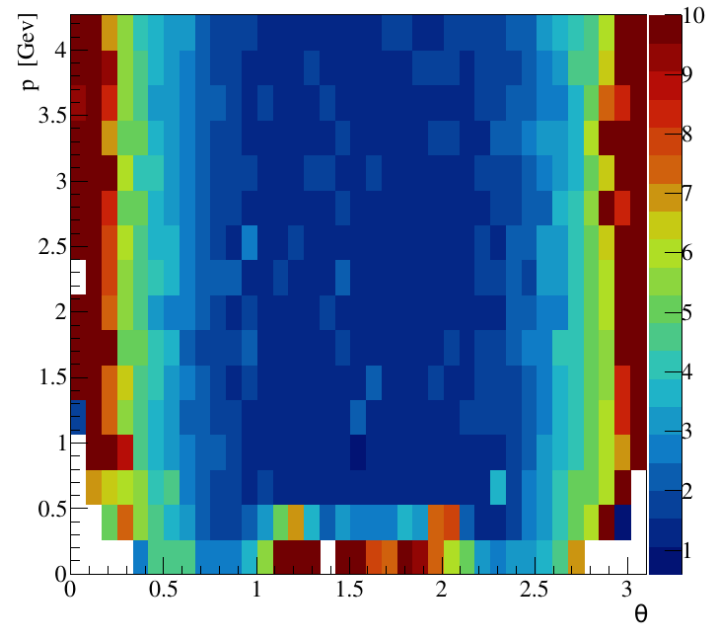
- SpdRoot 4.1.7 can be downloaded git repository (tag: dev-4.1.7)
- On *lxui* the container is available at `cvmfs: /cvmfs/spd.jinr.ru/images/spdroot-dev-4.1.7.sif`
- The list of the production files (simu, par, reco) is available at `/eos/nica/spd/users/iden/production/spdroot-4.1.7-dev-minbias-27`
- Please, consider using **rucio** in future
- The production is performed **for the 2-nd stage configuration with DSSD, FARICH for pp minimum bias collisions at 27 GeV**
- Use is a batch script **template** at gitlab (**modify it for your needs!**): [https://git.jinr.ru/idenisenko/batch\\_scripts](https://git.jinr.ru/idenisenko/batch_scripts)

# Some tests of the production (momentum resolution)

Momentum resolution as a function of azimuthal angle and momentum



SpdRoot 4.1.6, 40M events

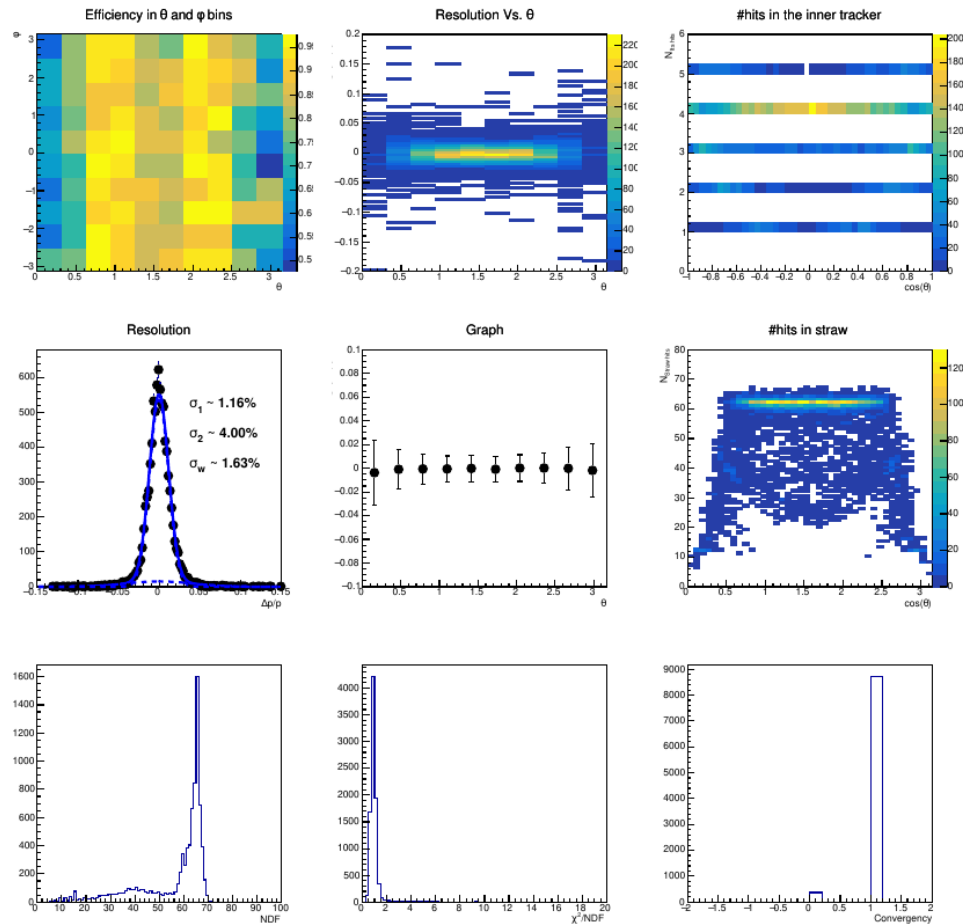


SpdRoot 4.1.7, ~20M events

# Some tests of SpdRoot-dev-4.1.7 (local)

Local track fitting tests for 1.5 GeV muons in the same configuration (10K events).

Small modification of these scripts for production tests is needed.



## More tests?

Please, perform tests with this sample and new SpdRoot version and share the results!

Thank you!