

Communications from Physics Coordinator

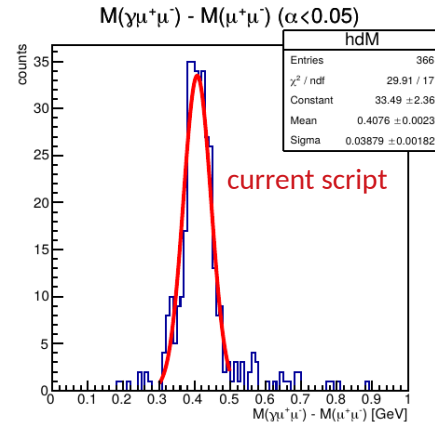
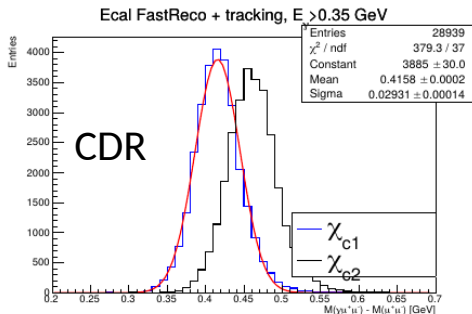
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SPD Physics & MC Meeting
20.09.2023

- SPD Collaboration Meeting in Samara (October 23-27)
- No Physics & MC Meeting in October. You can give talks at Weekly Meetings. Following talks are expected:
 - muon/pion separation in RS
 - K_S reconstruction
 - cluster reconstruction at SPD energies
 - ...

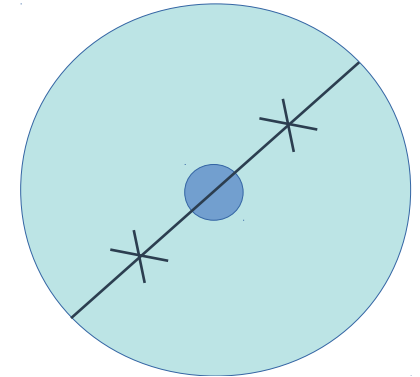
Recent SpdRoot changes (geometry-update-spring-2023)

- The SpdRoot branch [geometry-update-spring-2023](#) now **contains necessary changes** for the new SpdRoot release, **but tests needed**.
- **Modified geometry:** (see talk by A. Korzenev at the last CM): **RS** (Alexandr), **Ecal** (Andrey), **AEG** (Artem), **TOF** (Artem), moved **TS** endcaps (Ruslan), update of **BBC** (Zhanibek, not everything committed)
- **Update physics examples:** **jpsi-mumu**, **chic**, added README and wiki entry <https://git.jinr.ru/nica/spdroot/-/wikis/Analysis> (**and update for secondary vertex reconstruction with PID is needed!**)



SpdRoot: issues with reconstruction

- Solved problem with **tracks crossing the wire in straw**: track hits with two or more points created **are now ignored (a temporary solution)**. This is not the only case of creation of wrong hits (see talk by Ruslan at PW on 19.09.23), solution is to be implemented in the next release.
- Fixed bug with zero χ^2 for secondary vertex reported by Amaresh and Artem.
- Issue with **TOF geometry** in barrel (found by Artem and Leonid) is fixed by Artem Ivanov.
- An issue of **missing tracks** in the primary vertex is being investigated by Elena



SpdRoot: important steps

- Secondary vertex reconstruction (**volunteers?**):
 - Reconstruction of **D-mesons** should fully moved to user analysis stage (D-meson reconstruction should be available as a package or routine). Standard reconstruction should reconstruct only particles like K_S , Λ , ...
 - In case K_S , Λ **only realistic PID** should be used (if necessary, **no references to MC-truth**)
 - When searching for D-meson candidates it's necessary to **remove tracks from primary vertex**. This can be done quickly for the KFParticle package, a corresponding task for the primary vertex is needed
- Scripts to test correctness of reconstruction of **each subsystem** (**volunteers?**).
- We may expect **constraint fit of the track momenta to the primary vertex** soon (Vladimir Andreev is working on that)
- Andrey Gridin started working on hit reconstruction in RS, which includes **combinatorial hits**.

Meeting agenda

SCIENCE BRINGS NATIONS TOGETHER

SPD Physics and MC meeting N34

📅 Wednesday 20 Sept 2023, 11:00 → 13:00 Europe/Moscow



11:00 → 11:10 **Communications from Physics Coordinator**

Speaker: Igor Denisenko (JINR)

🕒 10m

11:10 → 11:30 **SPD tracking - flash algorithms**

Speaker: Mihai-Octavian Dima (JINR - MLIT)

🕒 20m

11:30 → 11:50 **Status of reconstruction in ECAL and barrel-endcap bridging**

Speaker: Andrei Maltsev (JINR)

🕒 20m

11:50 → 12:10 **Λ_c^+ observation possibility at SPD NICA experiment**

Speaker: Artem Smirnov (SINP MSU)

🕒 20m

Thank you!