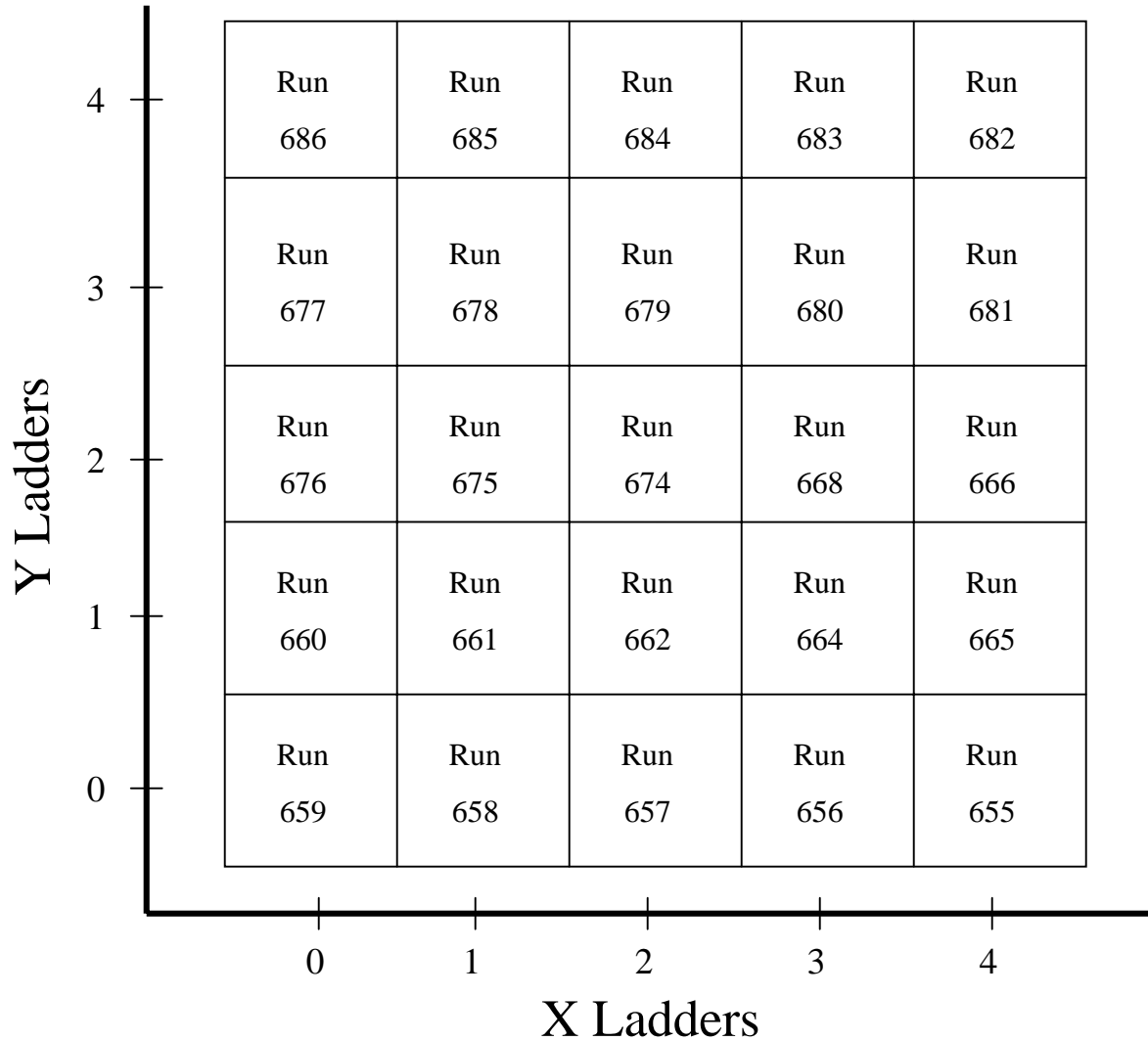




Calculating Residuals Using Centella - tb_recon

Slac Runs Used

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This figure is looking down on the top of the detector. All runs were completed at normal incidence.

3000 events were used per run



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The Method for Calculating the Residuals

- There are two algorithms that can be used to fit tracks to the data: a least squares method and a two plane method.
- **Least Square Method:**
 - Defines a preliminary track by using an algorithm which finds the track with the most runs and the lowest χ^2 .
 - The hits on this preliminary track are fit using a standard least square fit.
 - If any hit contributes too much to the χ^2 fit, it is removed from the track and the fit is done again. Question: what should be the maximum allowed χ^2 .
 - The residual is the difference between the predicted position and the actual position.
- **Two Plane Method**
 - The track from the least square method is passed to the two plane algorithm.
 - If there are tracks in both projections and hits in the two fitting layers (layer 8 and 15 in this case), these two hits are used to calculate a slope and an intercept
 - The residual is the difference between the predicted position and the actual position.

