

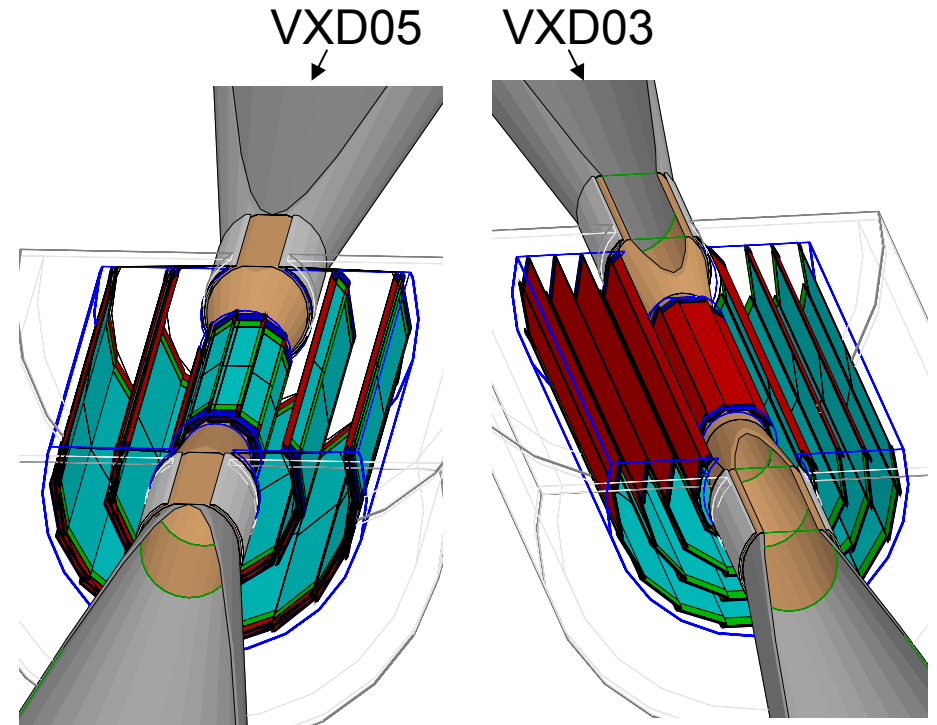


VXD simulation

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IPHC-Strasbourg

A vertex detector for the ILD

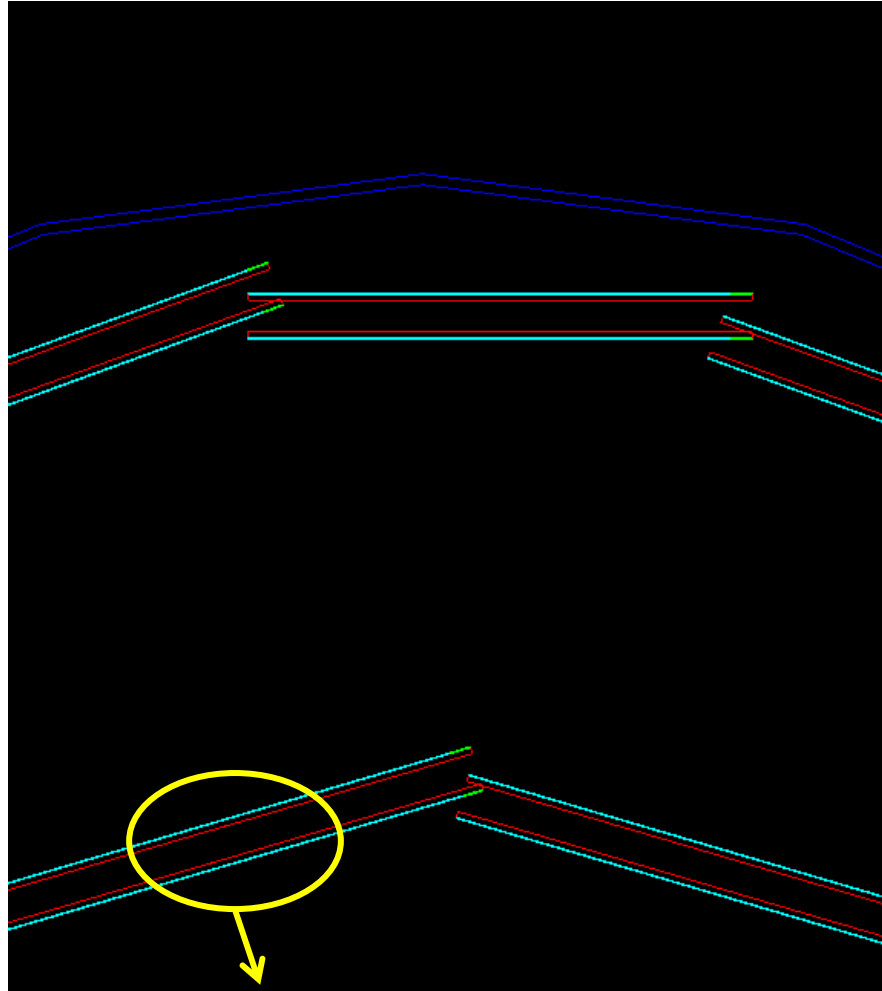
	VXD03	VXD05
layers	5	3 x 2
sensitive length (mm)	62.5	125
sensitive width (mm)	11-15-22	11-22
radii (mm)	15-60	16-60
sensitive thickness ($\mu\text{m}/\text{ladder}$)	50	50
graphite insensitive thickness ($\mu\text{m}/\text{ladder}$)	134	134



x-y section

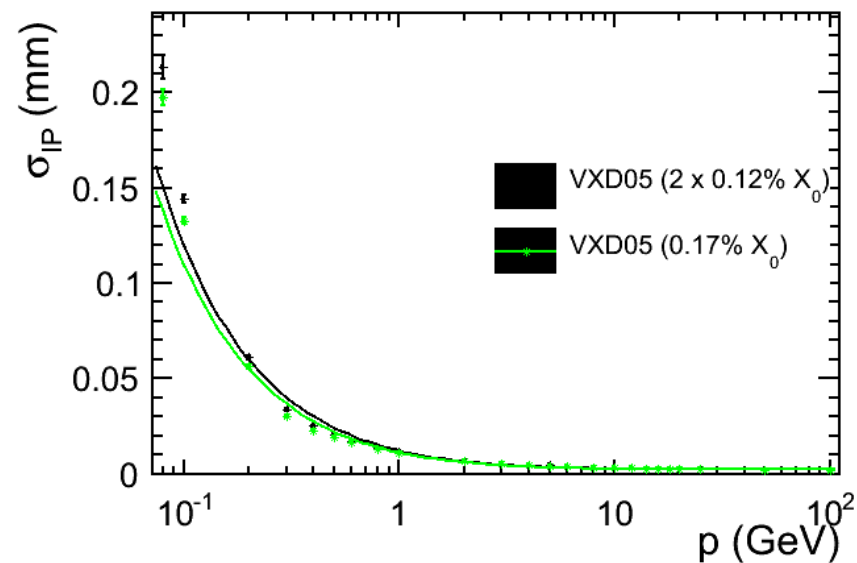


$$\text{VXD05} = 2 \times \text{VXD03}$$

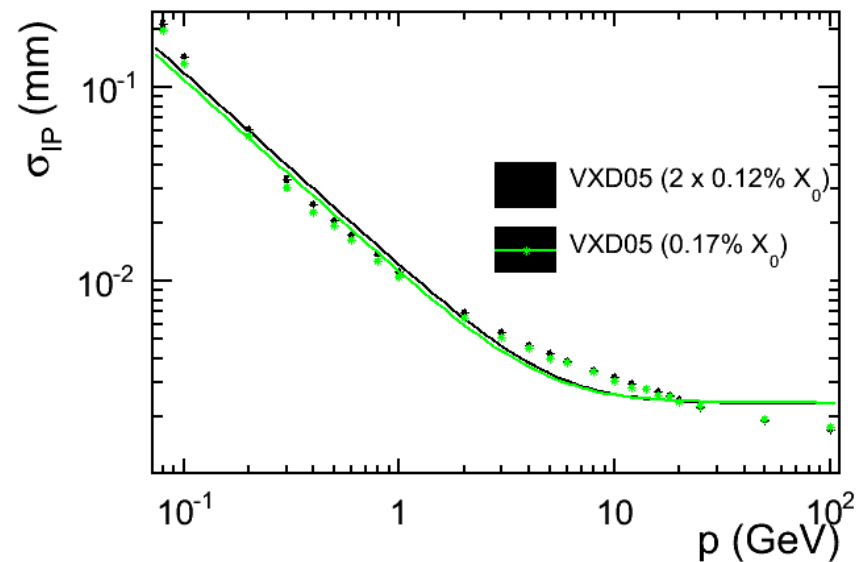
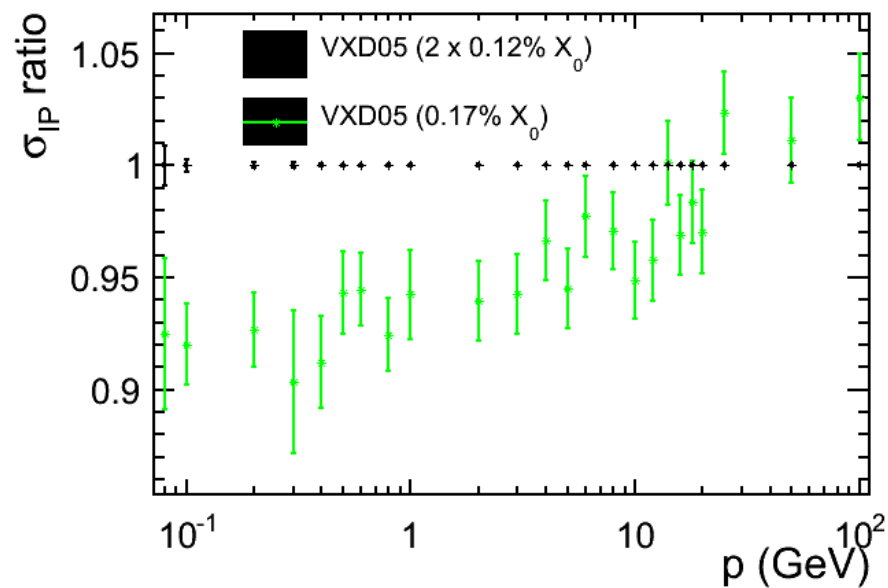


2 x single layer: radiation length is twice as for VXD03
~2 x 0.11% X_0 /layer instead of ~ 0.16 % X_0 /layer

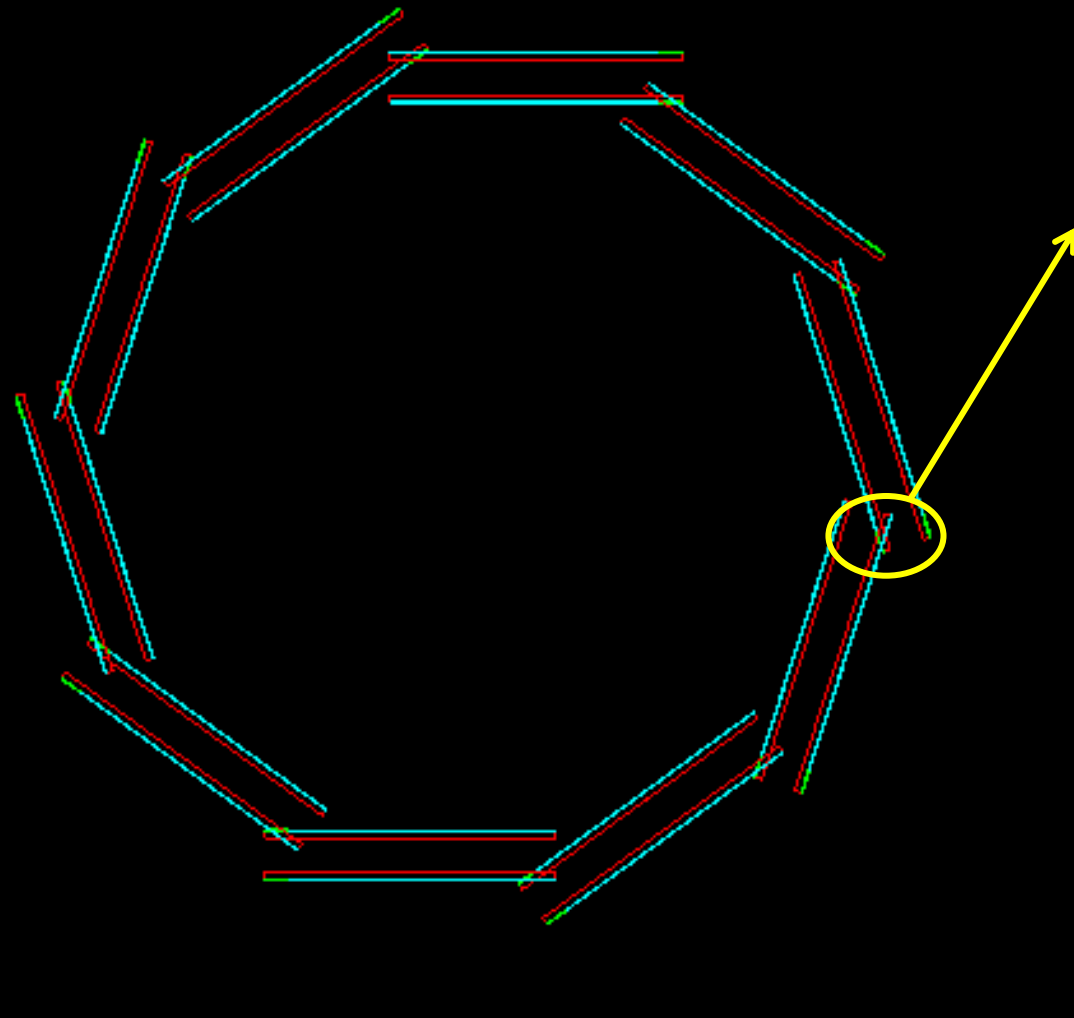
Impact parameter resolution



$\mu @ \theta = 85^\circ$



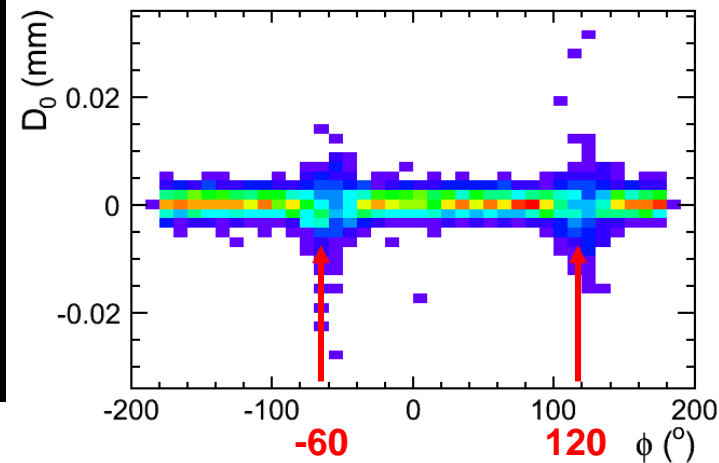
VXD05: entangled volumes



entangled sensitive
volumes

more important for SL1

100 GeV μ @ $\theta = 85^\circ$



Plans for 2012

- Correct ladder support thickness for VXD05
- Correct entangled volumes
- ...

Gear

VXD05

```
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VXD03

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