

Recoil Higgs at CEPC

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CEPCSW Release

CEPCSW, tag: tdr24.12.0

Defination

- Luminosity: 21.6 ab^{-1} (*Table 3.2, CEPC TDR Accelerator*)
- Barrel: lepton momentum, $|\cos\theta| < 0.7$

MC Samples

ZH; $Z \rightarrow ll$, $H \rightarrow$ inclusive. $l = e, \mu$

- full production chain. SIM+DIGI+TRACKING+REC

Collections

CyberPFO in Rec Event Contents.

Two leptons

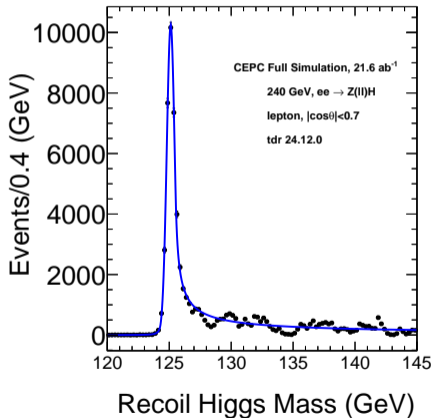
Two PFO with invariant mass closest to Z mass.

Recoil Higgs

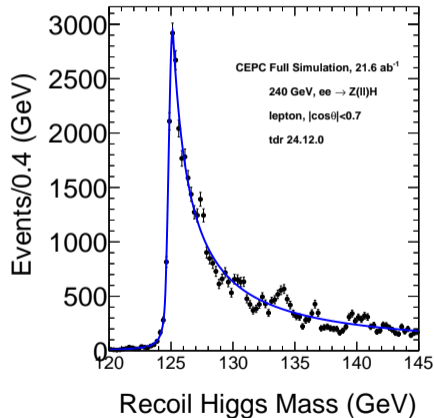
- Center of mass energy: 240 GeV.
- Z mass window: $|M(l\bar{l}) - 91.19| < 20$ GeV.

Recoil Higgs

$Z(\mu\mu)H$



$Z(ee)H$



Summary and Outlook

Summary

- First version of Recoil Higgs study for CEPC Ref-TDR.

Outlook

- Fitting study.

Thanks for your attention!