DCA Resolution Study

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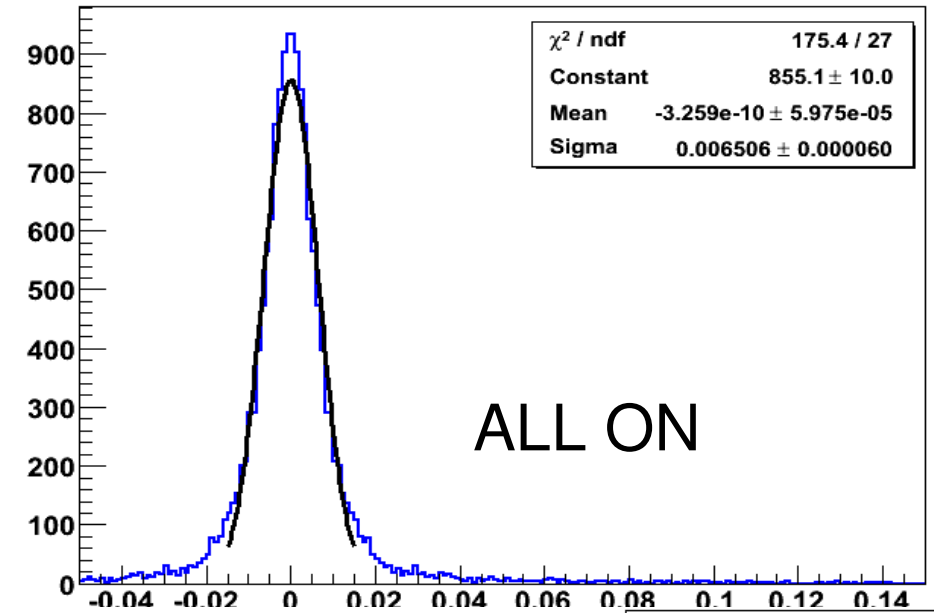
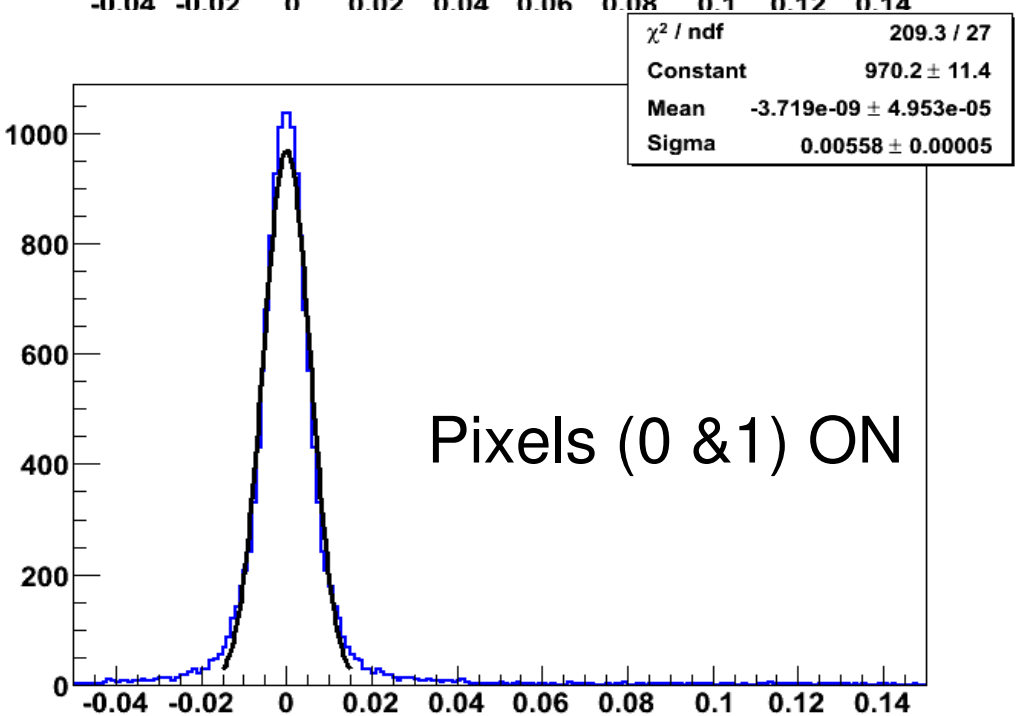
- Check for problems in svx code
- Check DCA resolution without strip layers
- Optimize KalFit errors

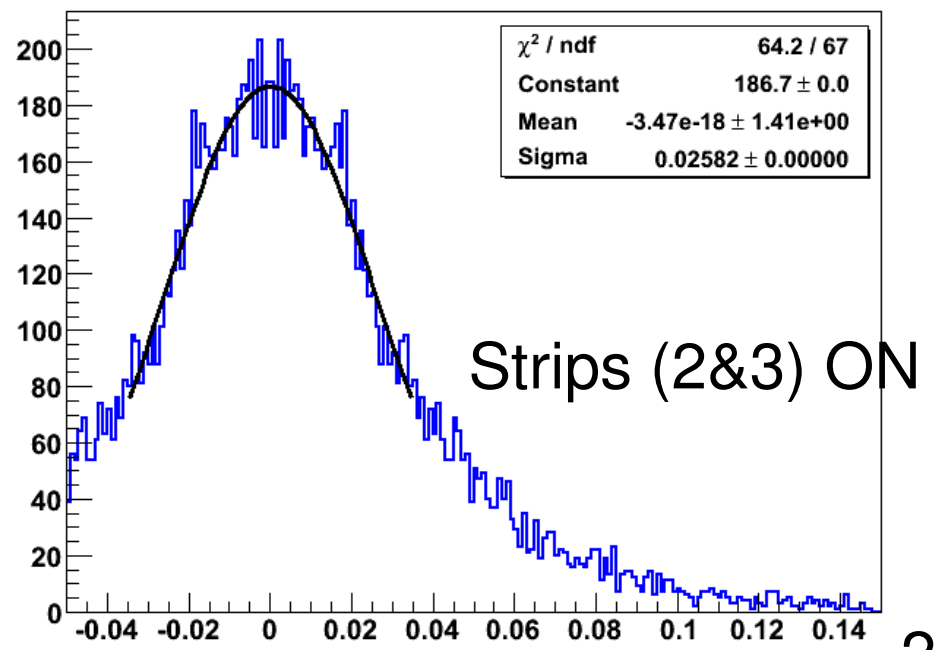
To switch off individual SVX layers we set KalFit errors to infinity

DCA Resolution

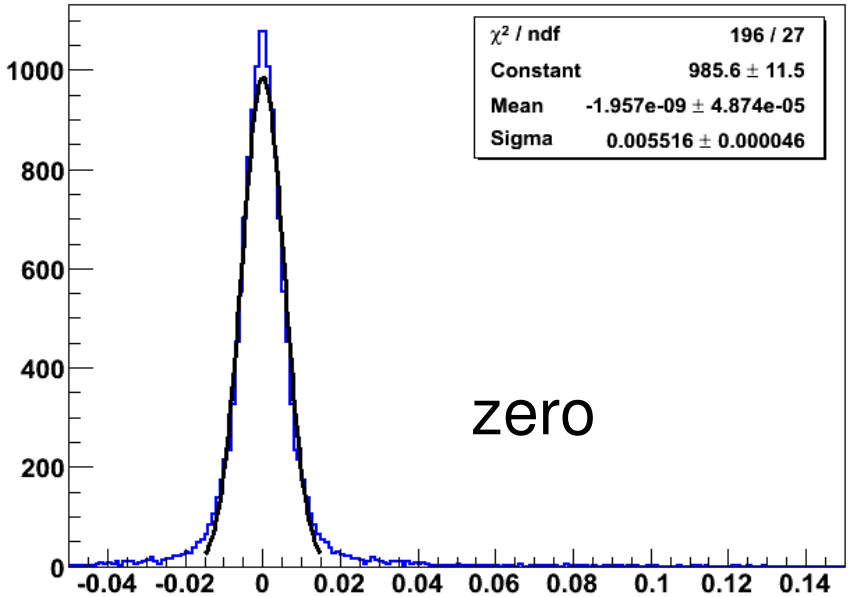


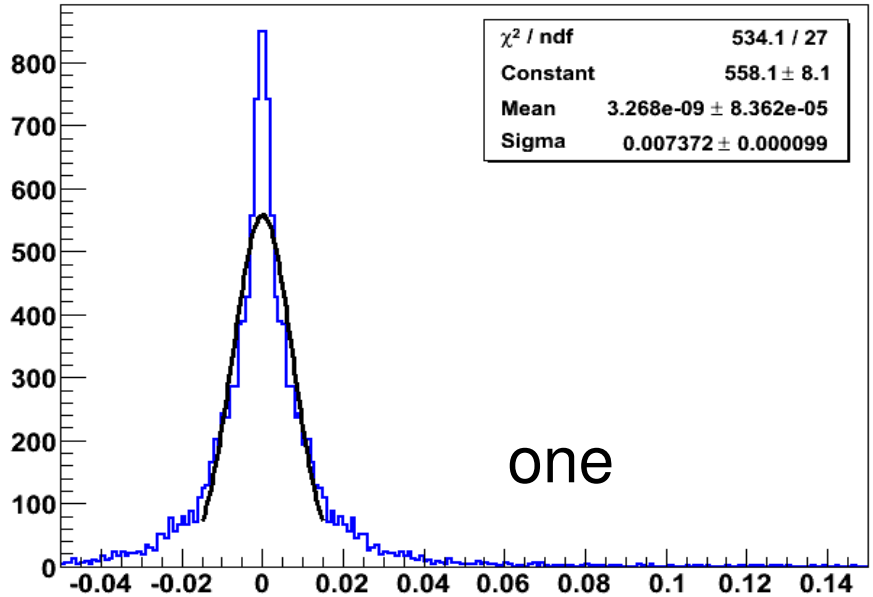
DCA resolution without strip layers seems a little better than with all 4 layers on!

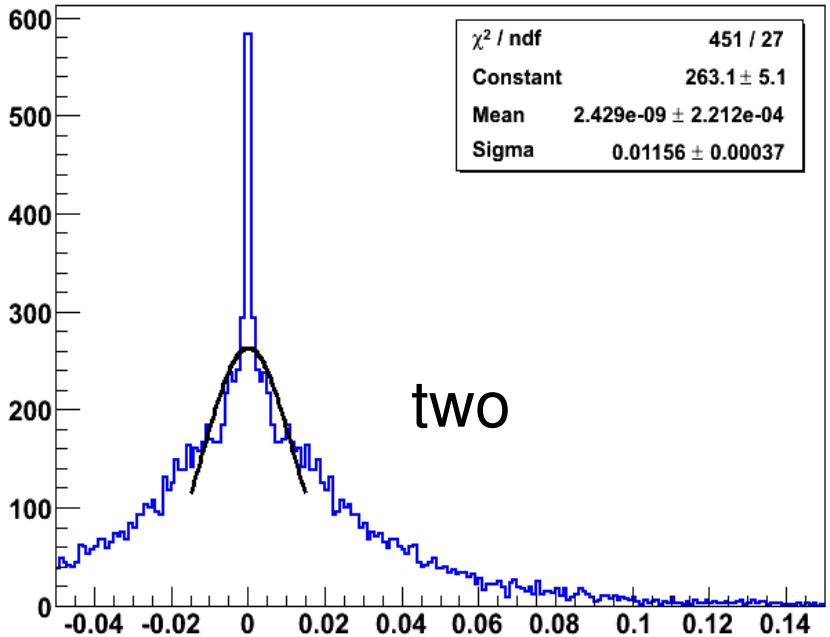


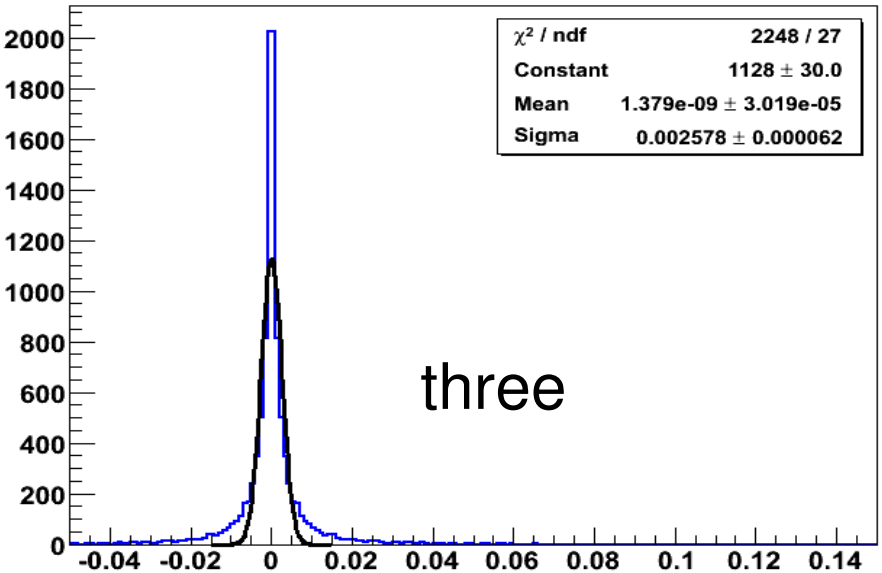


DCA Resolution Layer-by-Layer









What goes on?

Possible reasons for bad DCA resolution:

- KalFit errors are wrong

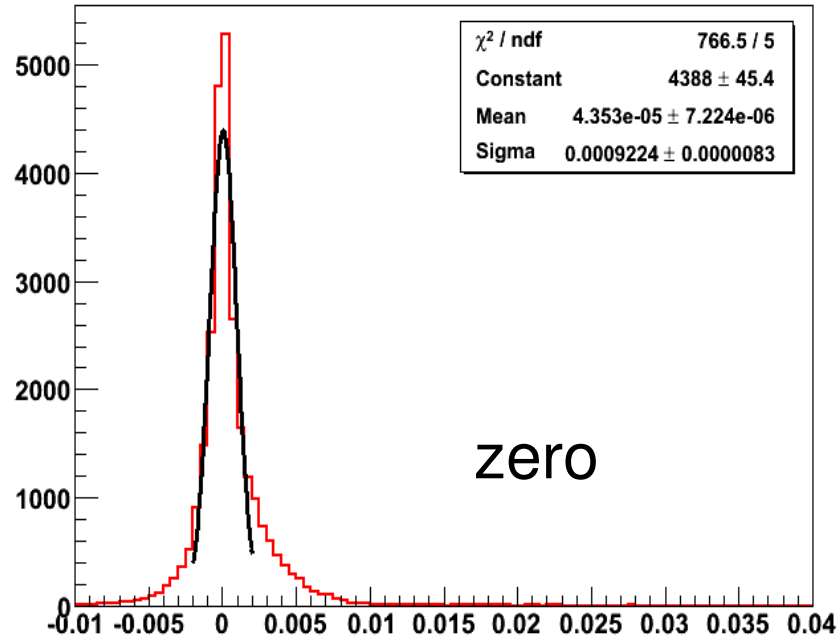
  If error is too large the layer is ignored and dca resolution is bad.

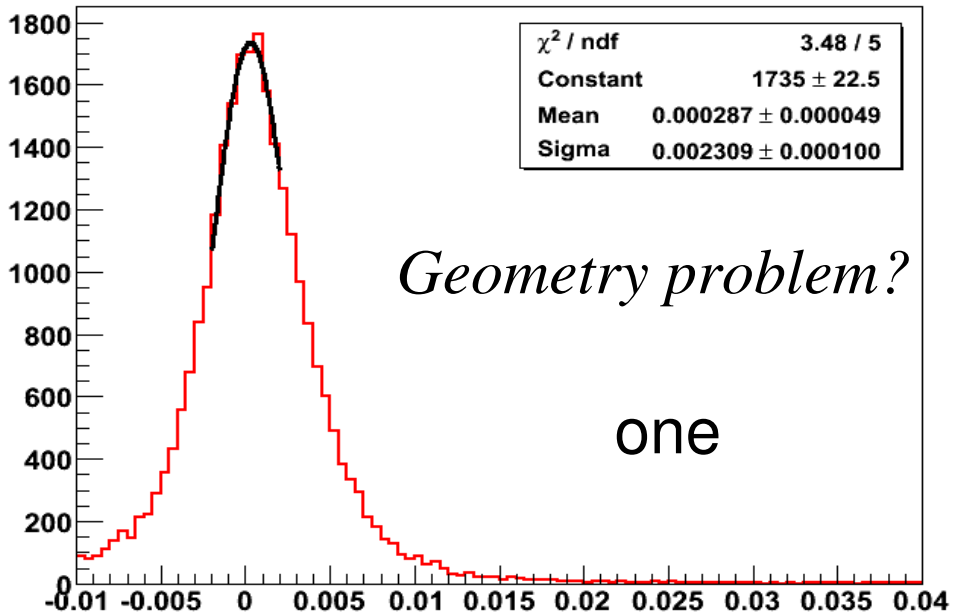
  If error is too small, accidental fluctuations will be taken into account and make resolution worse

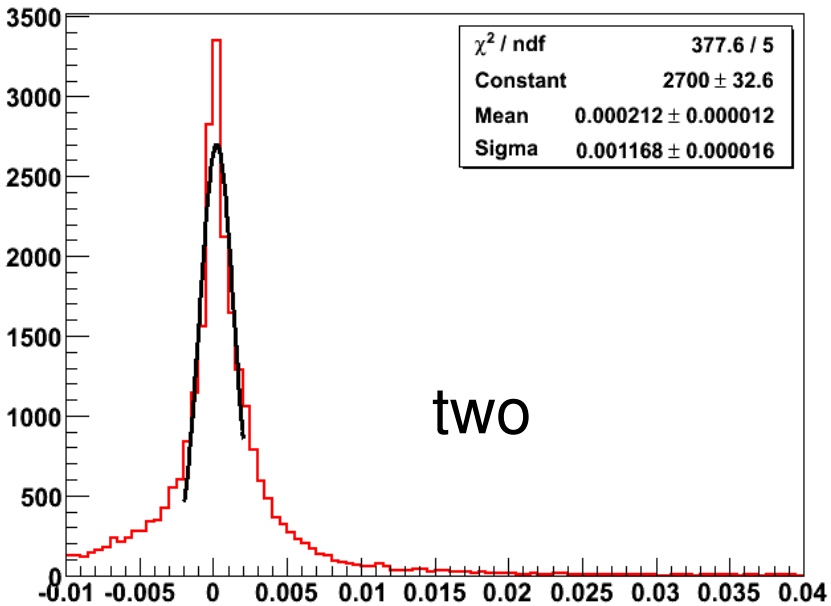
- Mismatch between pisa and reconstruction geometry

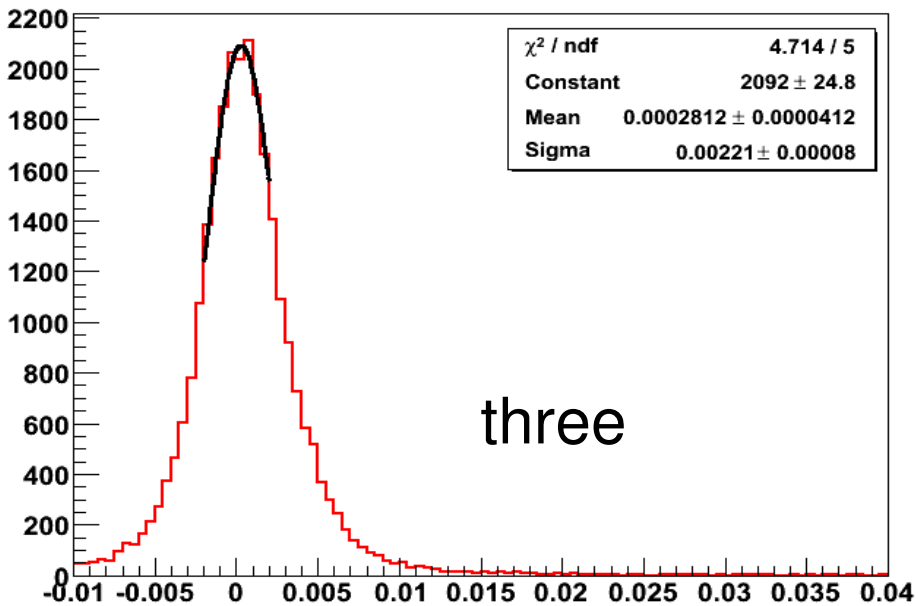
Solution: look at residuals in phi

Residuals in Phi









Summary

Layer	KalFit errors	Phi Residuals	DCA resolution
0 (pixel)	14.4 μm	9 μm	55 μm
1 (pixel)	14.4 μm	23 μm	74 μm
2 (strip)	23.1 μm	11 μm	116? μm
3 (strip)	23.1 μm	22 μm	26 μm

- Layer 1 could have geometry problem
- Layer 0 and 2 have too large KalFit errors

Plans

- Check layer 1 geometry

- Try to adjust layers KalFit errors and optimize DCA resolution