Beam Tilt & TFC: Which z value for correction?

1. **Standing plan**: correct using barrel of innermost hit
2. **Alternate**: also use barrel-crossing pattern

Compare means of

\[ \delta z = \text{track} - \text{barrel center} \]

for both 1 and 2.
ZH->vvbb

no beam tilt

6 for barrels

3 summary

no tilt, expect

r =0

φ = random
Tilt sample

- \( x, y = 3 \mu m/cm \)

so expect \( m_r = 4.24 \mu m/cm \)
Tilt sample, again

after applying barrel correction

expect

\[ m_r = 0 \, \text{\(\mu\)m/cm} \]

\[ \phi = \text{random} \]

find,

\[ m \text{ consistent w/C} \]

Slightly better b
Tilt sample, again

after applying barrel+layer correction

expect \( m_r = 0 \, \mu m/cm \)
\( \phi \) = random

find,
\( m \) consistent w/0!
Slightly better b
Conclusions

- either correction method alone beats none
- negligible differences between the two methods
  - similar fit probabilities for flatness
  - identical impact parameter widths
- barrel-only slightly better
  - slightly less physics dependence
  - simpler

So stick with barrel only correction...