CEPC JOI

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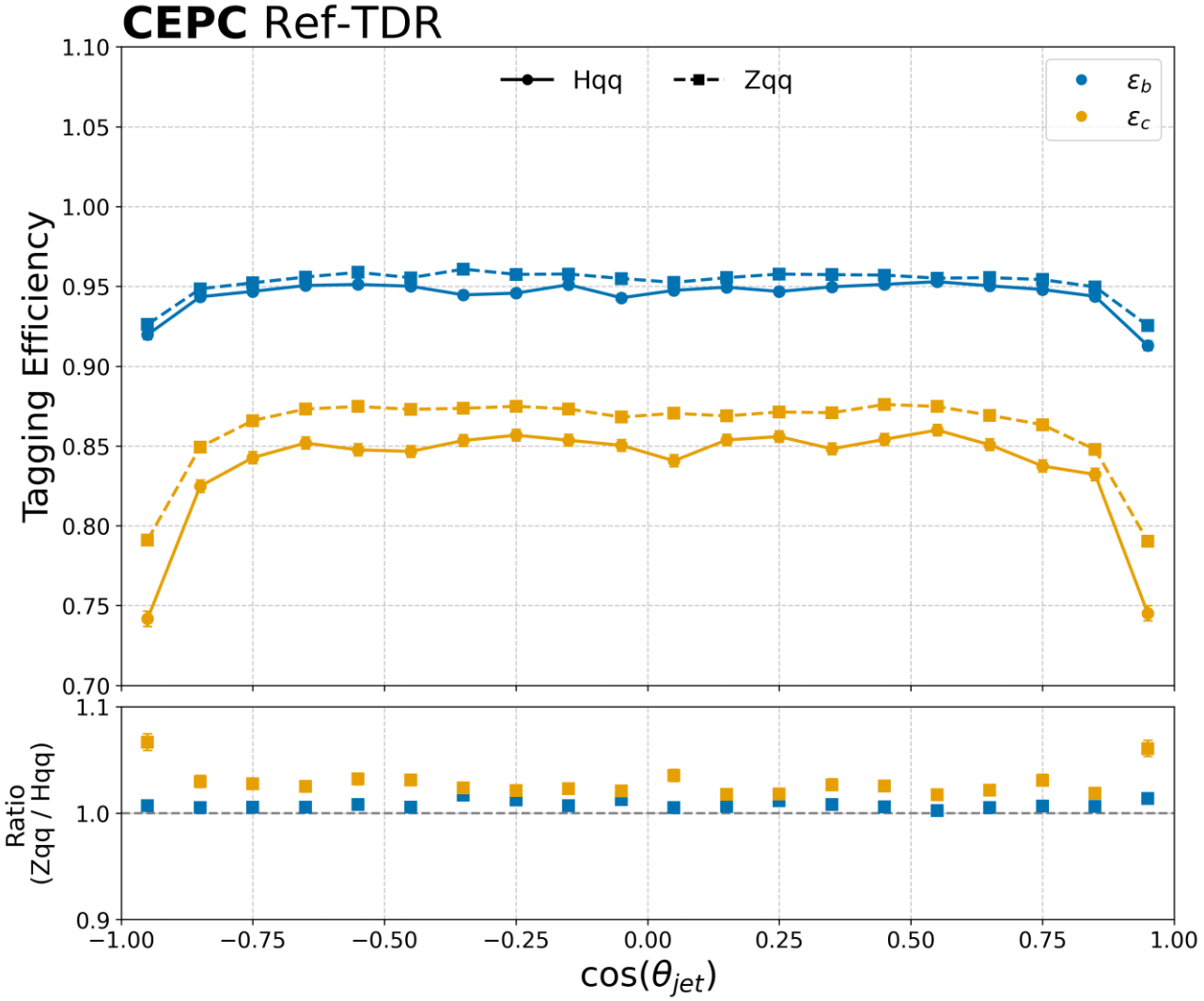
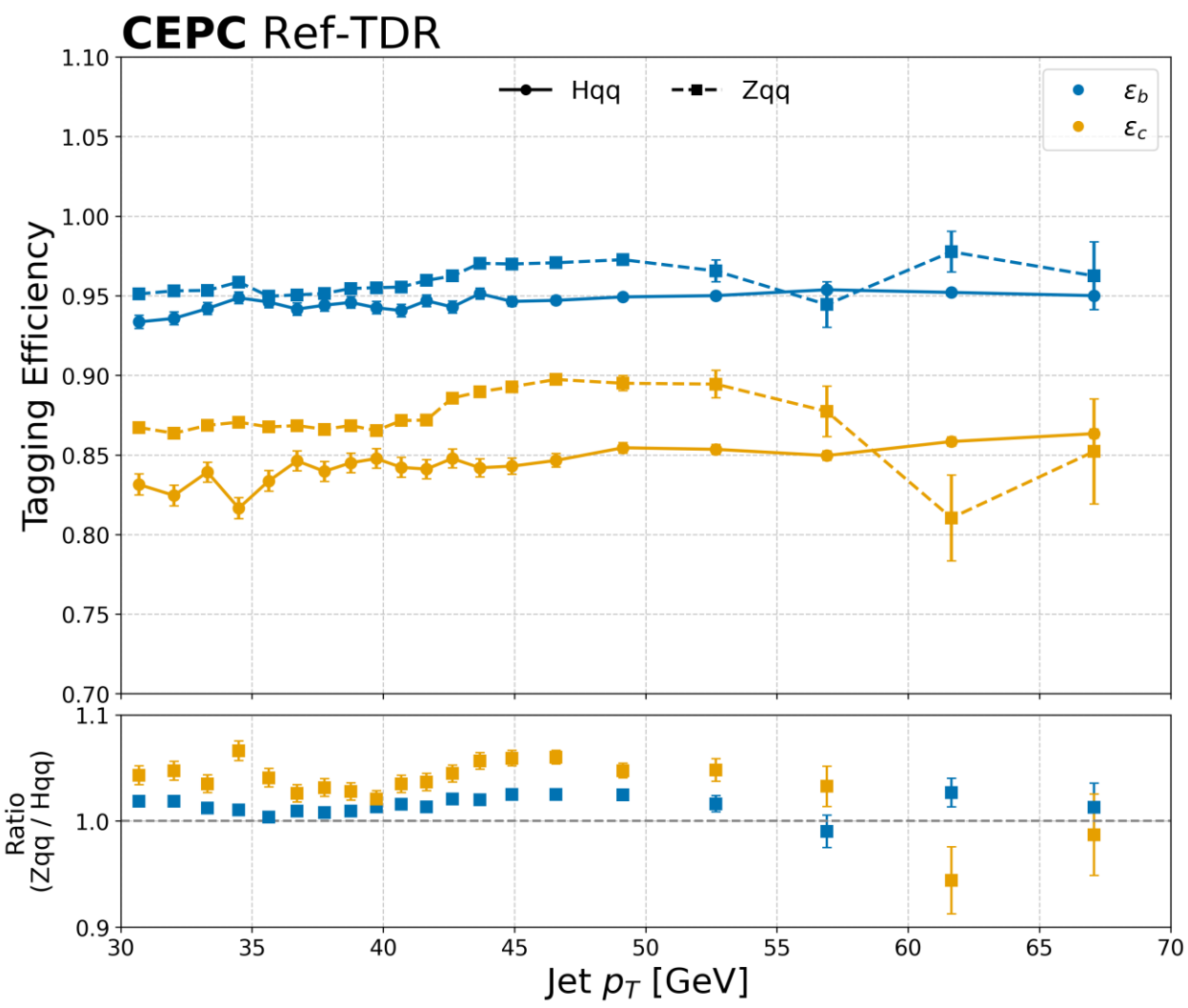
Comment

- The description of jet flavor identification needs to be streamlined. Currently, information is dispersed across sections (vertexing, tracking, PFA). A concise but complete description should be provided in one place *restructured*
  - A brief overview of standard Jet Flavour Tagging (JFT) is given in Section15.2.6, while Jet Origin Identification (JOI) is discussed in 15.2.7. However, it is unclear what performance gains are achieved by moving from JFT to JOI. *JFT vs JOI shown for b/c tagging eff and mis-id rates*
  - Benchmark comparisons (b/c-tagging efficiency versus misidentification rates at Z-pole and ZH 240 GeV) should be provided to evaluate performance systematically.
- The offline software environment is evolving rapidly. Performance studies should be conducted with synchronized and version-controlled frameworks, especially as CyberPFA depends critically on tracking, particle ID, calibration, and alignment inputs. *yes*
- A centralized database tracking the produced samples and their statistics should be maintained and updated (extending Table 15.4). Technical samples (e.g., single electrons, muons, decaying kaons for PFA studies) should be included and documented similarly for use in detector performance validation.

a centralized database created and maintained with IHEP gitlab service (in CEPCSW code repository)

Kinematics distribution





Hqq Zqq ROC

Attached to overleaf for choice.