

A First Look at a Real Geometry

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Beamtest EVO Meeting

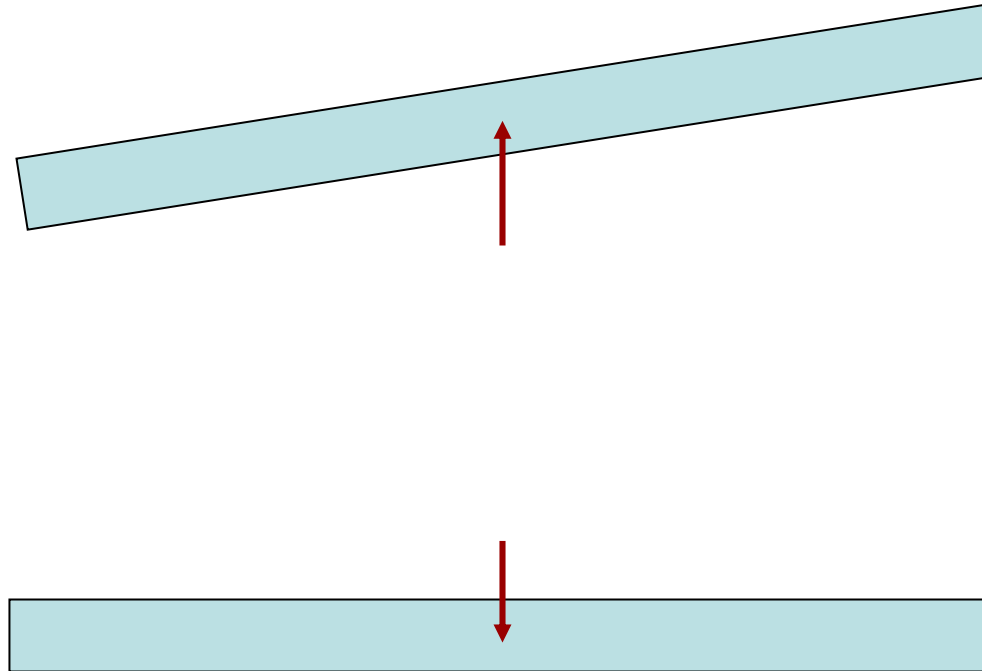
22 August 2007

Introduction

I'm looking into the possibility of putting the misalignments of the silicon planes into the Gleam geometry from the beginning.

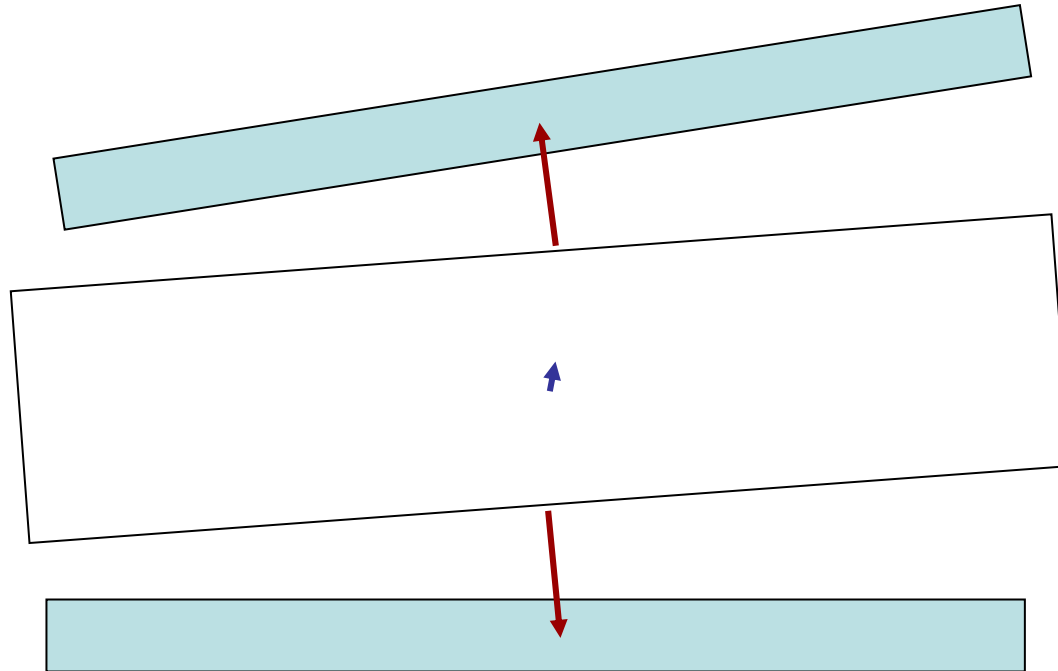
An important issue to address is potential overlaps of volumes.

Michael's Intratower Alignment



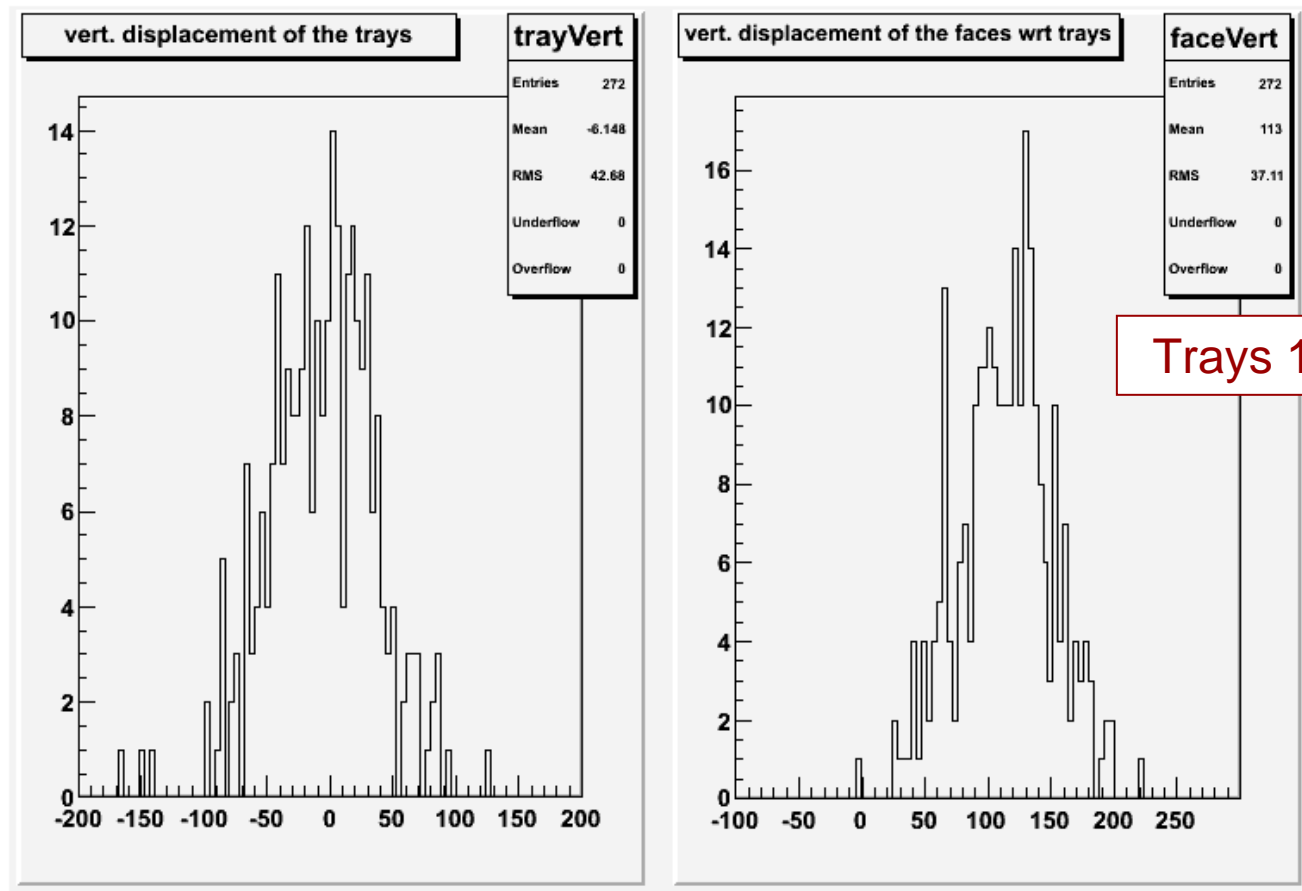
Displacements of faces are independent

An Equivalent Representation



Tray is displaced by average of the faces;
Planes are displaced with respect to the tray
(equal and opposite)

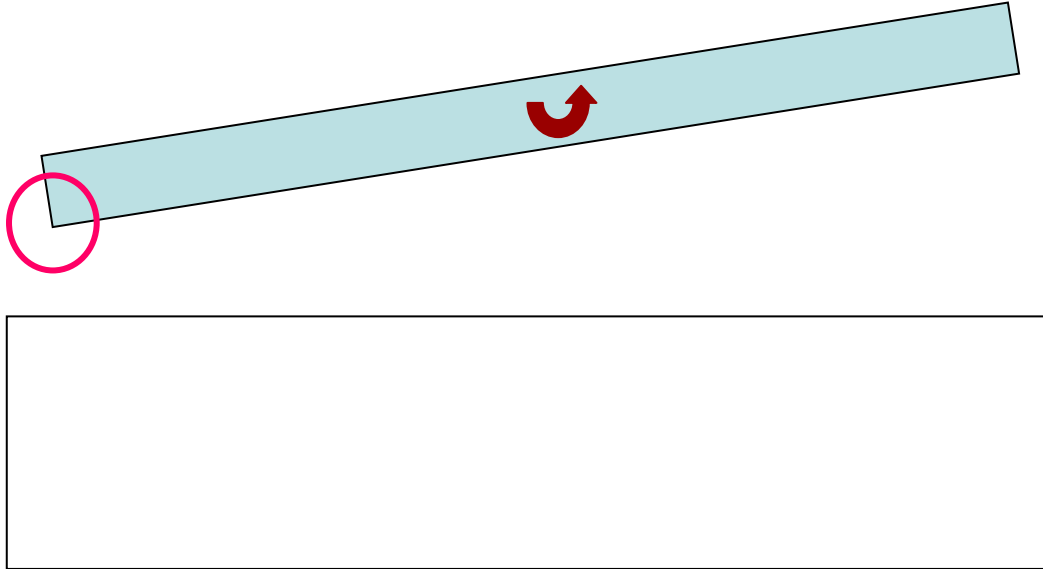
Michael's Latest



On average, the trays are at their nominal positions;
Faces are shifted wrt to the trays.

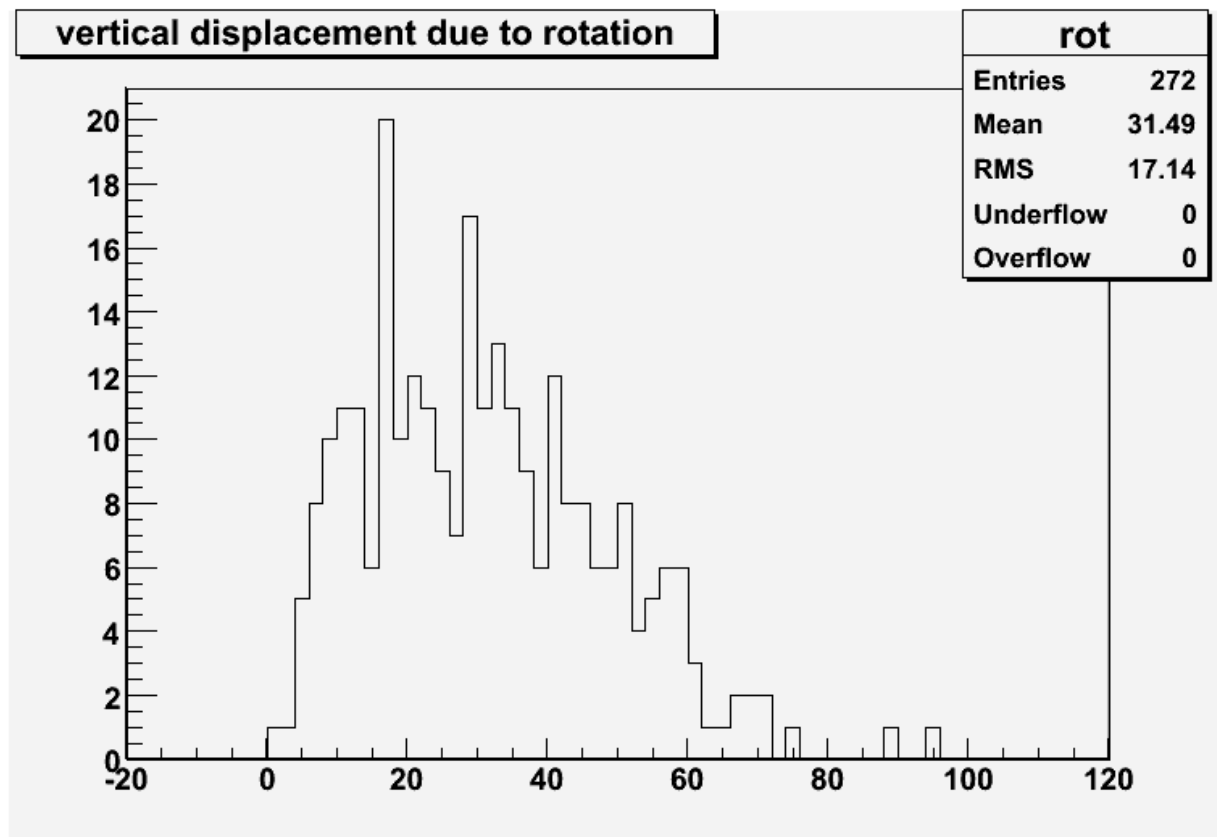
The faces of the trays are further apart.

Rotations

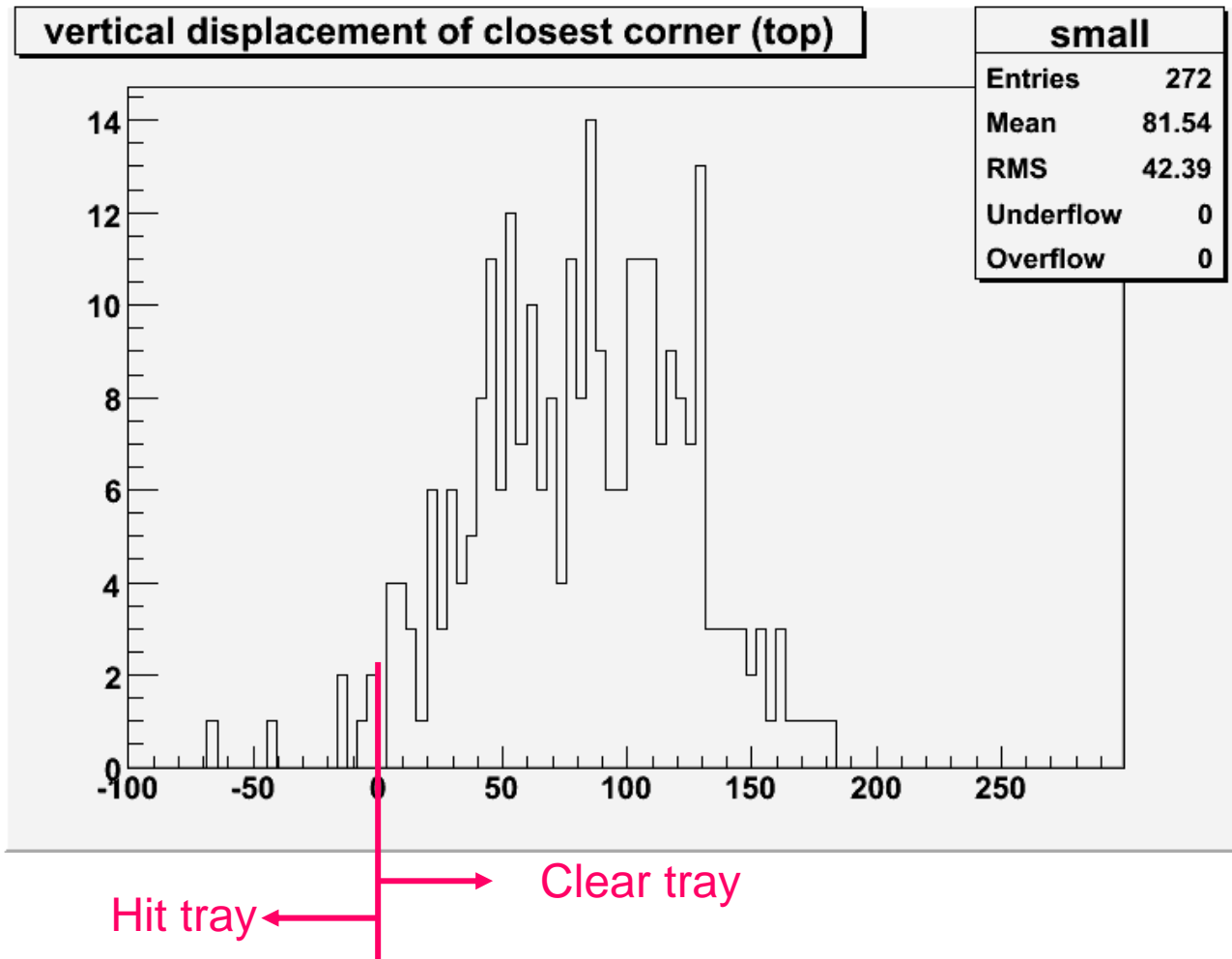


A rotation about x or y brings a corner of the plane closer to the tray.

Rotations of the LAT planes, in terms of displacement of the closest corner



Combined Vertical Displacement and Rotation

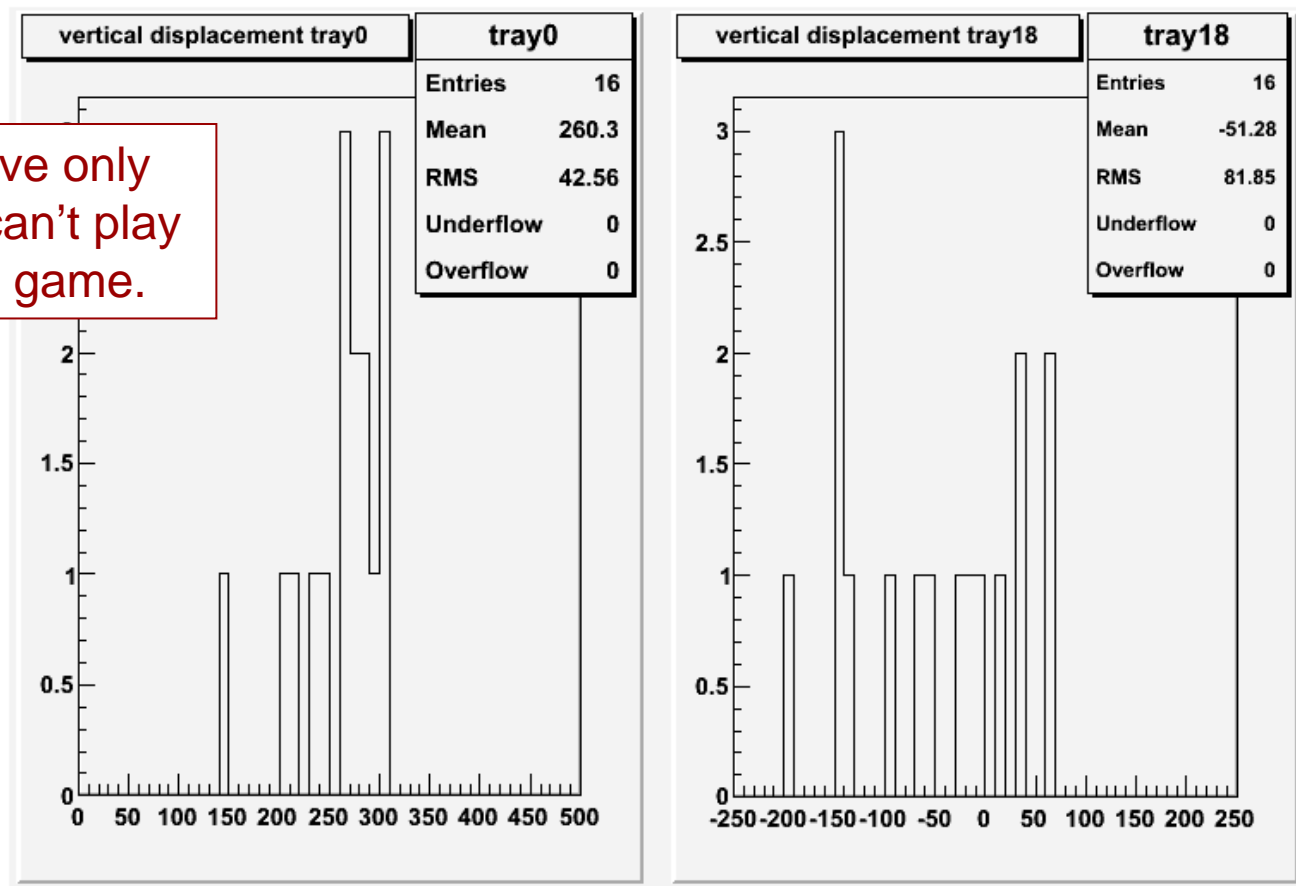


Possible Solutions

- Adjust the alignment of the close planes
- Replace the face sheet by a denser, thinner sheet and a gap.
 - Face sheet is 200 microns thick.
 - 100 micron gap will cover all the outliers

What about trays 0 and 18?

These have only one face; can't play the same game.



Tray 18 is consistent with the others.
Tray 0 (bottom, extra strong) is significantly “thicker.”