Jet Performance at CEPC

Presented by [1]Pei-Zhu Lai（賴培築）

Supervisor: [2]Man-Qi Ruan, [2]Gang Li, [1]Chia-Ming Kuo

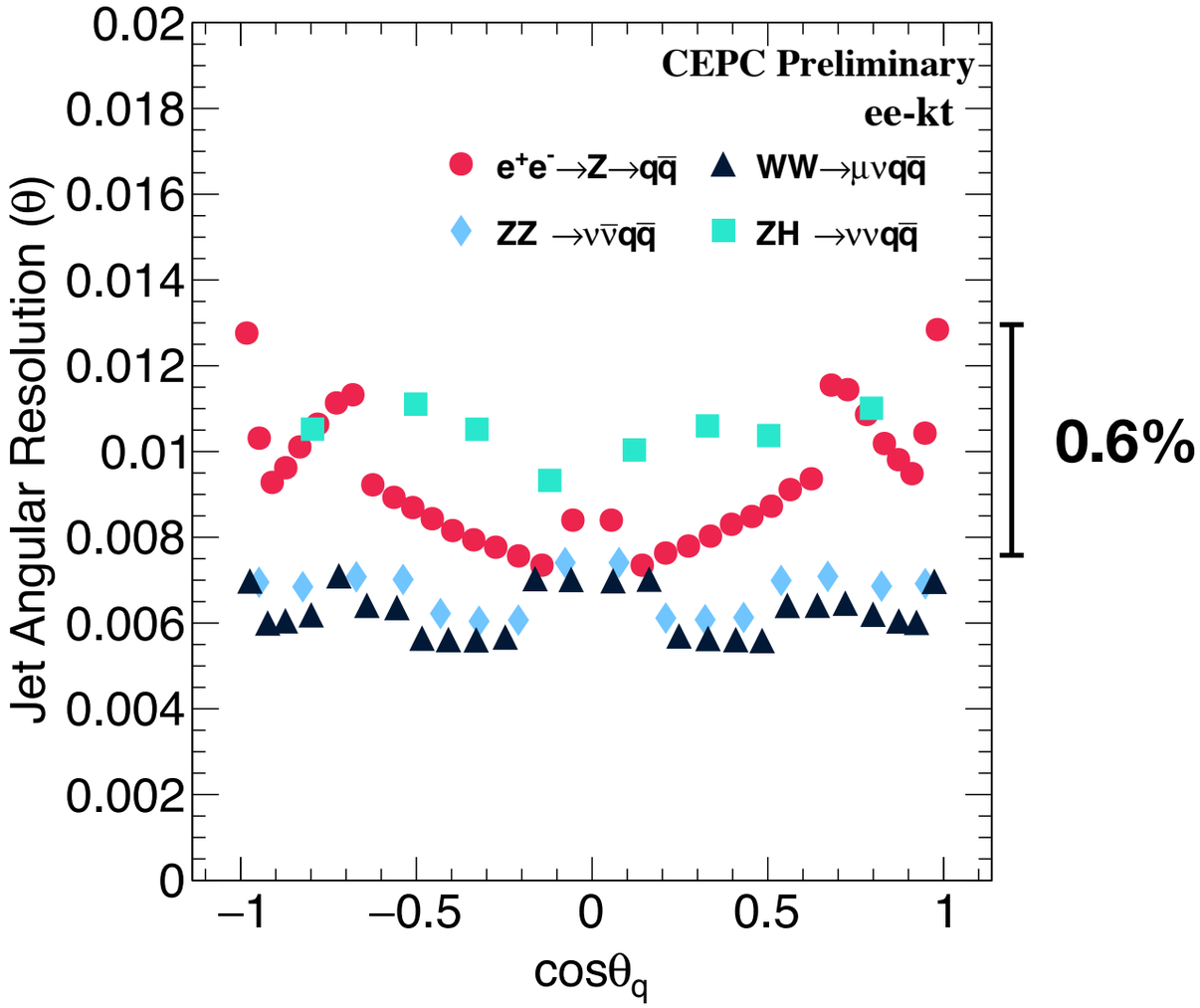
[1]National Central University, Taiwan

[2]Institute of High Energy Physics, China

China Group Meeting, IHEP, China

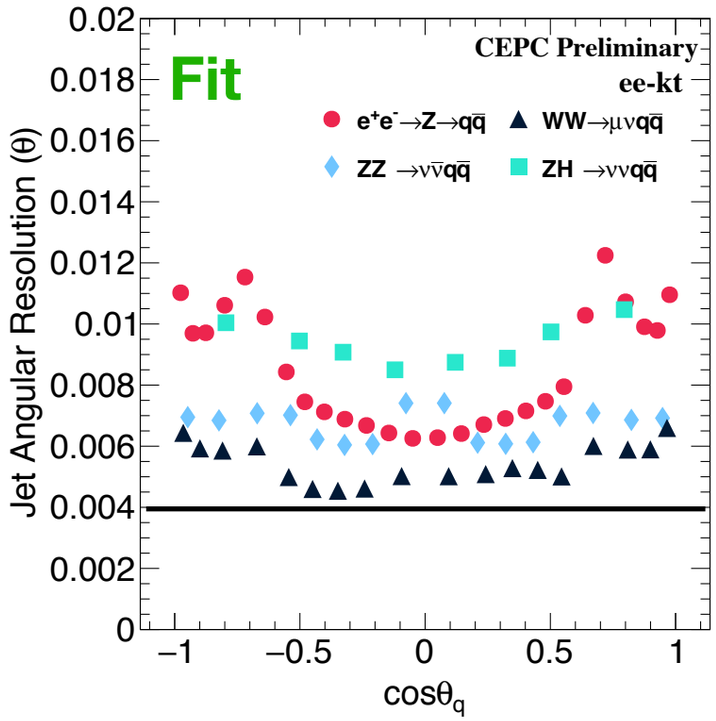
Feb 11, 2020

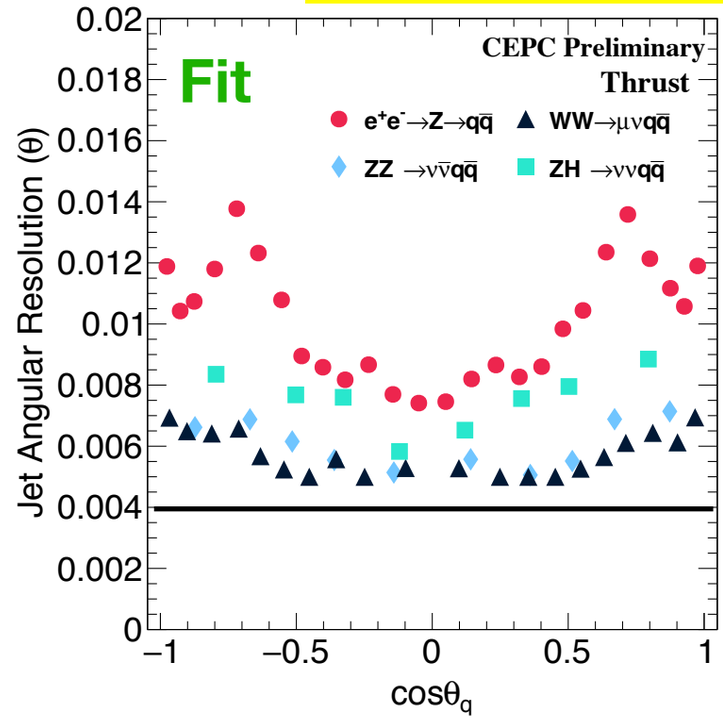
JAR (θ)

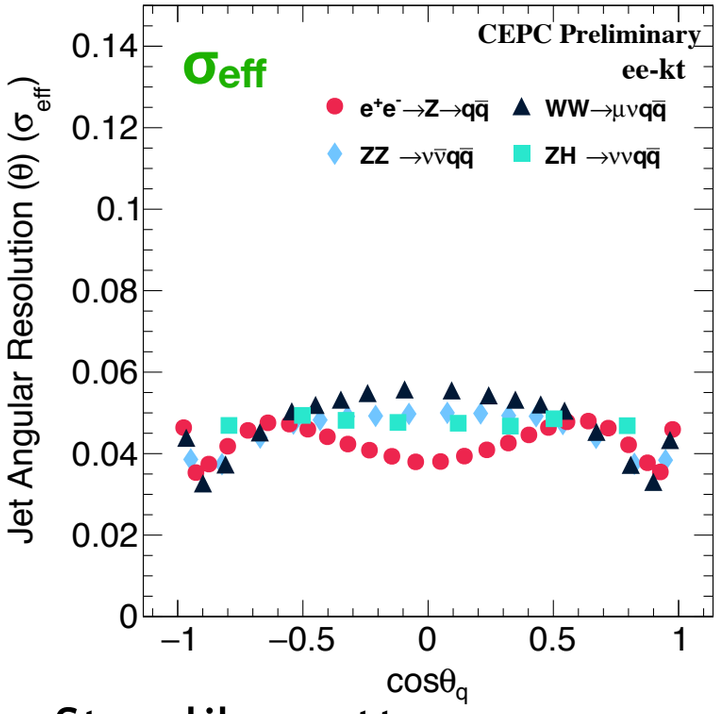


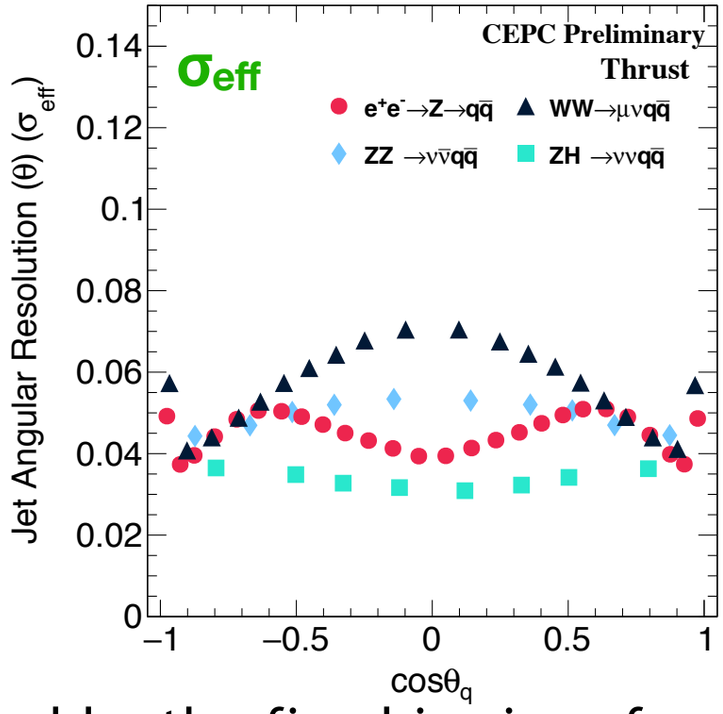
- What I improve after discussing this plot:
  - **Effective sigam**
  - **For fitting, make the bin size of the angle difference distribution narrower. (0.002→ 0.001)**
  - **Also sort the GenJet according their energy.**
  - **For Z pole process, if only matching the RecoJet and GenJet is not enough—the energy of leading and sub-leading jet is too similar—the angle matching is also applied. Make sure the leading jet has smallest angle difference to the GenJet.**

JAR (θ) (Reco-Gen)



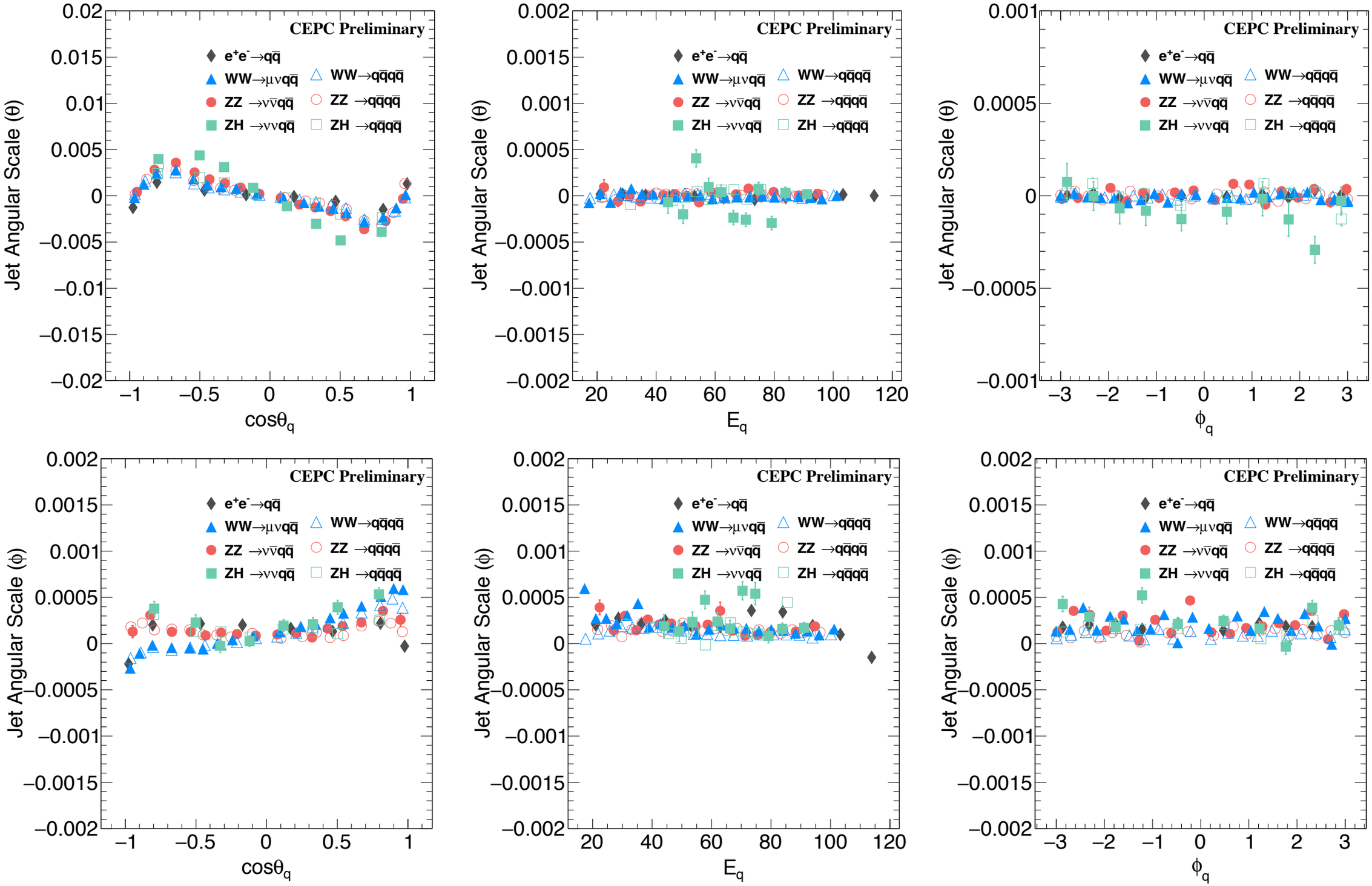






- Good news: Step-like patterns are removed by the fine bin size of angle difference distribution.
- Bad news: There are some tension between two methods — the patterns are not the same.

JAS (Reco-Gen)



- JAS zoom in pattern.
- Except for top left plot, all the variation of JAS are within **0.05%(0.0005)** — **extremely small.**
- They will be uploaded into the paper.

Summary

- Paper is still being revised.
- JAR step-like pattern has been removed but there are some tensions between fitted and effective sigma results.
- JAS are control within 0.05% except for jet theta scale as a function of polar angle.

Back up