

Global Track Reconstruction

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MICE Collaboration Meeting 44
Rutherford Appleton Laboratory

Global Track Reconstruction

30/03/2016

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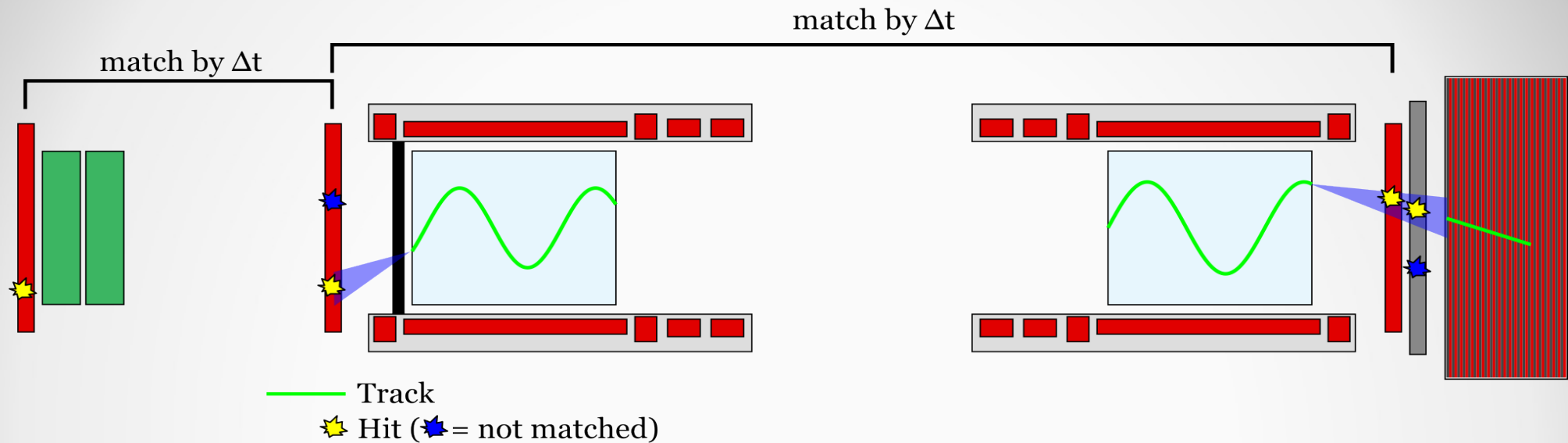
- Track Matching – Determine which detector hits belong to the same track and combine them so that PID (and later analysis) can be run on them
- Track Fitting – Improve the matched trackpoints using information from all detectors as well as provide the possibility of inter- and extrapolation to uninstrumented sections of the beamline

Track Matching

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- Propagate track point between detectors
- Compare agreement between propagated and measured track point
- → Accept / Reject

Track Matching

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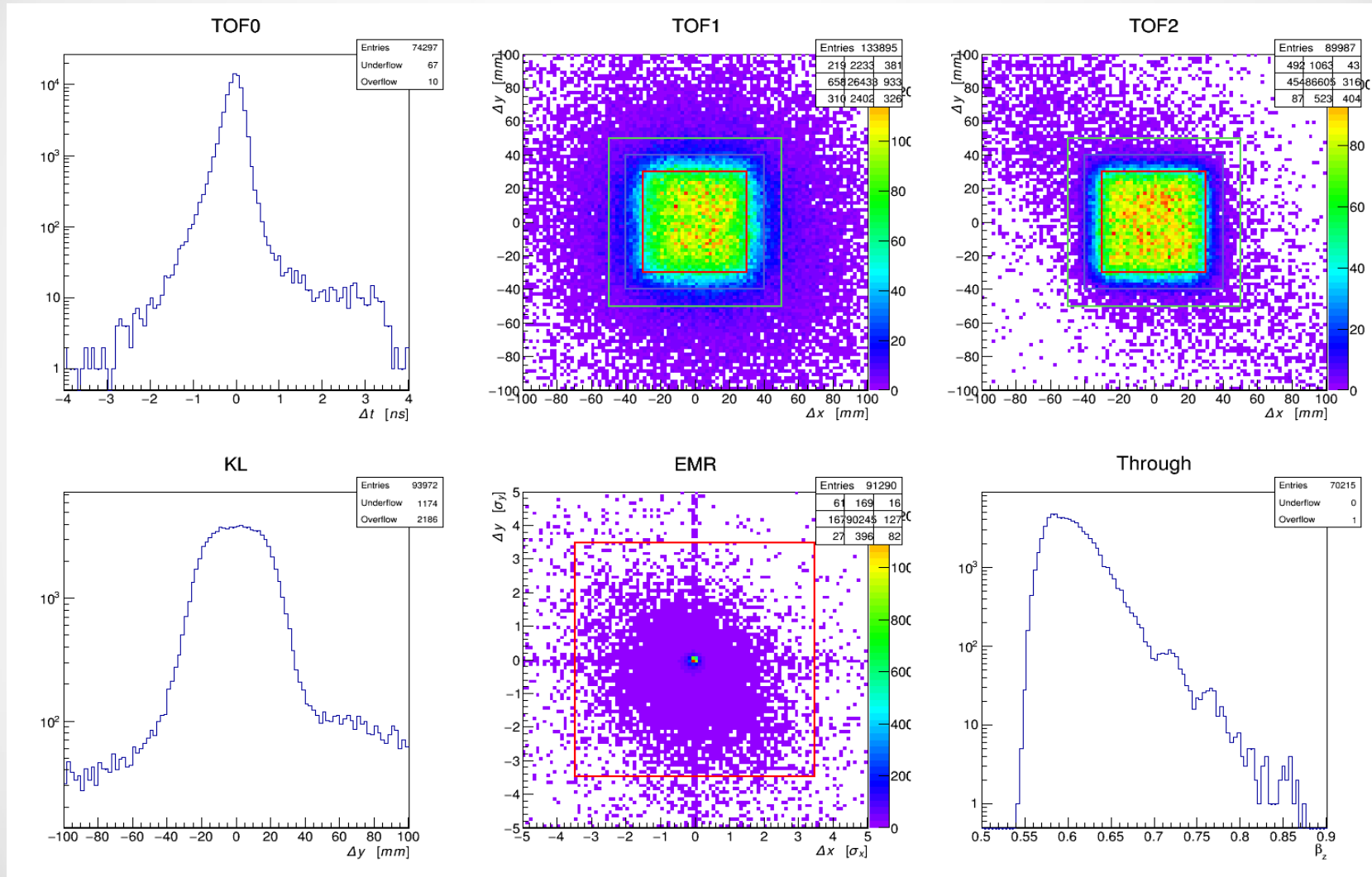
- Propagation requires mass and charge to be known, so track matching creates 3 or 6 tracks for each particle tagged with a PID hypothesis. Celeste's PID code then picks out the correct one

TM Residuals (Geometry 115)

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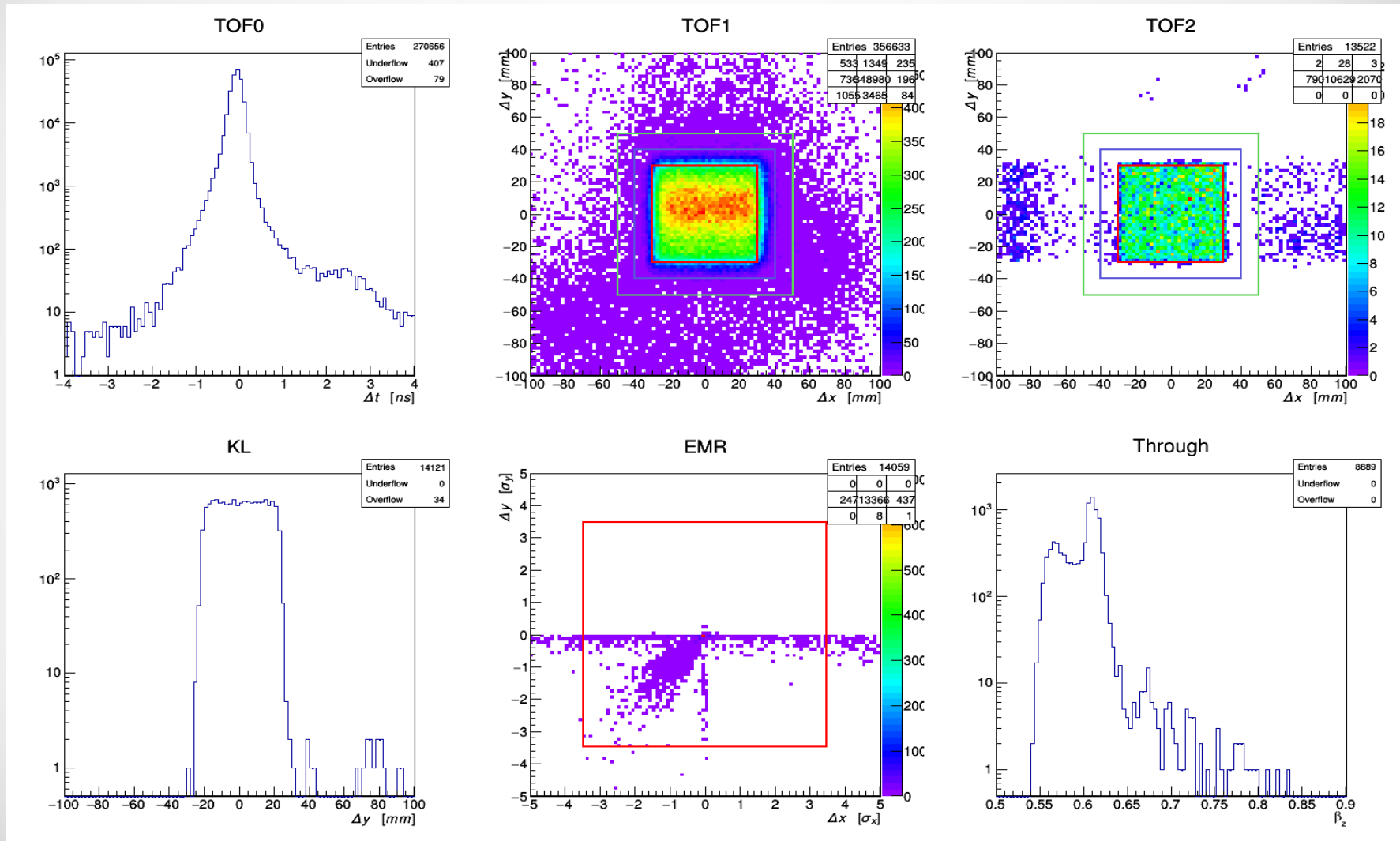


MC Residuals (Run 7469 Geo. [broken])

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Data

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- No residuals for data yet as there was an issue with Geant4
- Fixed last night, work on reconstructing 7469 data has started
- Should have results very soon

Next Steps

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- Testing and finetuning Track Matching on 7469 data
- Track Fitting – probably using Kalman