

Testing the GBLFitter

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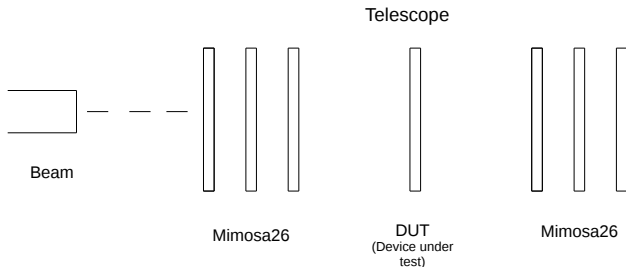
- 1 Testbeamphysics
- 2 Allpix squared and EUTelescope
 - Allpix squared
 - EUTelescope
 - Trackreconstruction
 - GBLFitter
- 3 Testing the GBLFitter
 - Upstream- and Downstreamtriplets
 - Matching the triplets

Motivation

- Newly developed detectors have to be tested under conditions close to working conditions
 - Possible to test under which specific conditions (beam energy, -divergence, -spot size) the detector is able to detect a particle
 - Track information of the particle is necessary
- multiple detectors with known properties deliver the track information

Testbeam setup

Testbeam structure

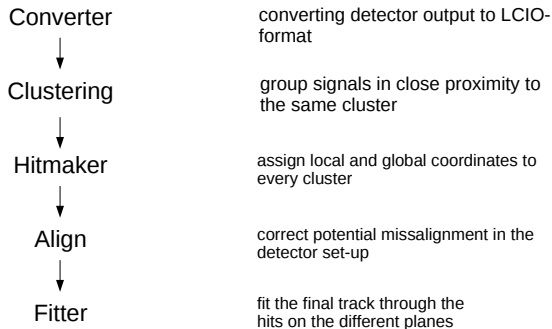


Allpix squared

- Simulation of testbeam events with different beam characteristics
- Known number of tracks can be compared to reconstruction in dependence to parameter changes
- Necessary to guarantee controlled analysis of parameter dependency

Trackreconstruction

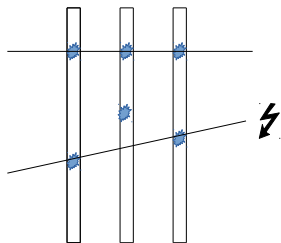
EUTelescope



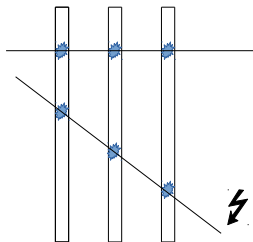
GBLFtter - Tripletfinding

Parameters for upstream/downstream triplet candidates

- triResCut

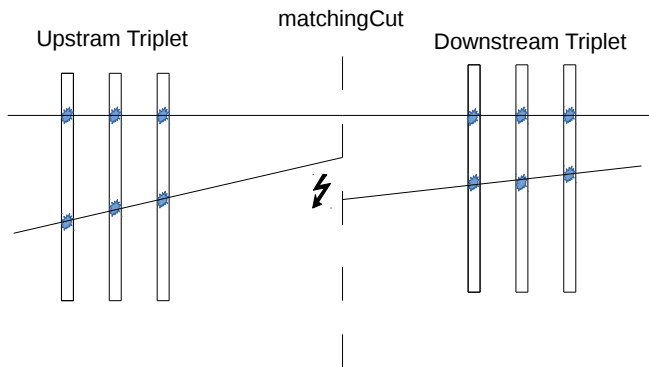


- slopeCut

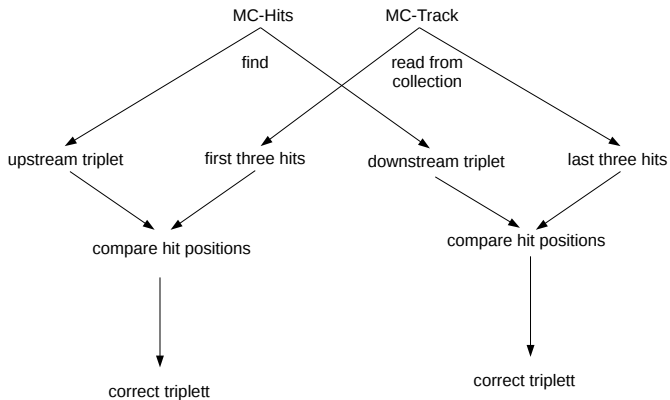


GBLFitter - Tripletmatching

Parameters for upstream/downstream triplett matching



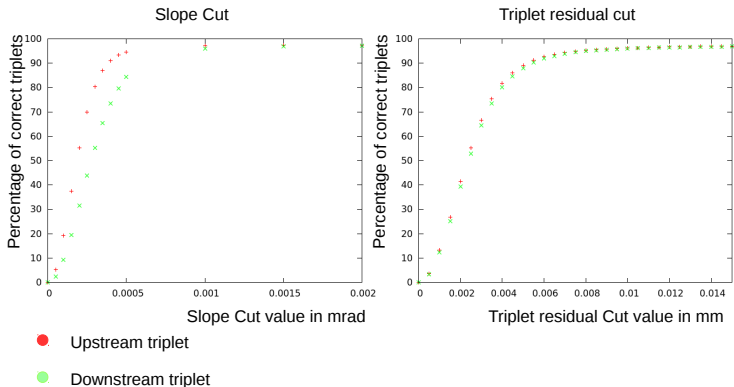
Finding correkt triplets



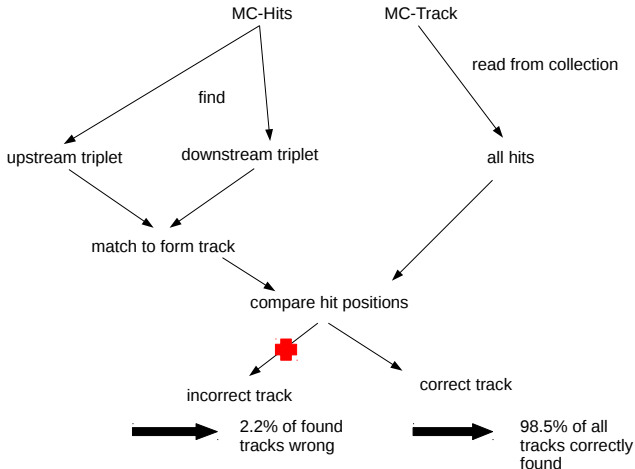
Consistently 98.5% correct

Parameter dependency

Performance with parameter variation



Finding correctly matched triplets



Parameter dependency

Performance with parameter variation

