

# NON-DETERMINISM IN TRACK RECO

MIRIAM DIAMOND

JULY 12 2017

**github issue 152**

**Heads-up: LCIO raw → reco**

**Running over the same event doesn't always yield the same result!**

**Quick fix: replace some HashMaps with LinkedHashMaps**



# TRACKING UNIT TESTS

MIRIAM DIAMOND

JULY 12 2017

**github issue 134**

# MY OPEN ISSUES

- ⓘ **Unit tests for track reco** enhancement  
#134 opened 17 days ago by mdiamon
- ⓘ **Provide approximate calculation for helix intersections**  
#133 opened 14 days ago by mdiamon
- ⓘ **ThreePointHelixCheck multiple scattering error** bug  
#126 opened 22 days ago by mdiamon
- ⓘ **Fix speed bottlenecks in track recon** bug  
#117 opened 29 days ago by mdiamon
- ⓘ **Create a Track Ambiguity-Resolver** enhancement  
#65 opened on May 10 by mdiamon

- Each issue has separate branch
- Need to refine #134, then merge into other branches to test each of them

# CURRENT UNIT TESTS

- Unit tests that now work: [hps-java / tracking / src / test / java / org / hps / recon / tracking /](#)

 [ComparisonTest.java](#)

Compares .aida plots against reference set

 [HoleCreatorTest.java](#)

For my HoleCreation driver

 [MergeTrackCollectionsTest.java](#)

For my MergeTrackCollections driver

 [ReconTestSkeleton.java](#)

Base class for raw-reco lcio + tests/plots on reco

 [TestRunTrackReconTest.java](#)

▶ Derived class: raw-reco lcio + reco plots

 [TrackingReconstructionPlotsTest.java](#)

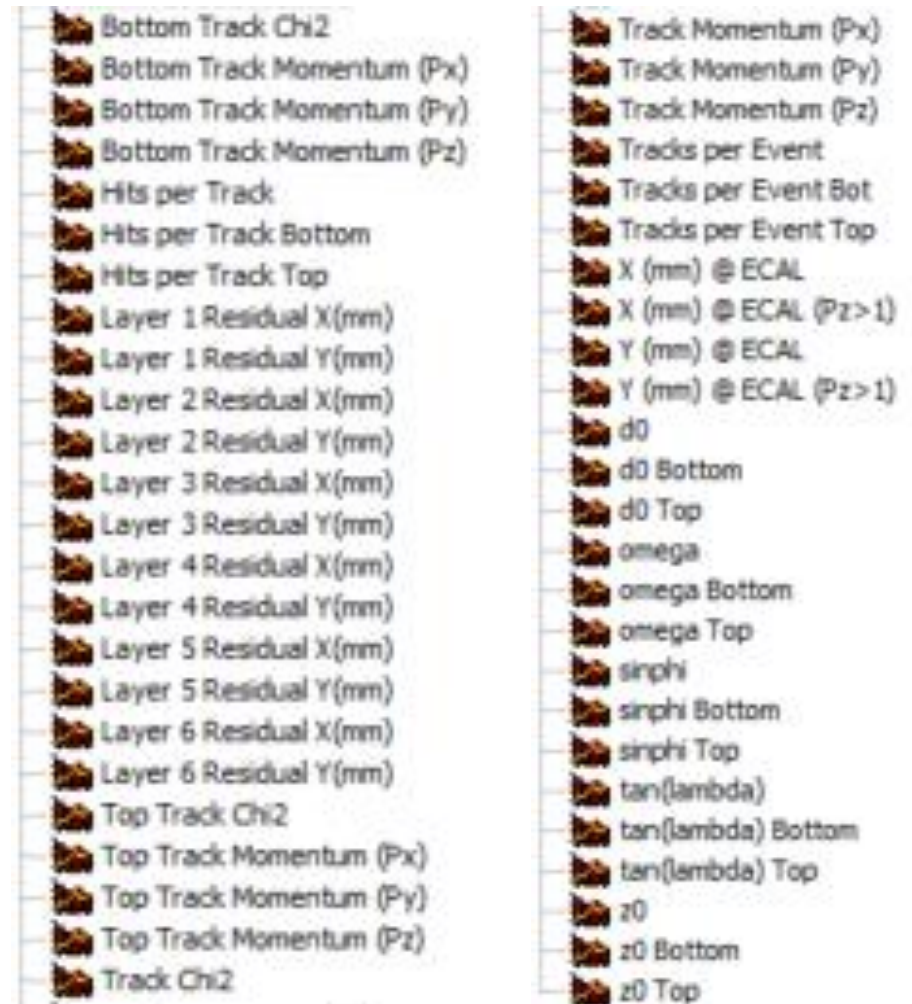
Creates plots from reco lcio

 [TruthResidualTest.java](#)

Finds residuals (truth vs MC) from reco lcio

# CURRENT UNIT TESTS

## ■ TrackingReconstructionPlots:



## TO BE DETERMINED

- Additional unit tests needed?
  - Additional plots for tracking reco?
- Which tests should run automatically
- Remote files (data and/or MC) for each test
- ASSERTs for each test
  - Total quantities (e.g. total # tracks reconstructed)
  - Average quantities (e.g. # tracks / event)
  - Distributions: t-tests, etc