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

$\delta z = \text{track - barrel center}$

for both 1 and 2.
ZH→vvbb
no beam tilt

6 for barrels

3 summary
no tilt, expect
r = 0
φ = random
Tilt sample
(Lorenzo)
\[ x, y = 0.5 \text{ m/cm} \]

so expect
\[ m_r = 0.7 \text{ m/cm} \]
Tilt sample, again

after applying barrel correction

expect
\[ m_r = 0 \, \mu m/cm \]
\[ \phi = \text{random} \]

find,
\[ m \text{ consistent w/O!} \]
Slightly better b
Tilt sample, again

after applying barrel+layer correction

expect \( m_r = 0 \mu m/cm \)

\( \phi = \text{random} \)

find,

\( m \) consistent w/ tech

Slightly better
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...