

FCC Week - SW Tracking Plans

FCC software meeting

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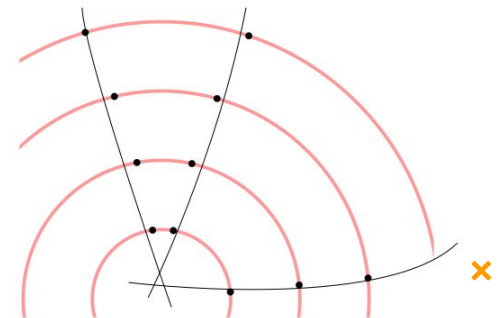
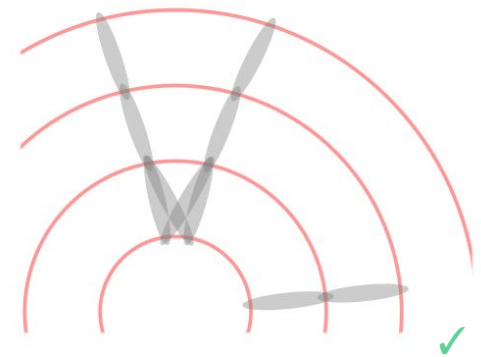
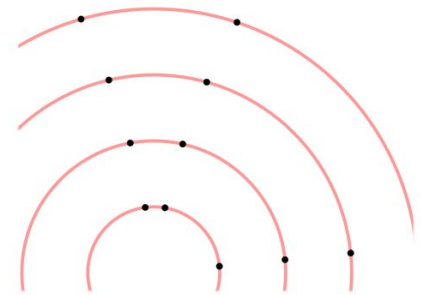
What do I want to do?

Describe everything (software included) in the CDR
→ FCCSW v0.10 should contain everything mentioned and used (within FCCSW)

- Pileup studies on the track seeding level using [TrickTrack](#)
 - Cellular automaton-based pattern recognition
 - Can create chains of hits with length N subject to geometrical cuts
 - Not limited to inner barrel
 - Versatile, can be combined with ML methods for hit doublet creation
- Study detector and software performance (combinatorics)
 - Add **timing** capabilities and see effect on fake rate
 - Get preliminary track reco in place that supports trigger and single particle use cases (in const. magnetic field)
 - Provide rough estimate of **computing performance**

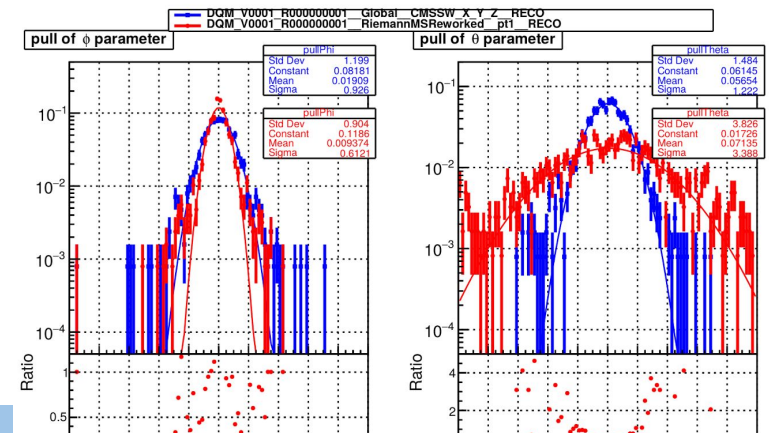
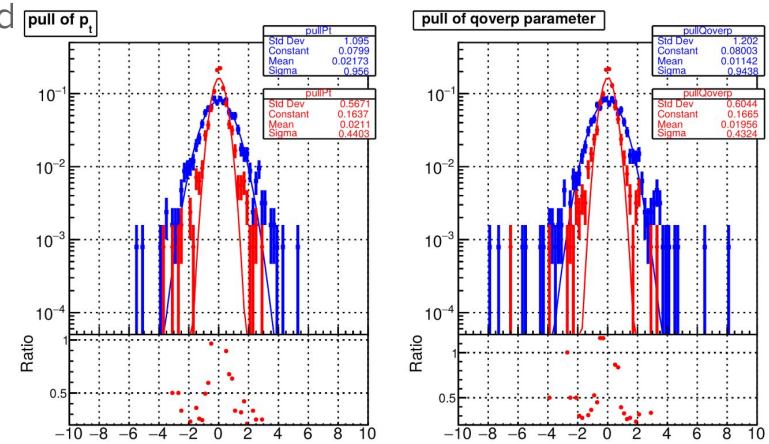
What is the status in FCCSW?

- Track Detector Geometries:
 - v3.02 stable
 - v4.00 supported
- Fast Digitization
- CombinatorialSeeding
- TrickTrack PR
 - Doublet Creation (without KDTree)
 - Track Seed creation
 - Hit Chain
- <https://github.com/HEP-FCC/FCCSW/pull/242>



What needs to be done for CDR/FCC Week?

- Finish TrickTrack PR
- Create KDTree Datastructure for Hits for Timing studies
- Integrate Riemann Fit
 - Validation in CMS Software pretty much finished



- Determine cuts for efficiencies