

Current status of track fitting in MarlinTPC

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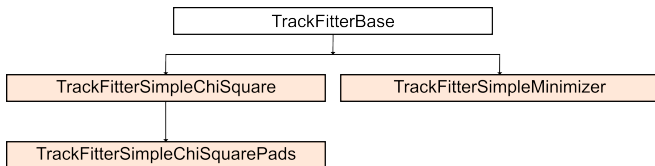
TrackFitterBase:

- Virtual class to derive actual track fitters from
- Common interface for fitting and analysis processors
- Most members purely virtual (e.g. `fitTrack(Track const* seedTrack)`)
- Storage and access of fitter type in tracks

Interface:

- `TrackImpl* fitTrack(Track const* seedTrack)`
- `DoubleVec calculateResiduals(Track* testTrack,
 unsigned int testHitNumber,
 Track* reference Track = 0)`
- `DoubleVec calculateResiduals(TrackerHit* testHit,
 Track* trackWithoutTestHit)`
- `unsigned char getFitterType()`
- `static void setTrackFitterType(unsigned char type, TrackImpl* track)`
- `static unsigned char getFitterTypeFromTrack(int trackTypeWord)`

FitterTypes



FitterTypes:

- Derive track fitters from TrackFitterBase
- Implement algorithms for track fitting and residual calculation
- IMPORTANT:
 - Add FitterType to TrackFitterBase as soon as work starts on a new track fitter!
- LIKELIHOOD = 1
- SIMPLECHISQUARE = 2
- SIMPLECHISQUAREPADS = 3
- LINEARREGRESSION = 4
- KALMAN = 5
- SIMPLEMINIMIZER = 6
- CHISQUARE = 7
- 8 - 256 free

Interface:

```
static TrackFitterBase* getTrackFitter( unsigned char fitterType,  
                                         LCParameters const* collectionParams,  
                                         LCEvent const* event = 0 )
```

Description:

- Interface to handle track fitters
- Track fitters are only created once
- Change in parameters resets track fitters to new parameters
- New track fitters have to be added to the factory by their developers



- Finished:
 - TrackFitterBase and some derived fitters (TrackFitterChiSquare, TrackFitterChiSquarePads and TrackFitterSimpleMinimization)
 - TrackFitterFactory
 - TrackFitterSimpleChiSquareProcessor debuged

- To do:
 - Merge all changes into the trunk
 - Find and remove bug in the TrackSeederProcessor