

# Communications from Physics Coordinator

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SPD Physics & MC Meeting  
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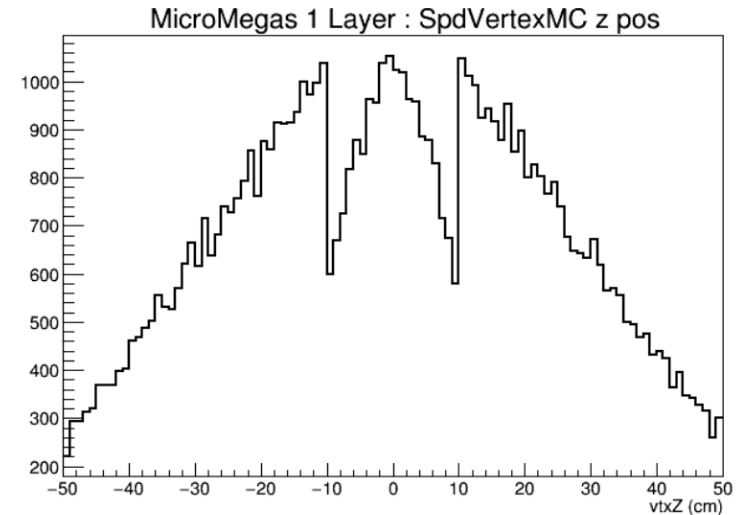
- The *development* branch synchronized with the *master*. Please merge your updates there instead of committing to *master* directly. We should have both versions of SpdRoot available at LIT cluster.
- New vertex fitting procedures implemented by V. Andreev:
  - Kalman vertex fit
  - Adding primary vertex as an additional measurement to the track (preliminary it significantly reduces width of  $J/\psi$ )
- Bug-fixes by Ruslan

## Ongoing work

- BBC, FARICH, MAPS/DSSD, adding generator for elastic scattering
- Realistic pattern recognition

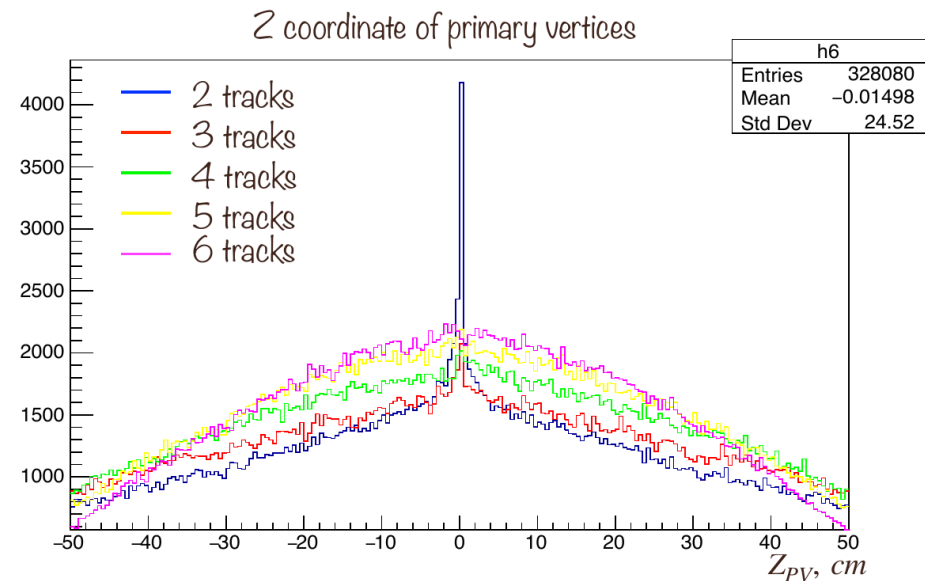
# Issues with SpdRoot

- “Vertex fit” problem for 1 layer of inner tracker reported by Amaresh 30.01.24 and discussed also 06.02.24 at Weekly Meetings.
- Problem traced to **wrong seeding of the initial approximation for Kalman fitter**.
- There possible fix is to change the initial approximation using smearing of the initial position and vertex, but **using realistic pattern recognition** would be a better option.



# Issues with SpdRoot

- Another thing was reported by Elena at Weekly Meeting (13.02.24)
- The main problem we **don't have a definition of well reconstructed vertex**. Another issue relate to initial estimation of vertex position. Vladimir Andreev works on it.



- Initial goal 20M MB event @27 GeV
- There is ongoing work on production. Test jobs using singularity container (SpdRoot 4.1.6) have finished successfully, but some small additional work with the production system is needed.
- Please **avoid using unicode** in the standard output or error handling. It currently crushes the log analyzer.
- If you don't need to modify SpdRoot code, I suggest to use the same container as is used for production for your batch jobs (<https://git.jinr.ru/nica/spdroot/-/wikis/SpdRoot%20in%20Singularity>)

# Ongoing work on analysis notes

- Polarimetry with  $\pi^0$
- $K_S$  reconstruction study at SPD
- Prospects of Open-Charmed Asymmetry Measurements at the SPD

# Date of the next Physics & MC meeting

We will have our next Physics & MC on the **20-th of March 2024**.

Thank you!