

IDR plots (ver.0)

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Proposed plots for LCFIPlus (after discussion w/ Remi and developers)

Vertexing:

- Primary vertex resolution
 - Make profile of Z and R resolutions versus n tracks (for Large and Small): 2 plots with 2 curves each
- Secondary vertex:
 - Transverse and longitudinal resolution VS MC vertex distance using c samples (for Large and Small): 2 plots with 2 curves each

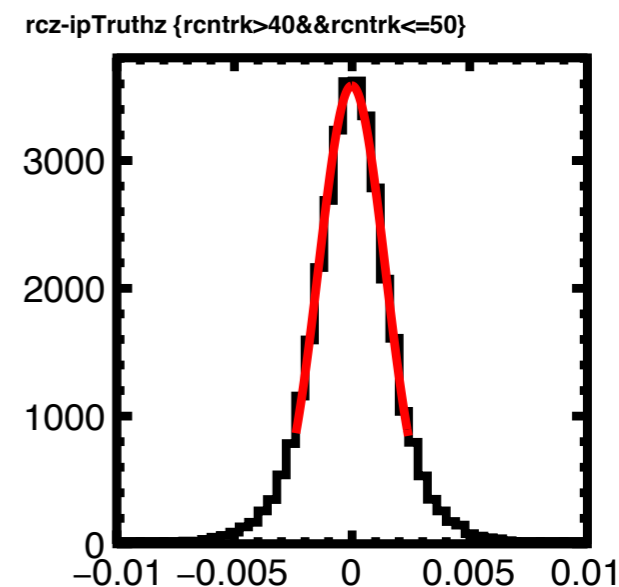
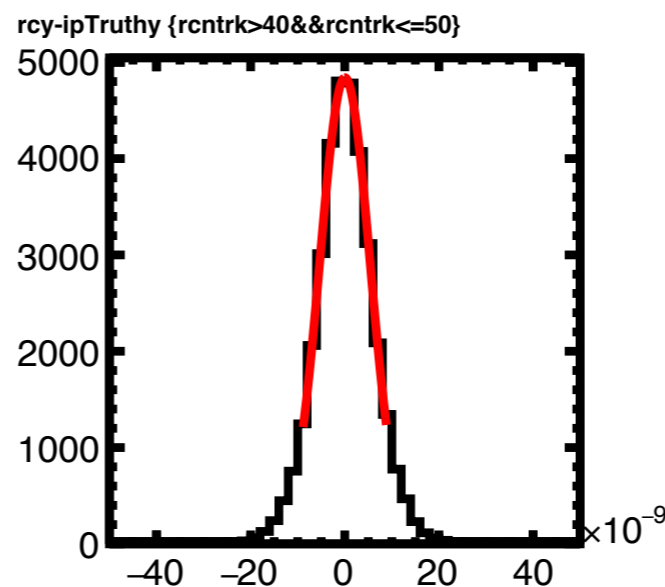
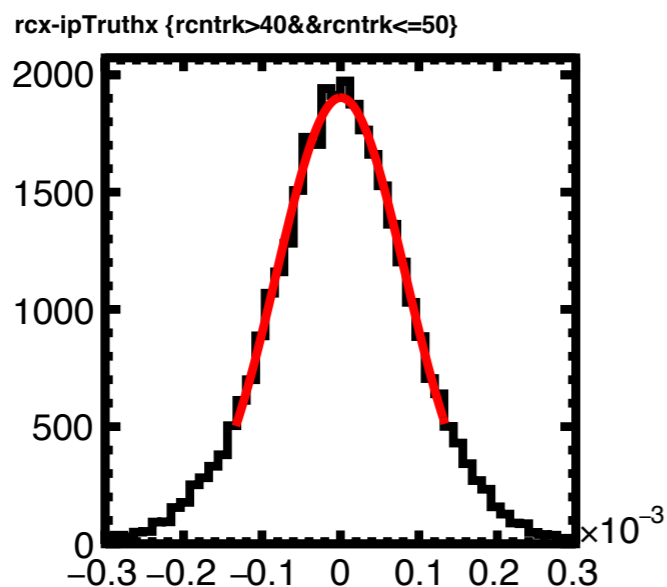
Flavour tagging:

- B tag background rate (6 jets), 4 curves (on 1 plot)
 - w/ c bkg Large
 - w/ c bkg Small
 - w/ uds bkg Large
 - w/ uds bkg Small
- C tag background rate (6 jets): 4 curves (on 1 plot)
 - w/ b bkg Large
 - w/ b bkg Small
 - w/ uds bkg Large
 - w/ uds bkg Small

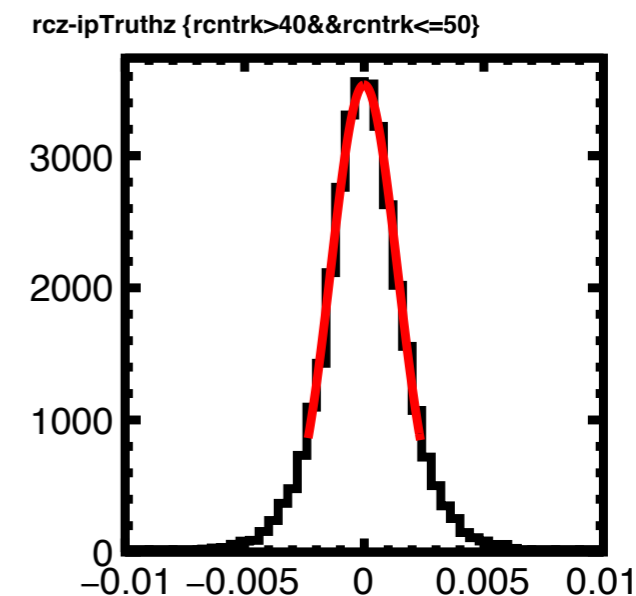
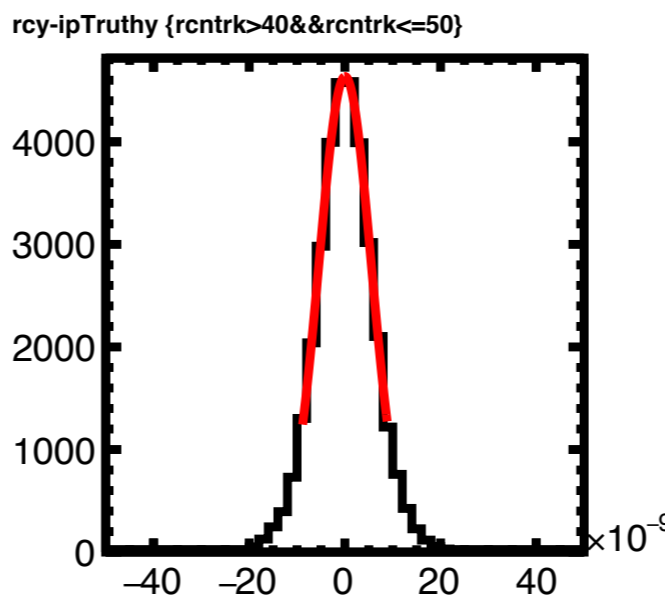
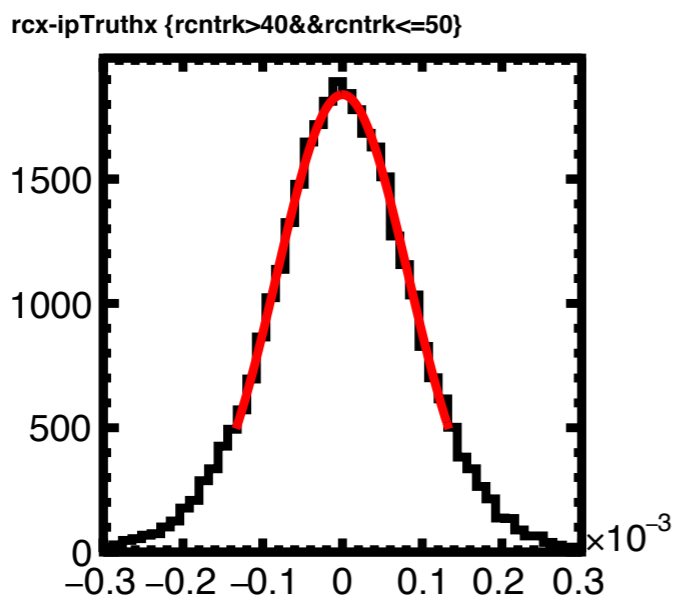
Residual for primary vertex position

example: $40 < n_{\text{tracks}} \leq 50$

L



S



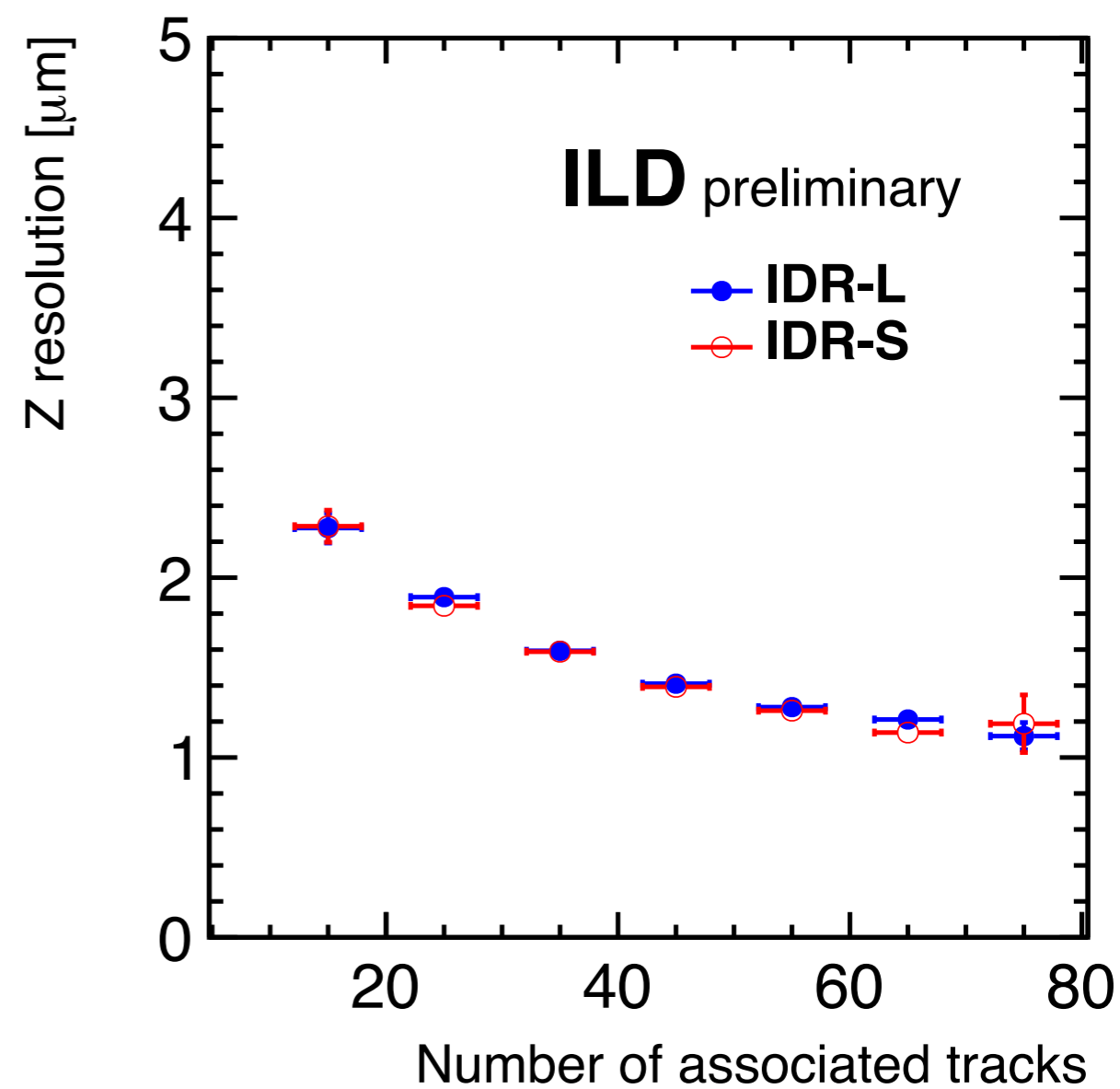
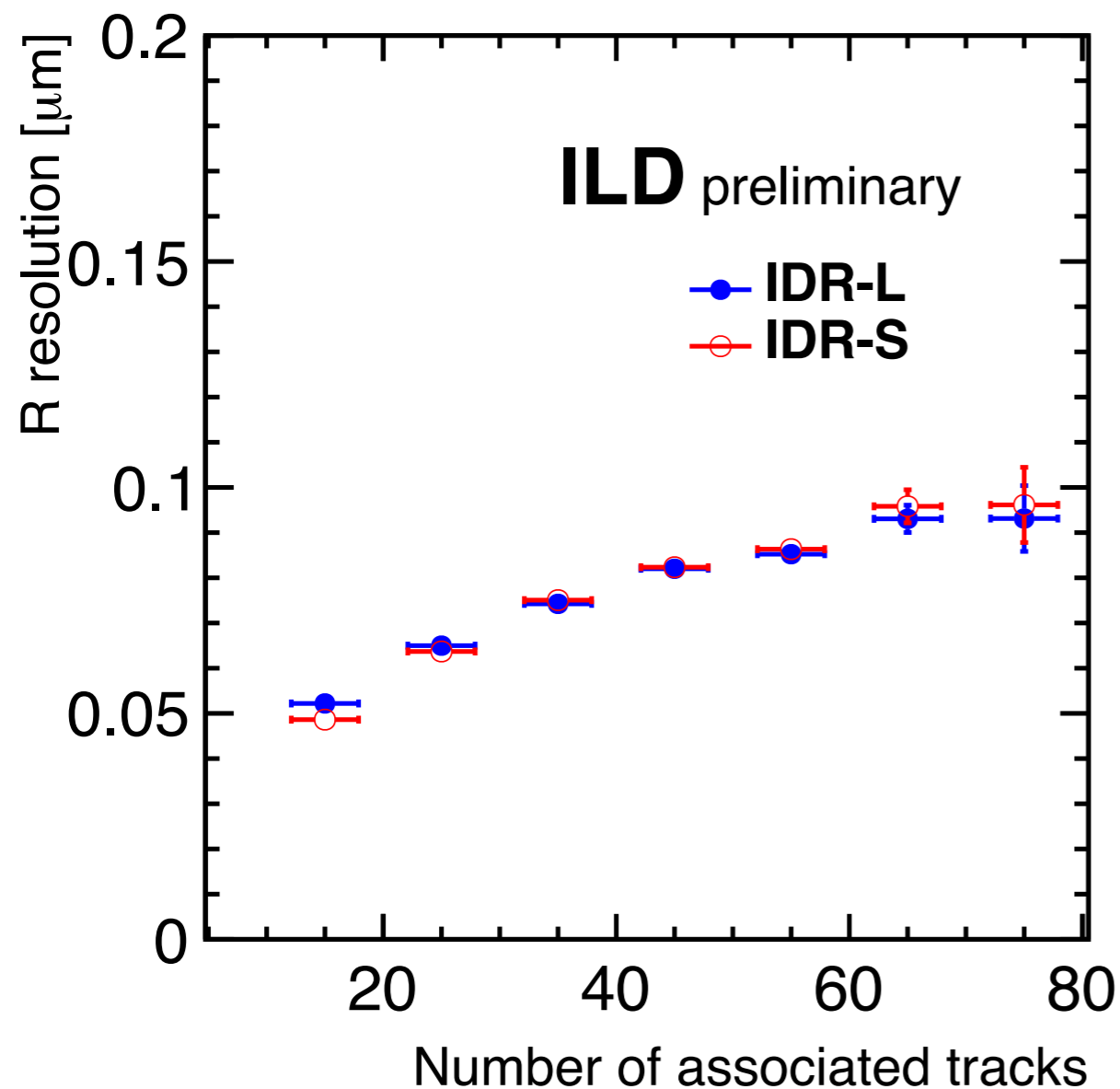
x

y

z

Plot $\sigma_R(=\sqrt{(\sigma_x^2+\sigma_y^2)})$, σ_z for each ntrack range.

PrimaryVertex (summary)

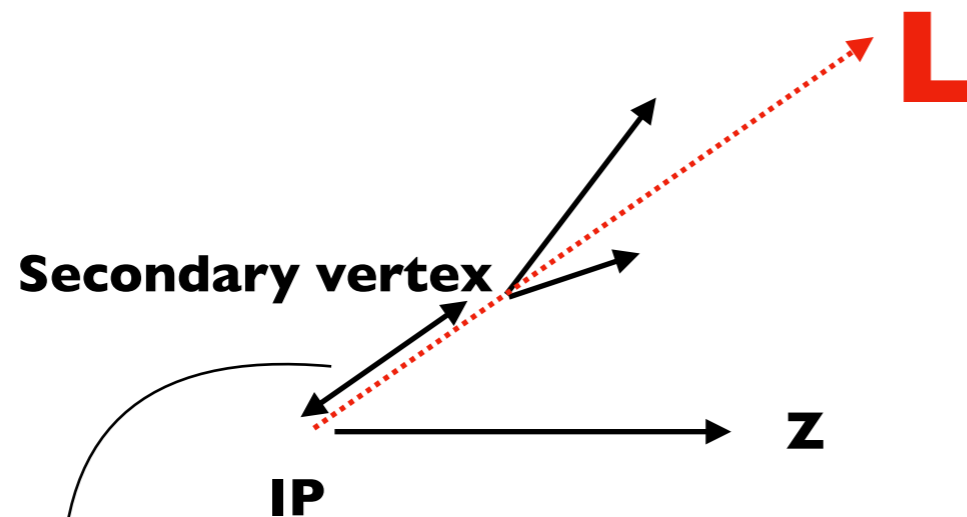


Z res. looks to behave reasonably.

Why R res. looks different? Due to relatively strong constraint?

Secondary vertex

New : Define axis (L) along flight direction.



$$\mathbf{T1} := \mathbf{Z} \times \mathbf{L}$$

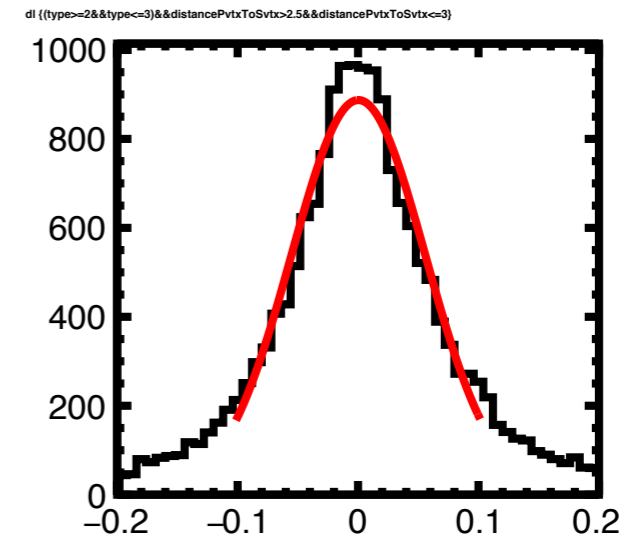
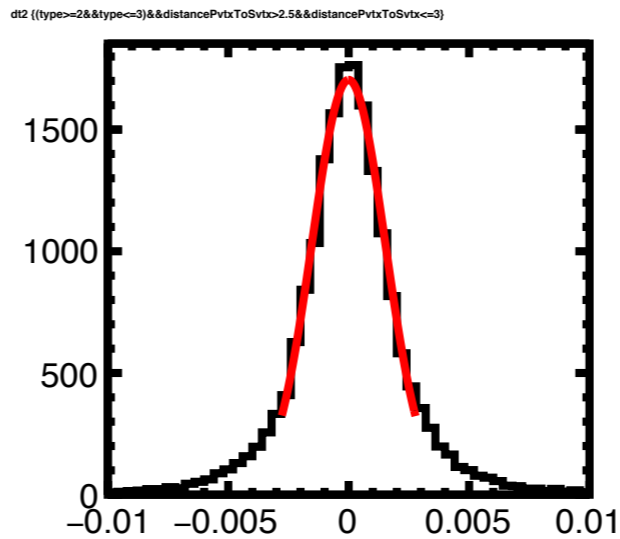
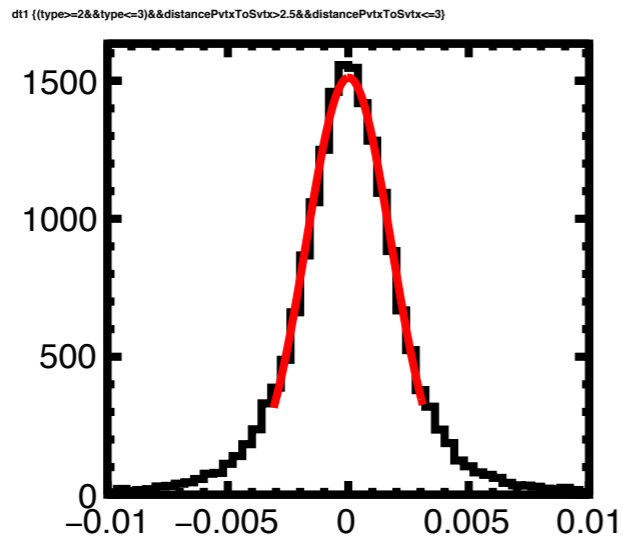
$$\mathbf{T2} := \mathbf{L} \times \mathbf{T1}$$

Distance between IP and secondary vertex (“Distance from IP” in following plots).

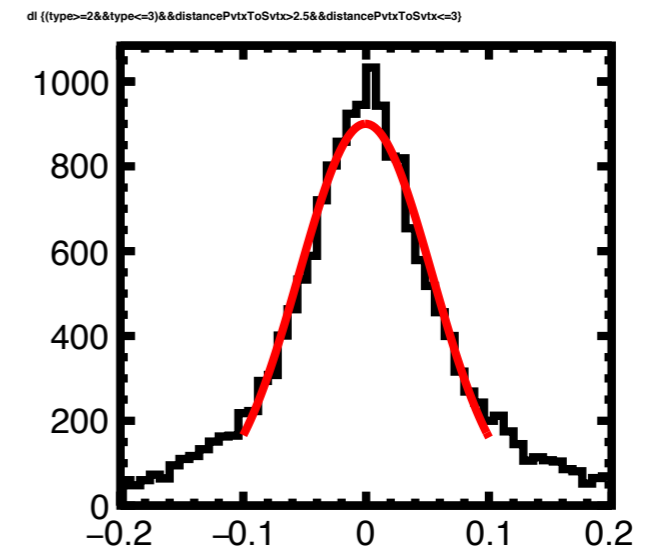
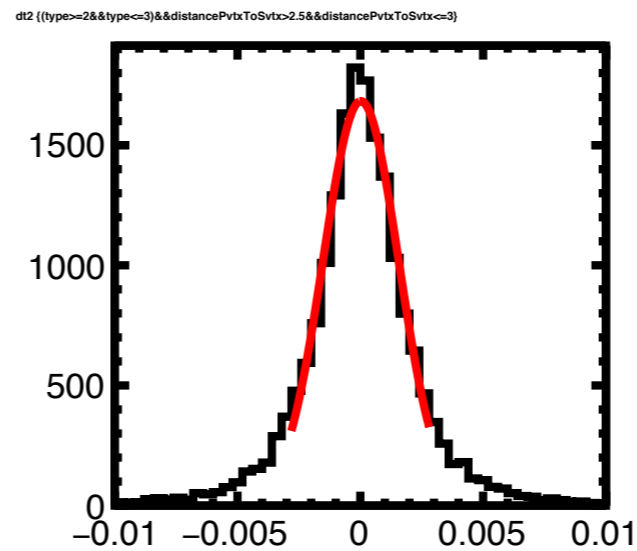
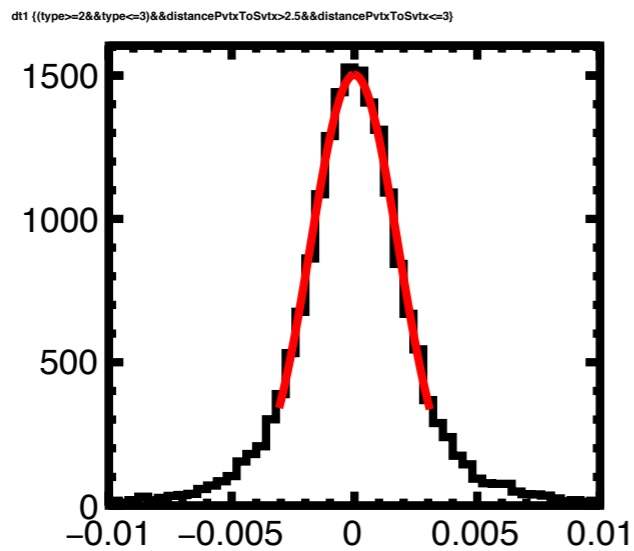
Residual for secondary vertex position

example: $2.5 < \text{distance from IP [mm]} \leq 3.0$

L



S

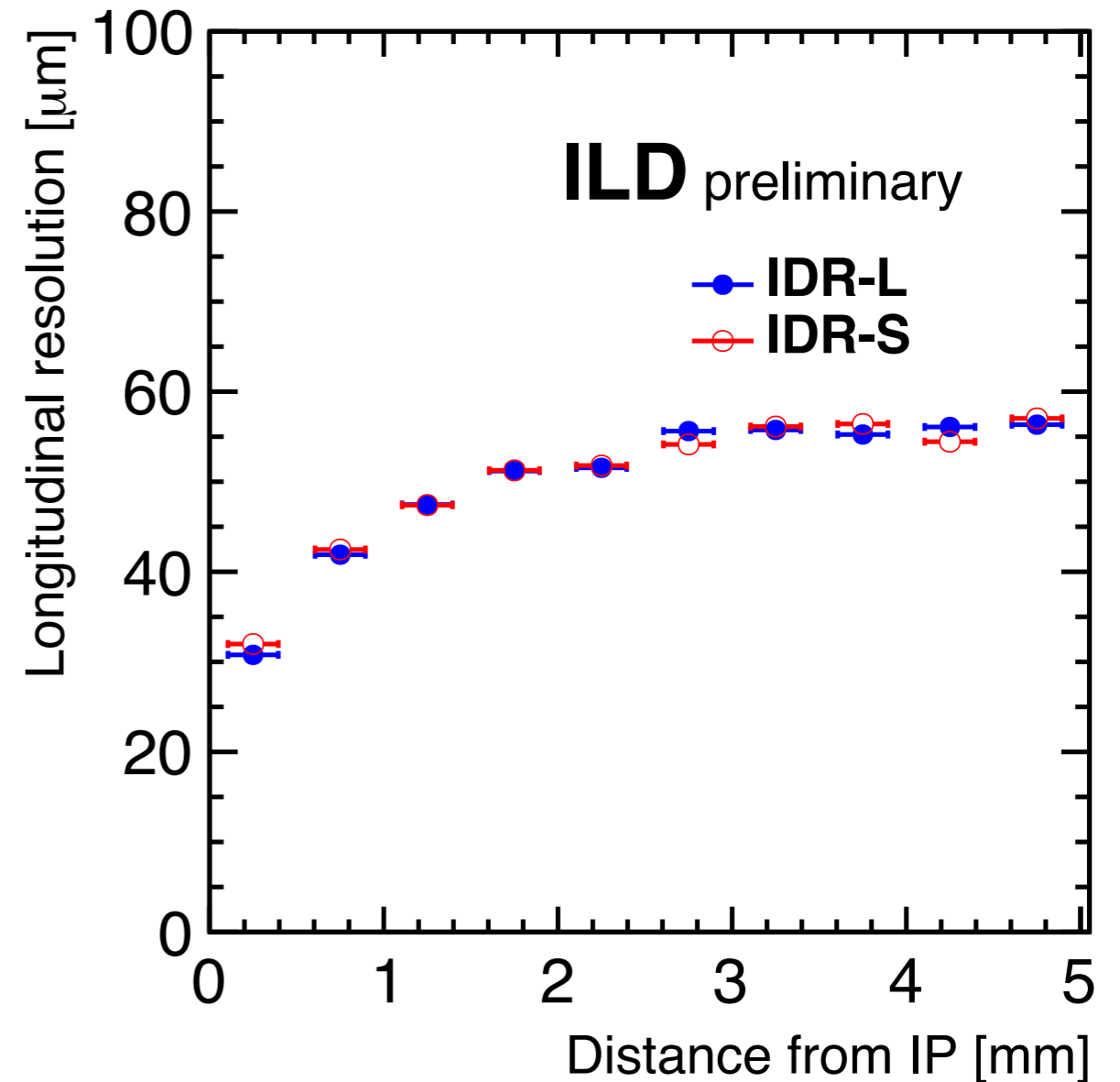
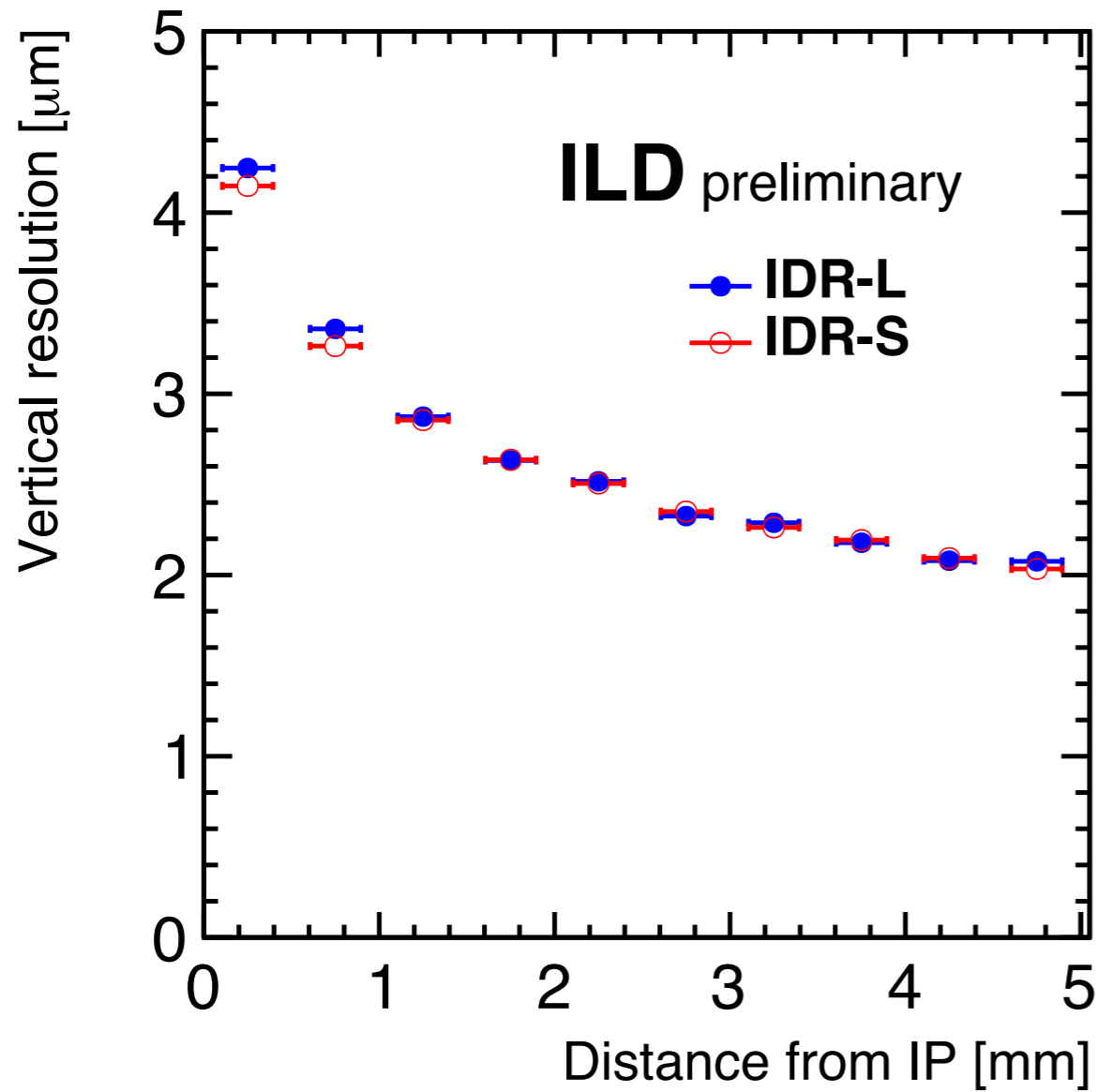


T1

T2

L

Secondary Vertex



**Interestingly the tendency look opposite.
Due to momentum of B(C) hadrons?**

Flavour tag

