Status update
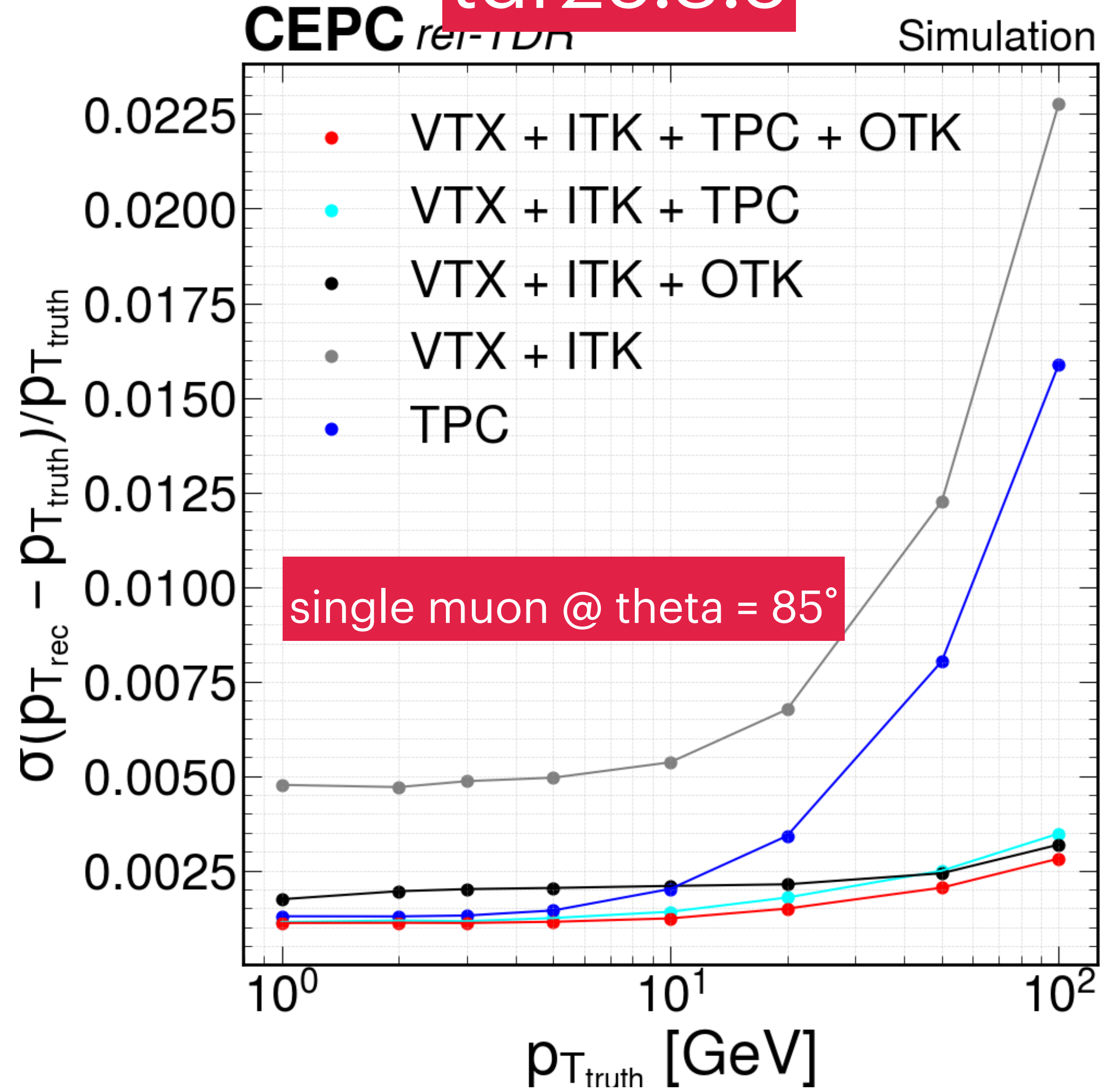
tdr.25.5.0 validation for tracking
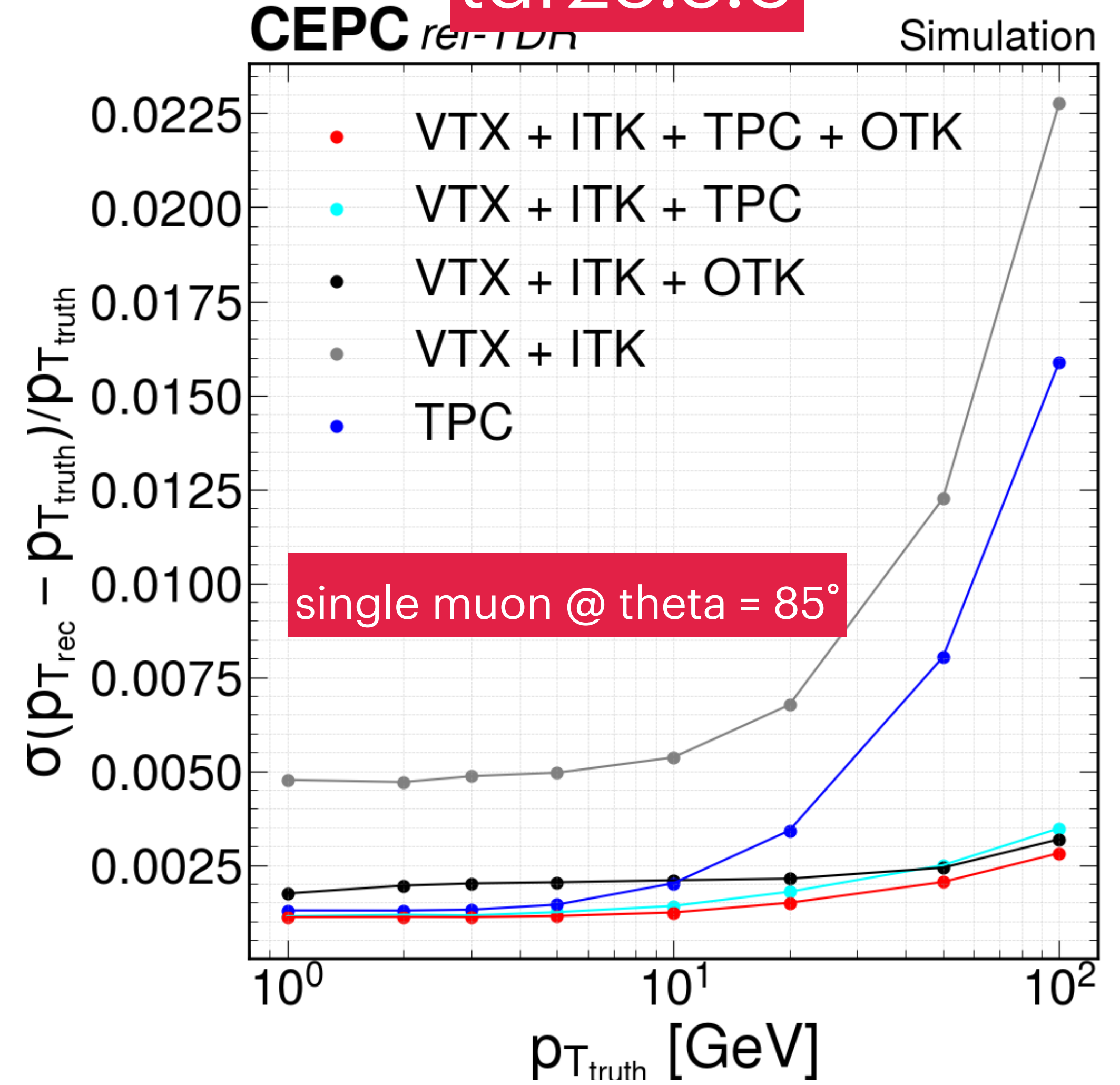
Chenguang Zhang / 26May2025

Resolution

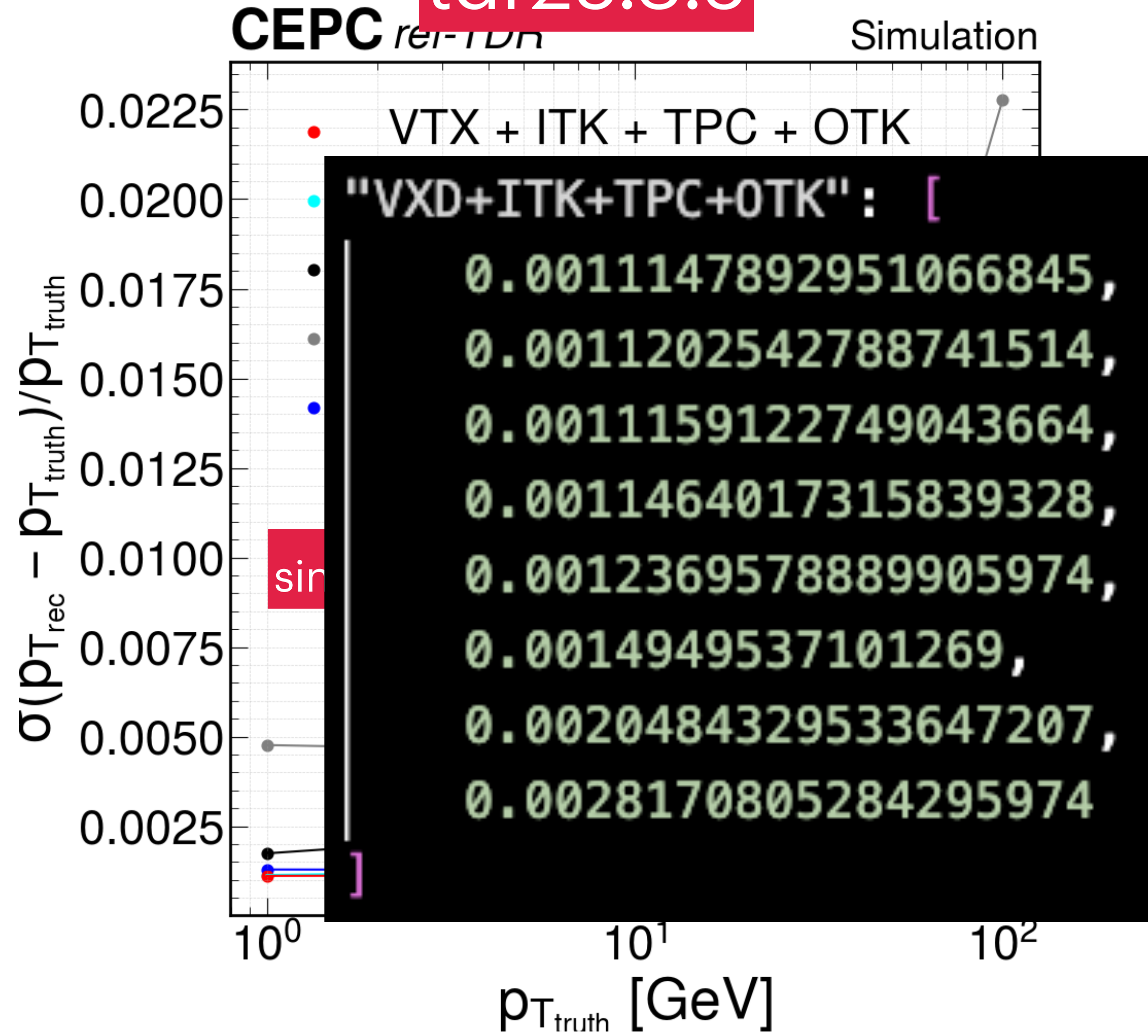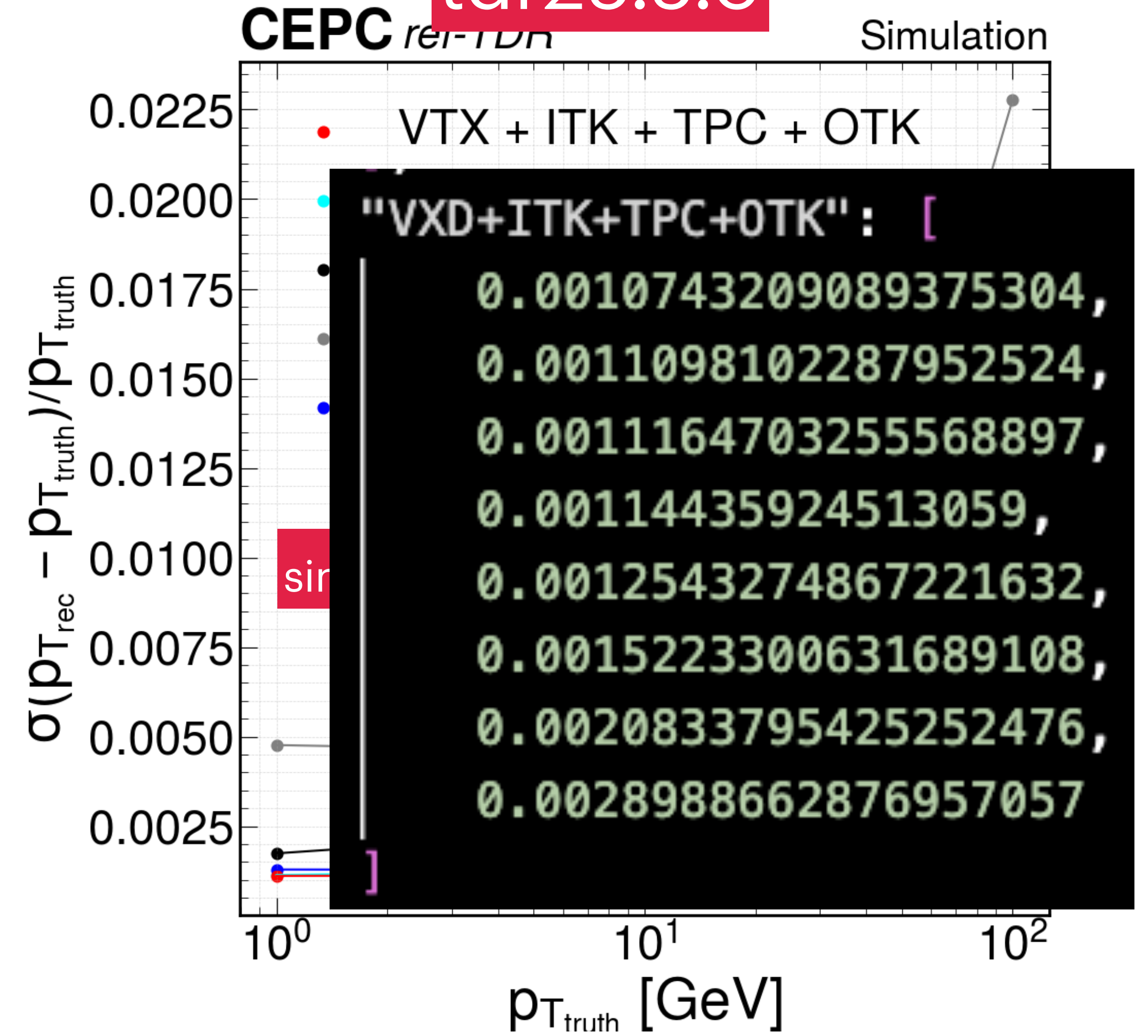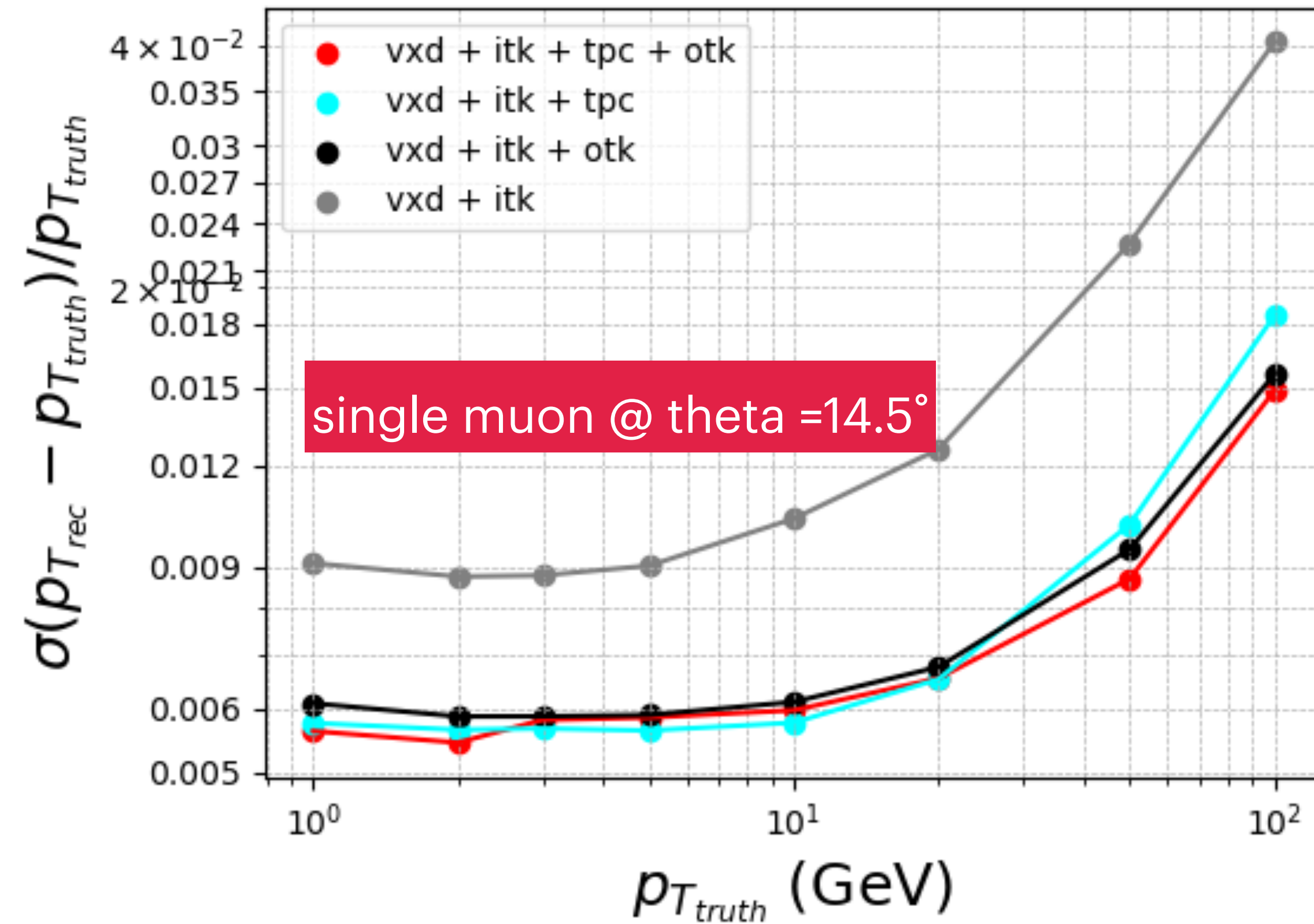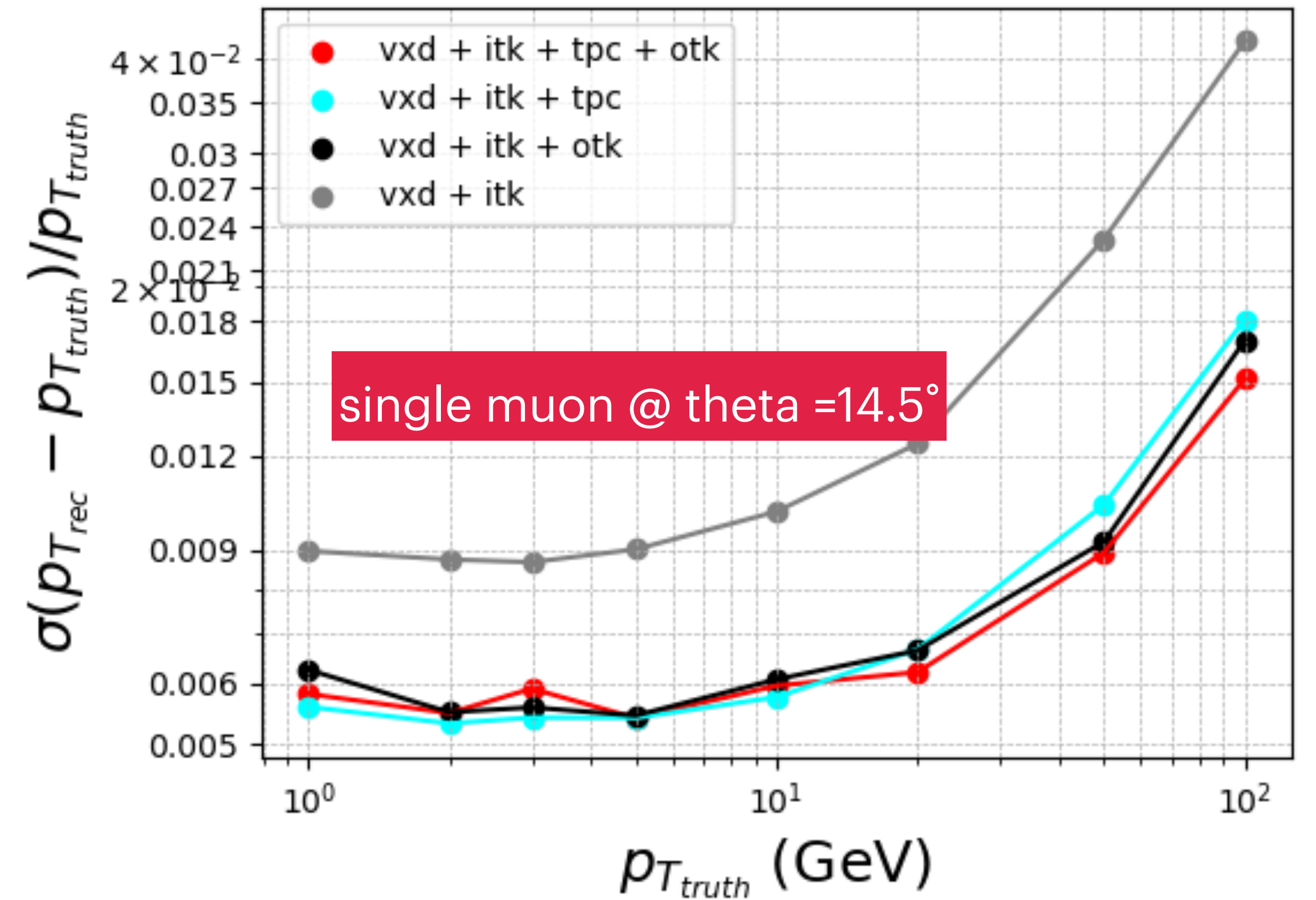
- The performance is stable with the new release

Resolution

- There may be tiny improvements since MR254, which updated the MDI support material, but the impact is not very clear
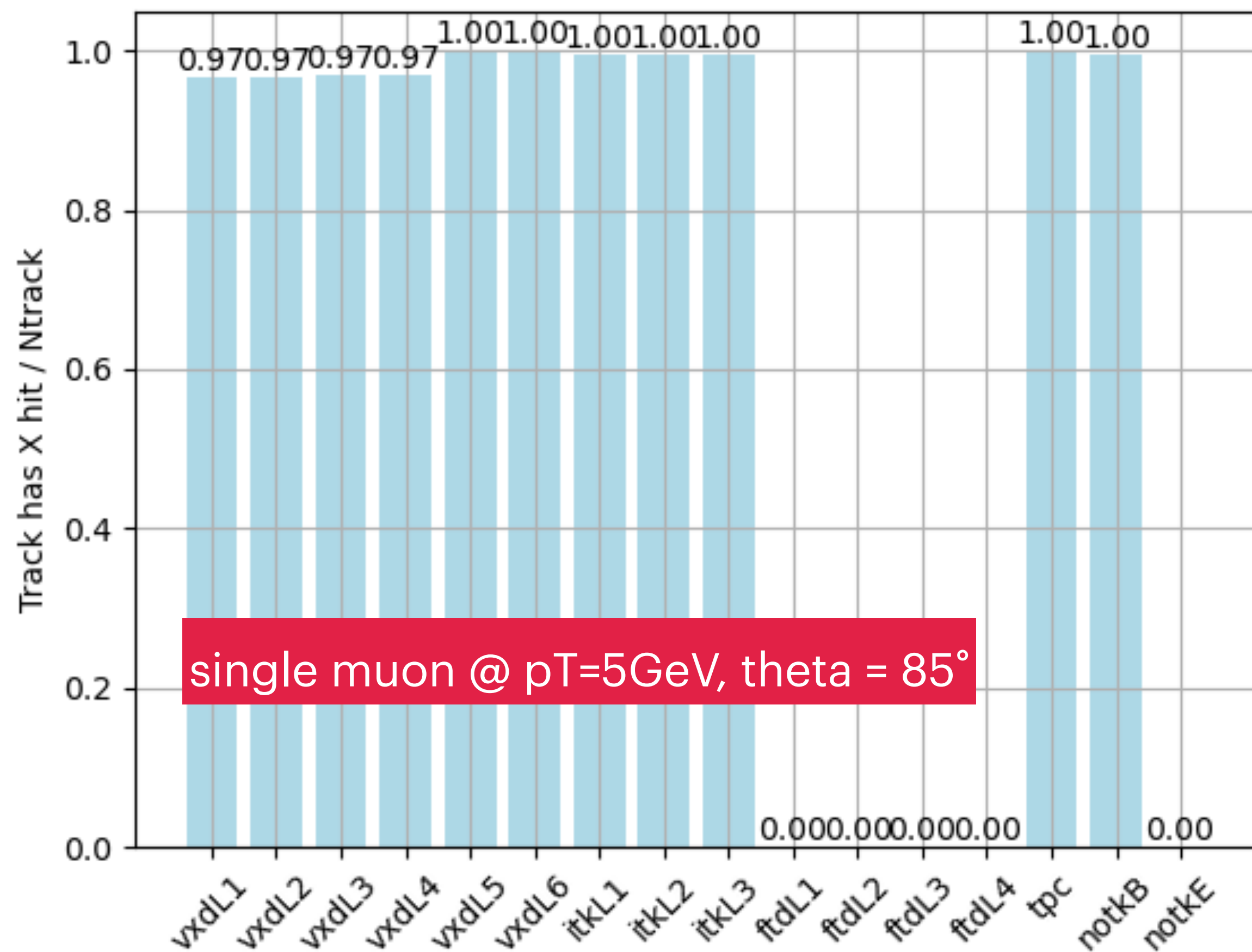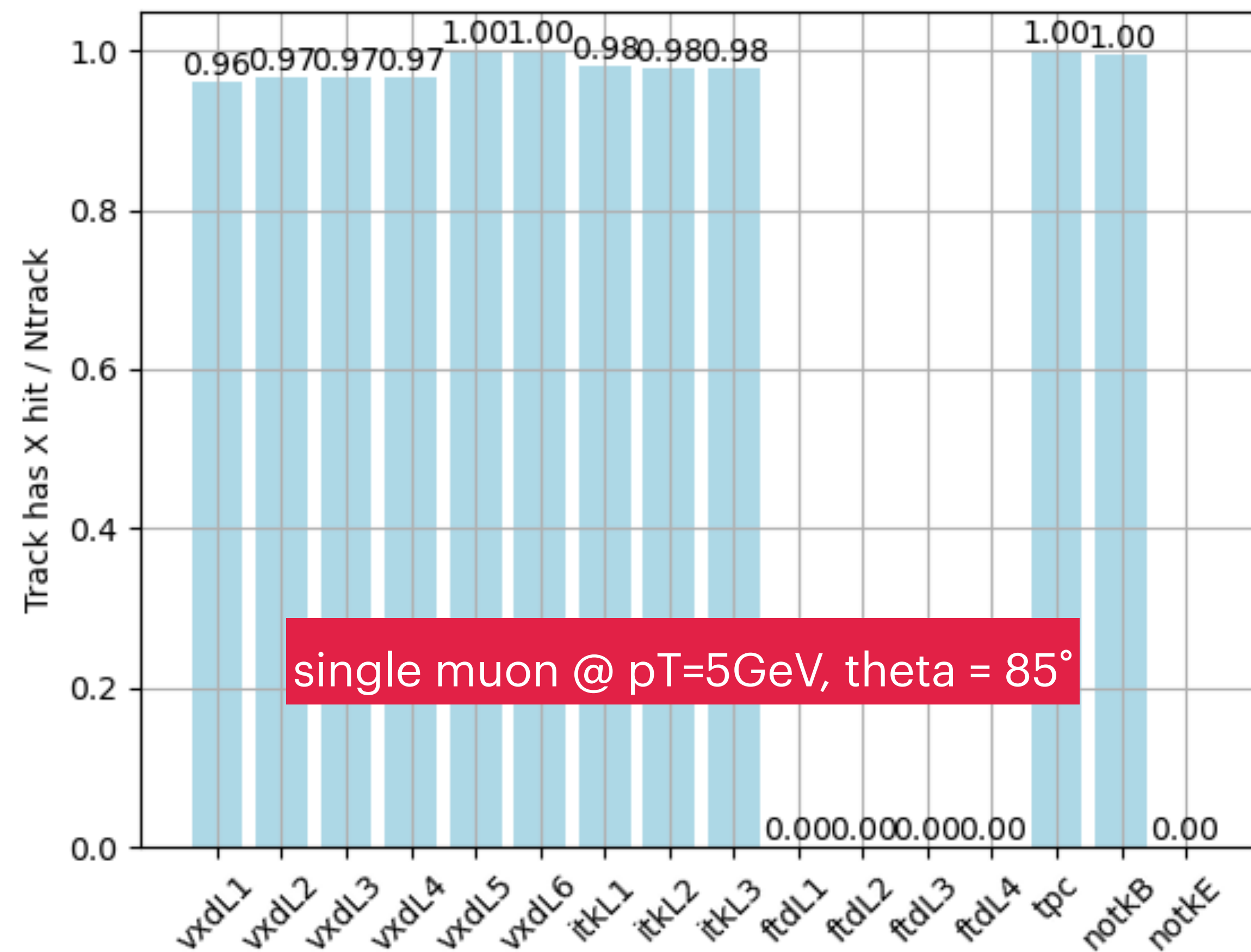
3

Resolution

- Some fits could be further optimised, but this is beyond the scope of this validation
- The tracking performance of the forward region is fine with the new release
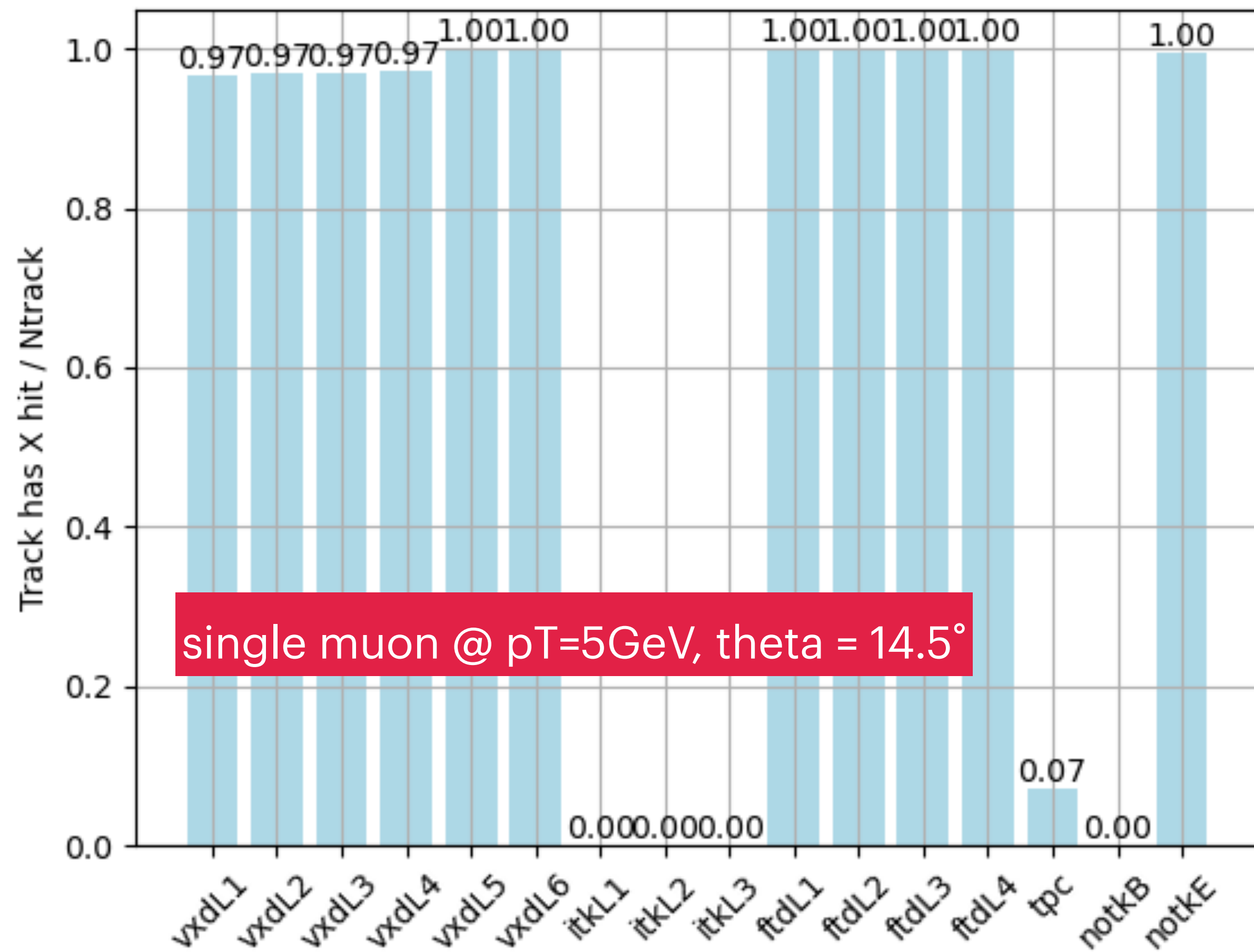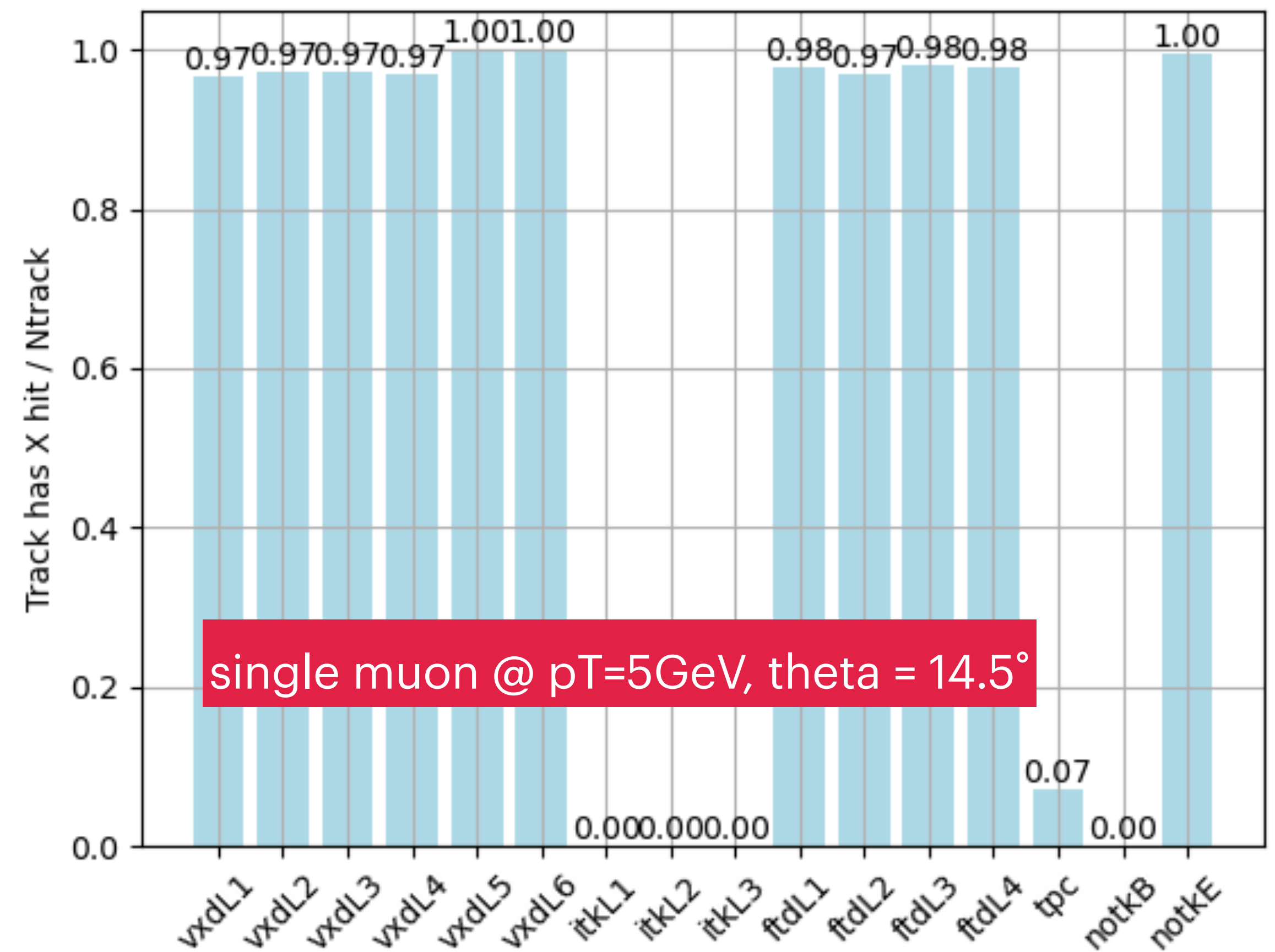
ITKB Hit Efficiency

- In the right plot, VXDL5/6 and OTKB > 0.995
- The hit efficiencies of ITKE layers are reduced due to the MR246 [fix the issue of lacking gap in ITK]
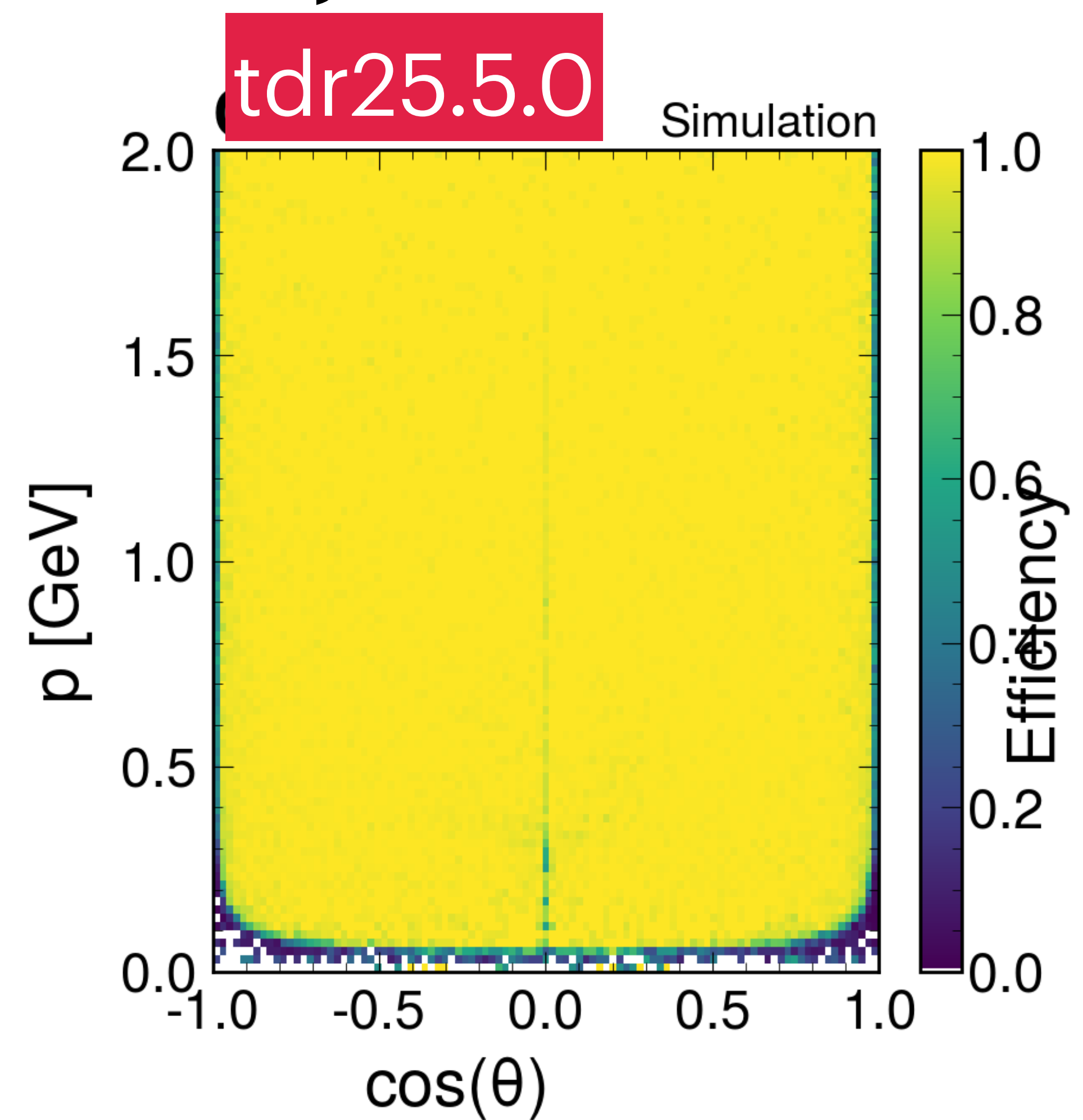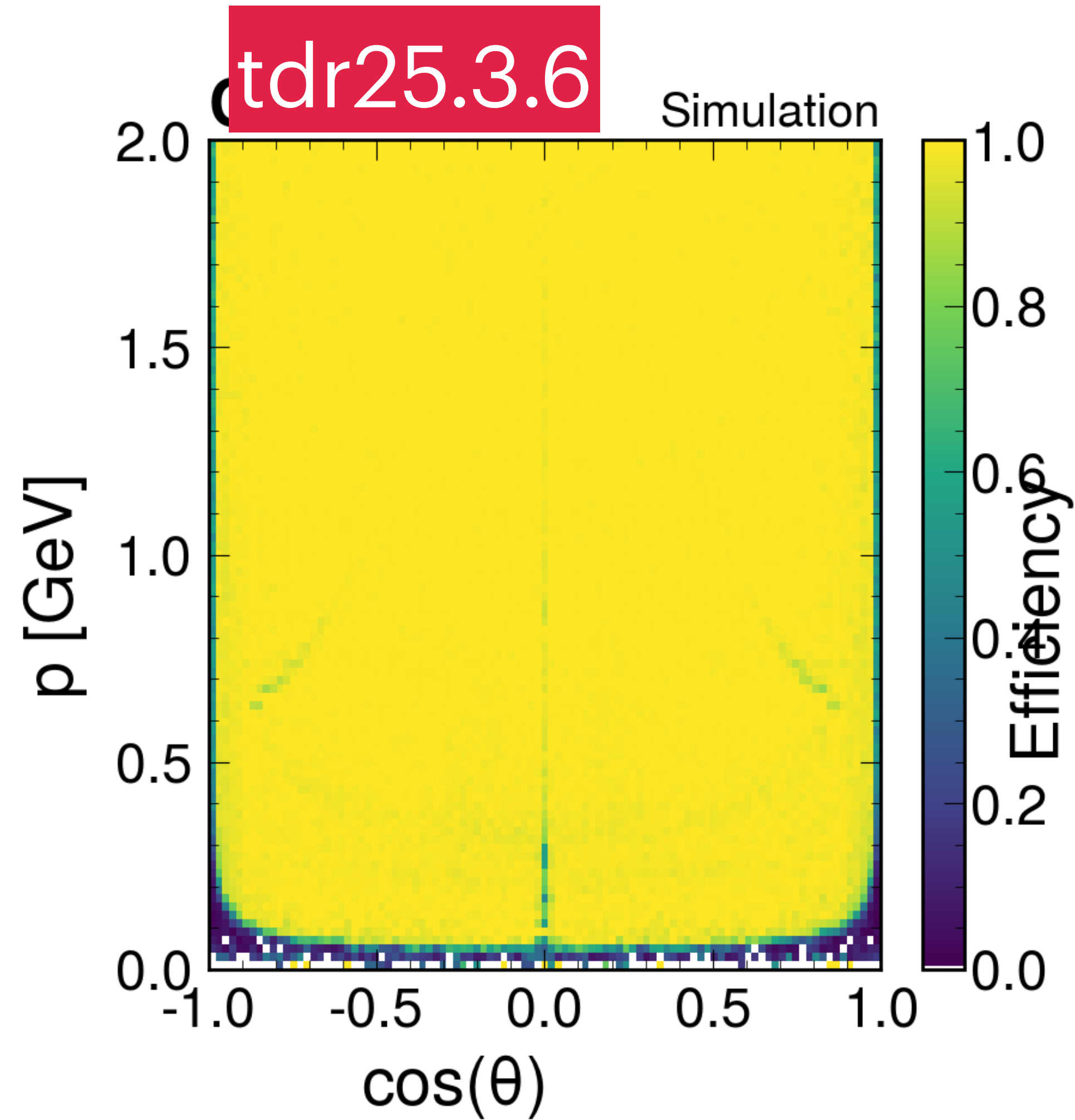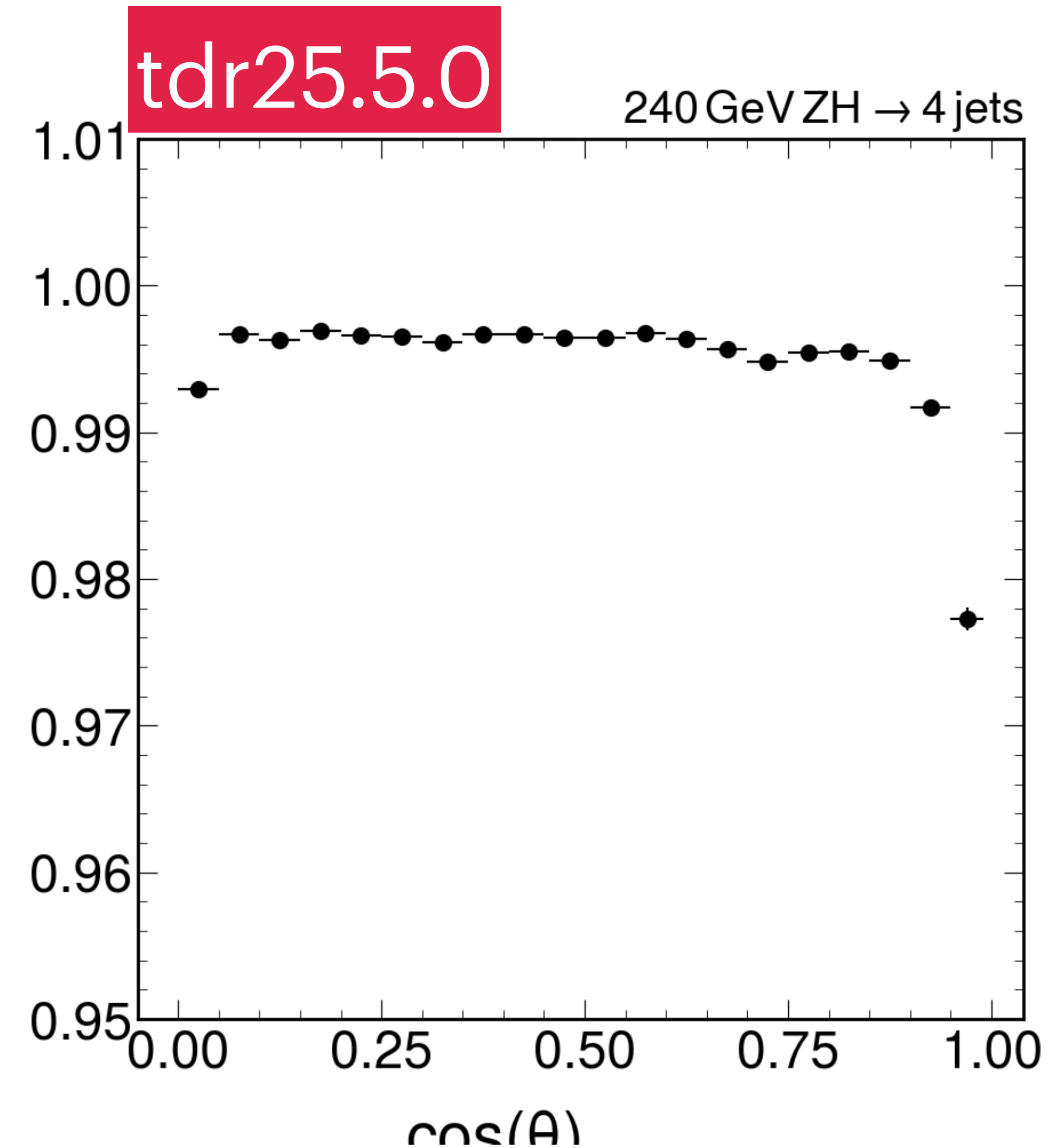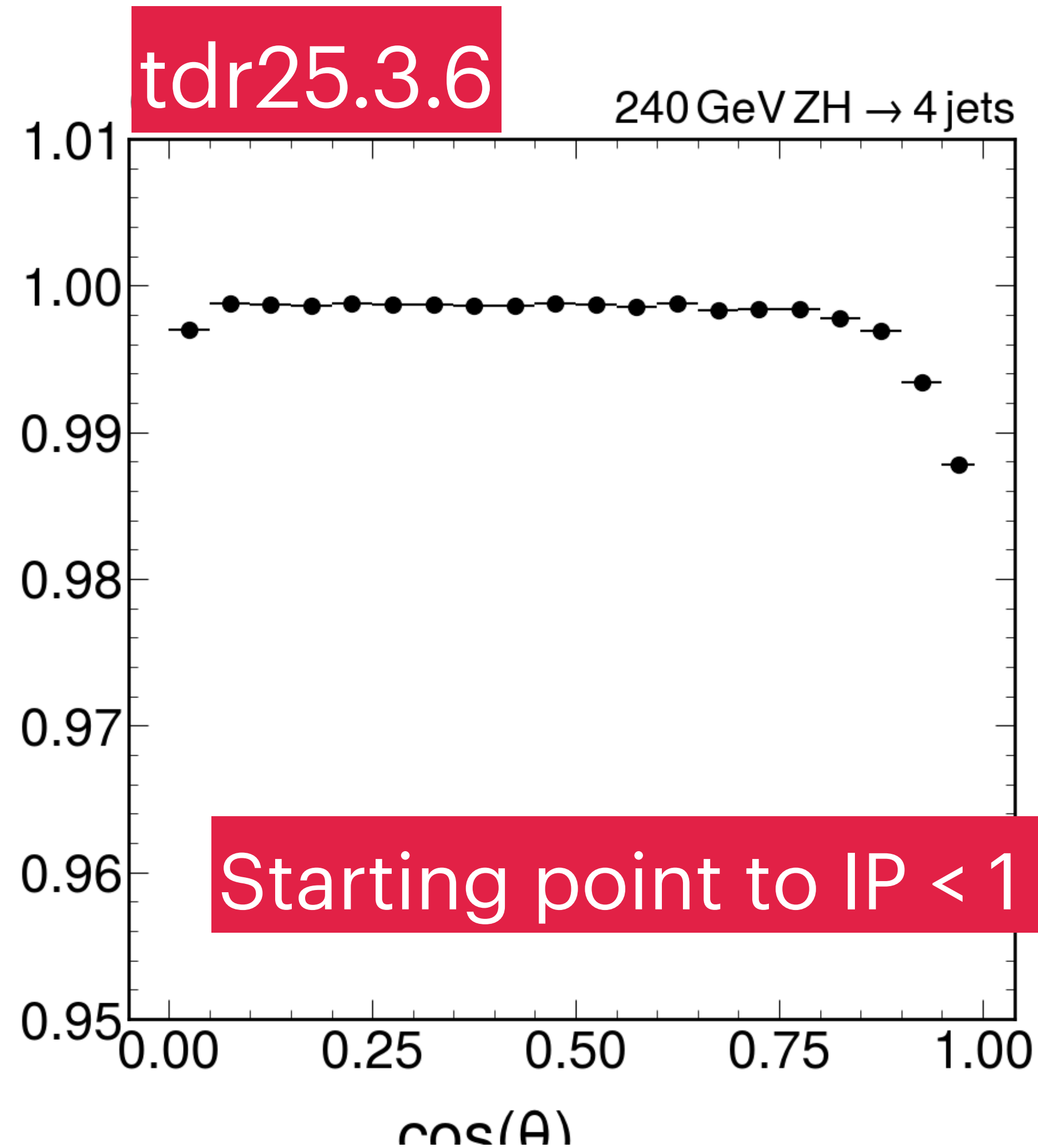
ITKE Hit Efficiency

- In the right plot, VXDL5/6 and OTKE > 0.995

- The hit efficiencies of ITKB layers are reduced due to the MR246

Trk Efficiency

- The inefficiency in certain specific areas was fixed by MR262
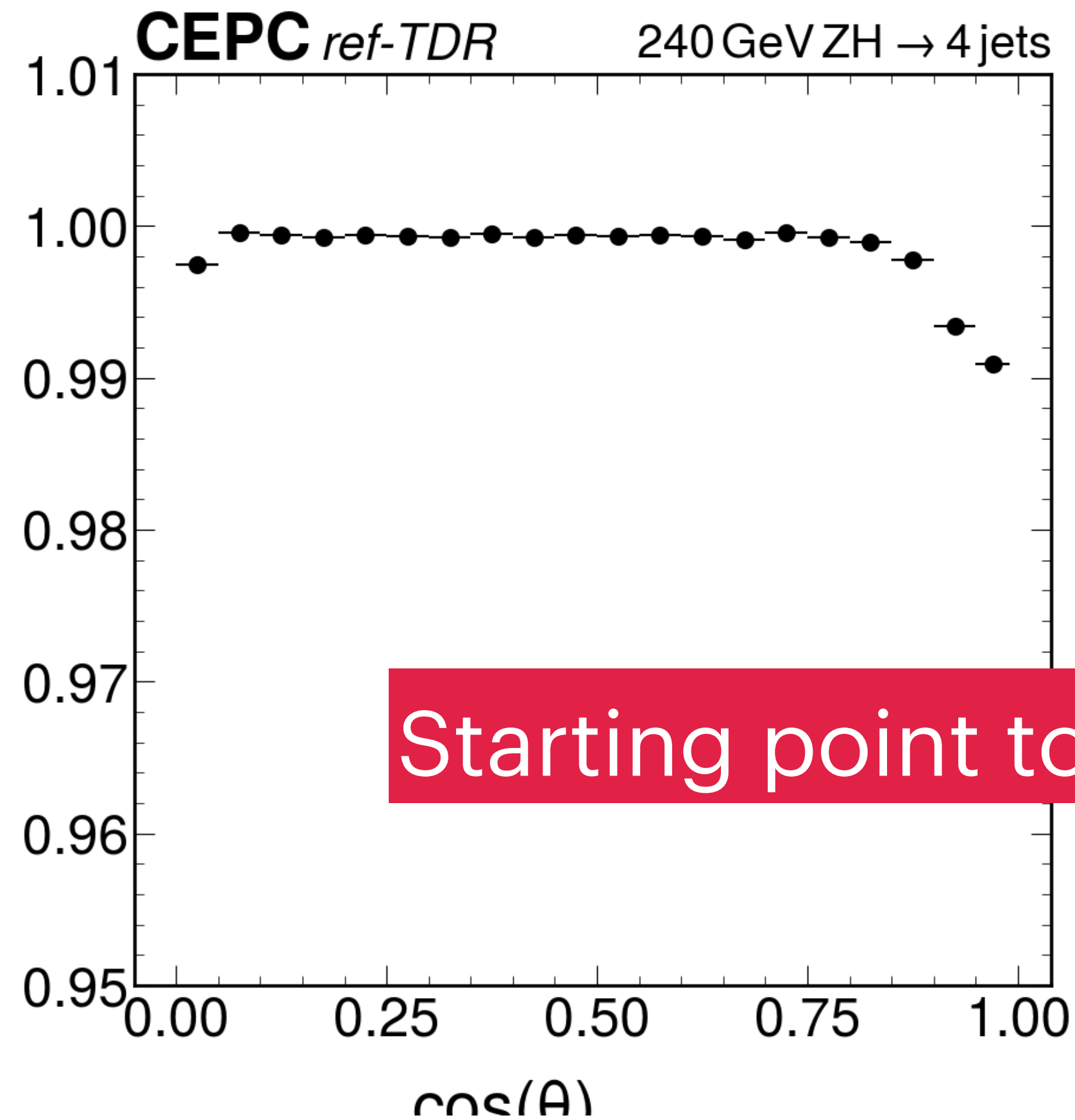
Trk Efficiency

tdr25.3.6 — 240 GeV ZH → 4 jets

Starting point to IP < 1 mm

tdr25.5.0 — 240 GeV ZH → 4 jets

- Global efficiency, 99.77% -> 99.52%

- A detailed synchronisation between the two releases is in progress...

Trk Efficiency

tdr25.3.6

tdr25.5.0

CEPC *ref-TDR*   240 GeV ZH → 4 jets

CEPC *ref-TDR*   240 GeV ZH → 4 jets

Starting point to IP < 1 mm

$\cos(\theta)$

$\cos(\theta)$
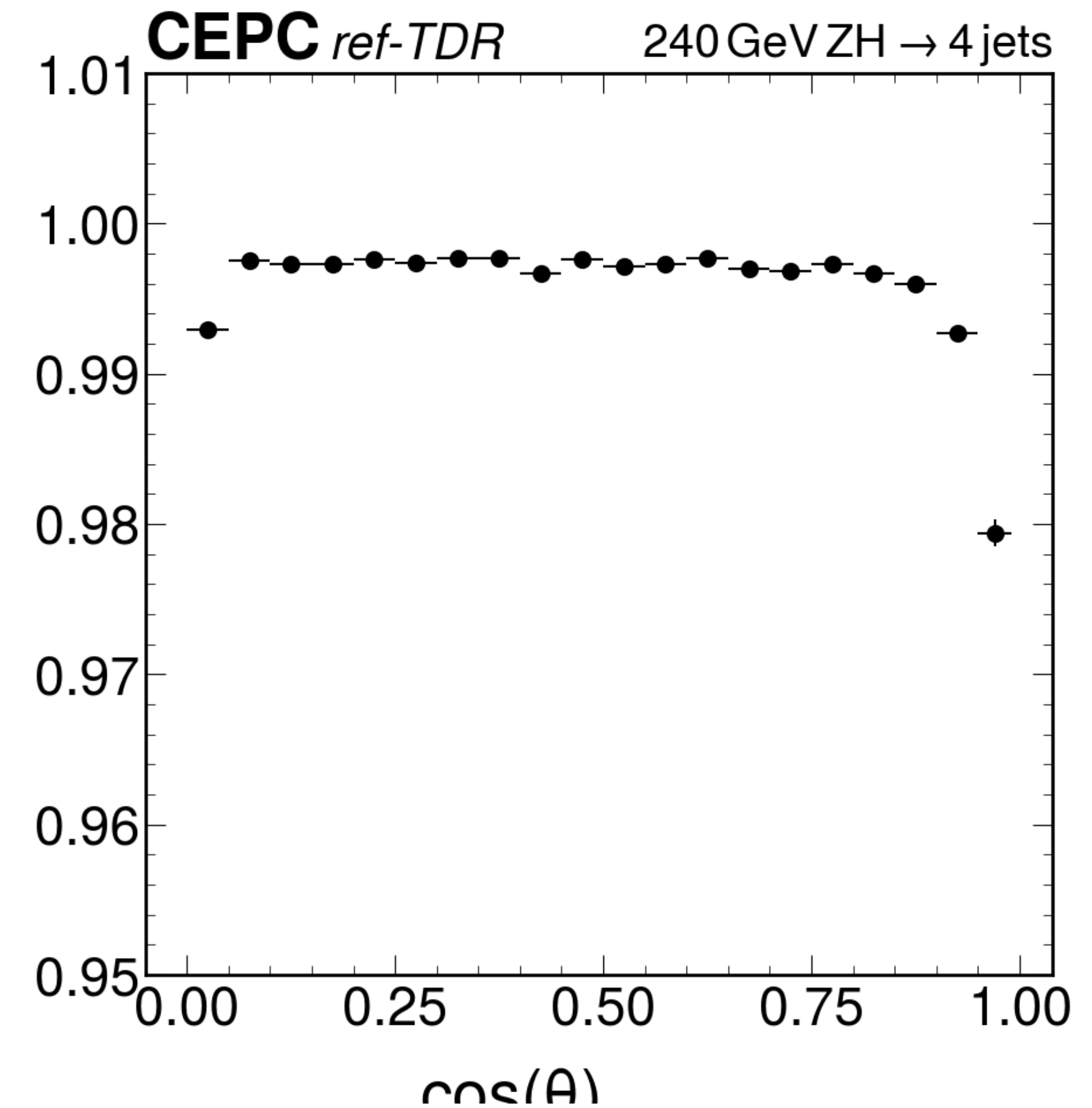
- Global efficiency, 99.84% -> 99.61%

- A detailed synchronisation between the two releases is in progress...

Summary

- The tracking performance with tdr.25.5.0 has been validated