

# Study of shower shapes of loosely isolated photons

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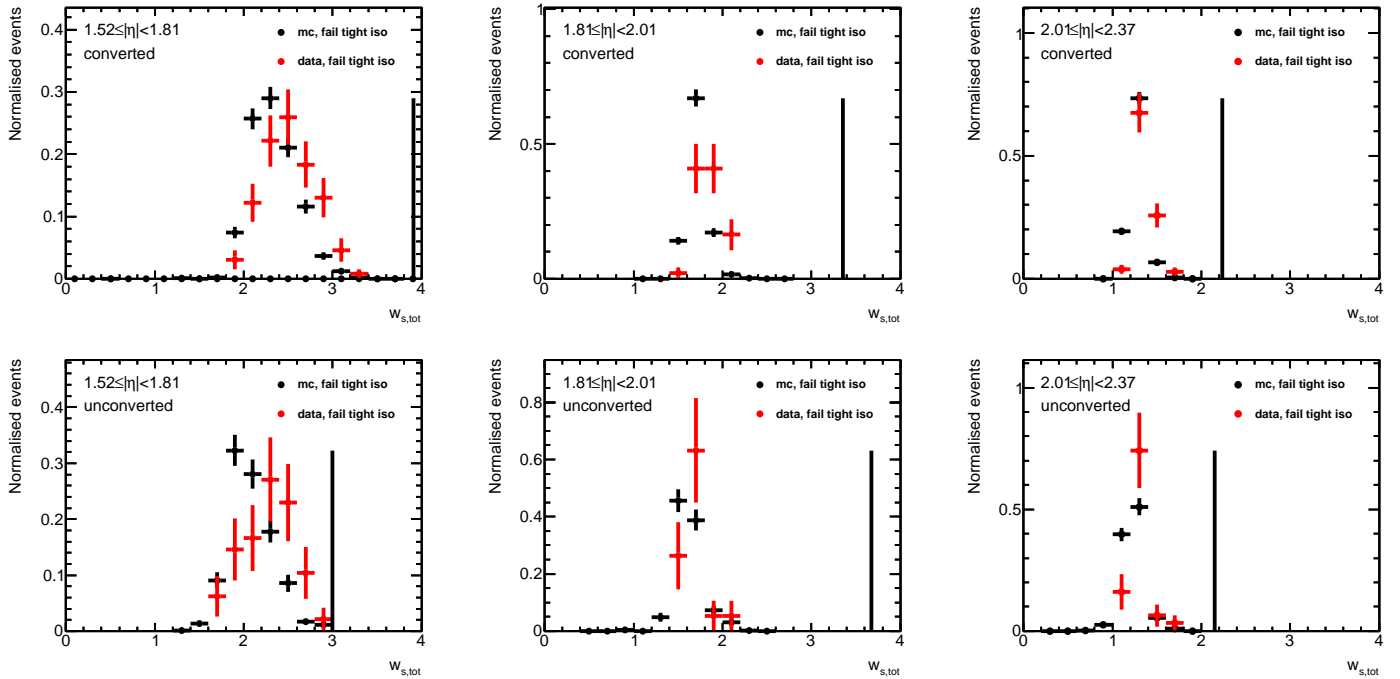
Study the shower shapes of the diphotons events in Endcap-Endcap (EE) or Barrel-Barrel (BB) categories for:

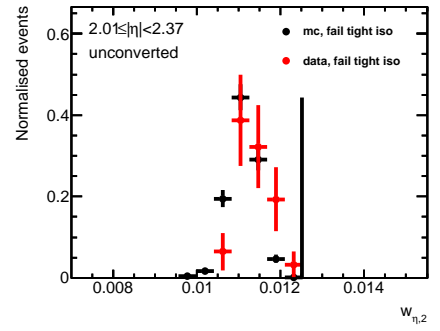
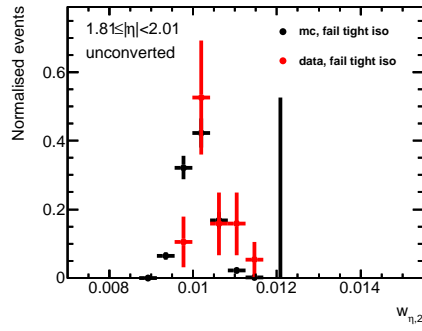
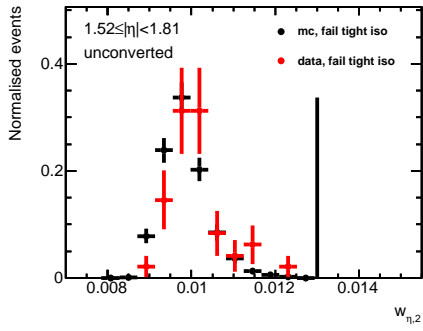
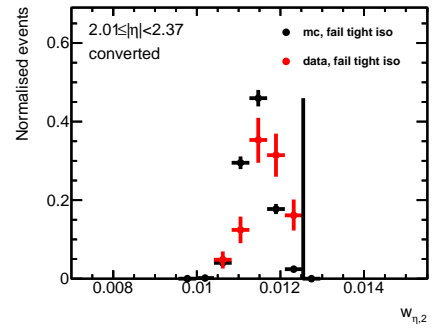
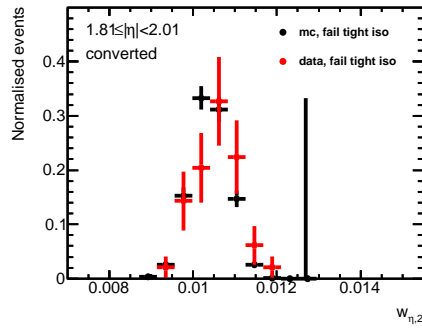
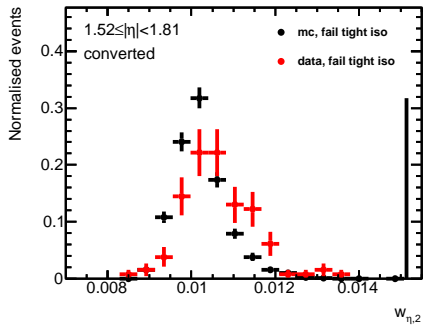
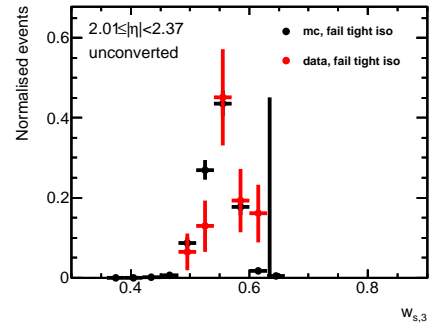
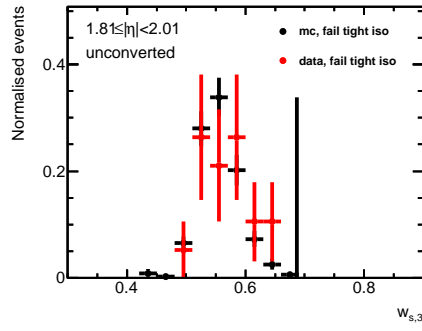
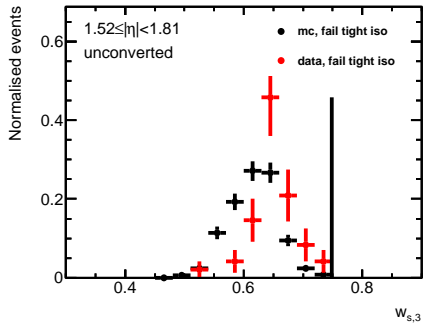
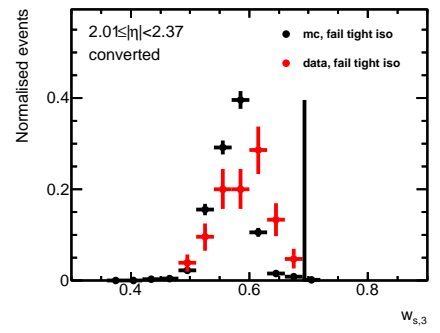
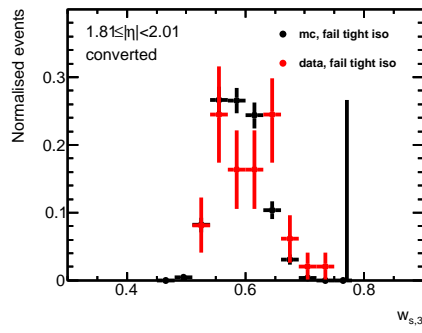
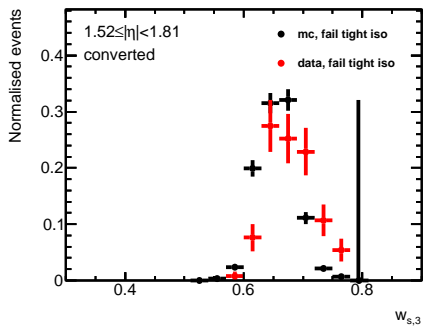
- Grey photons = photon candidates passing the loose isolation criteria but failing the tight one,
- Tightly isolated photon candidates.

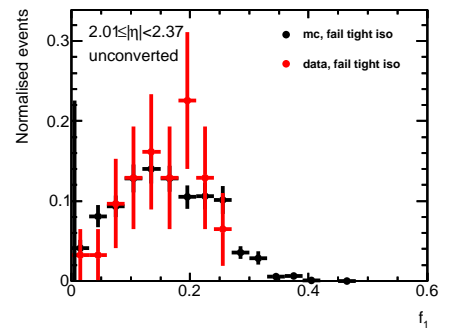
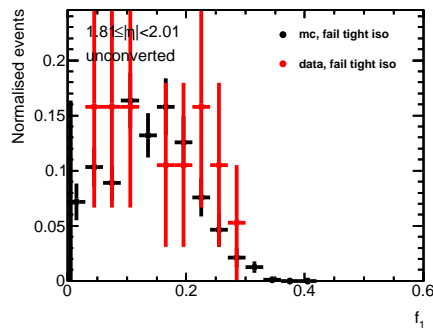
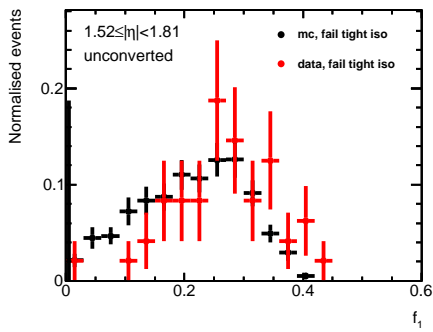
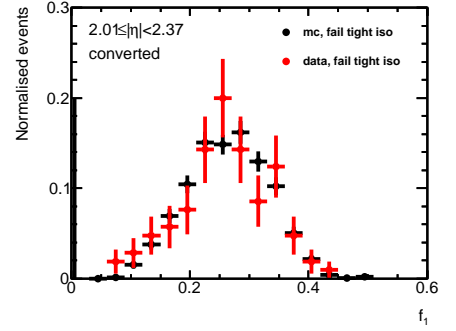
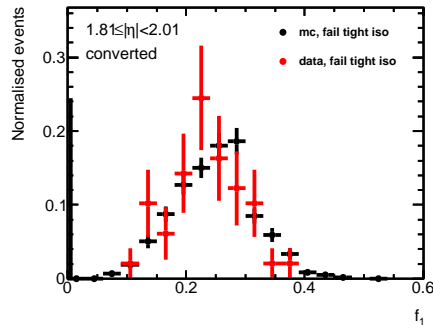
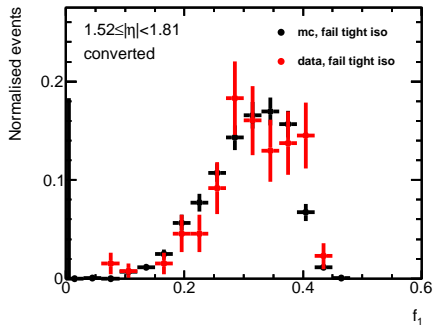
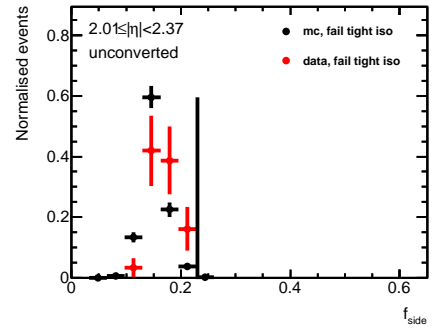
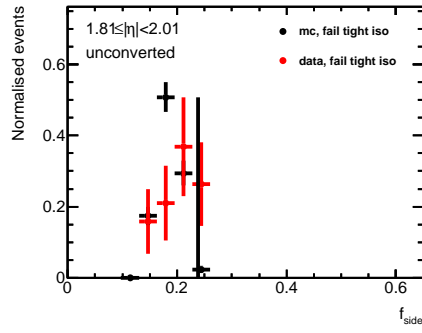
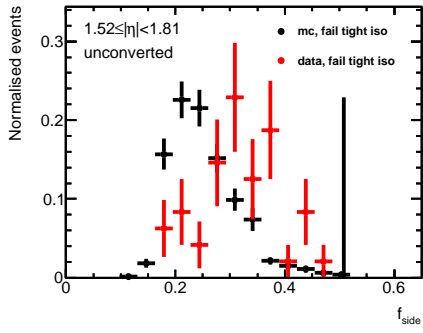
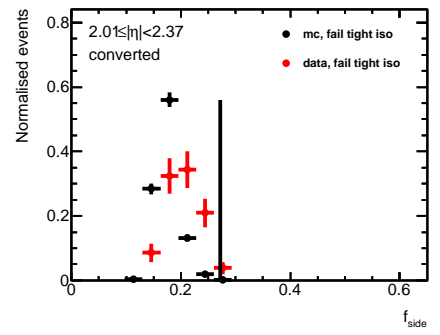
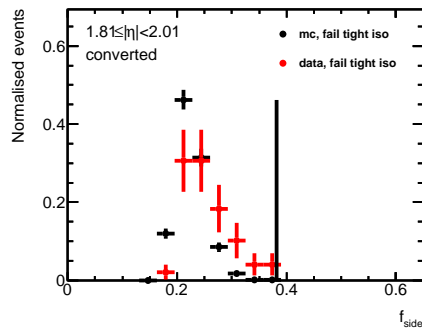
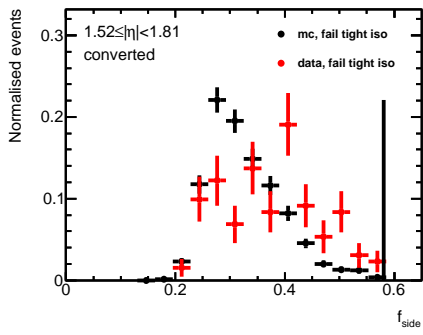
Converted and unconverted photons are considered separately, in  $\eta$  bins (those of `isEM`). The leading and subleading photons are plotted on the same histograms. The MC sample is `Sherpa`  $\gamma\gamma$ .

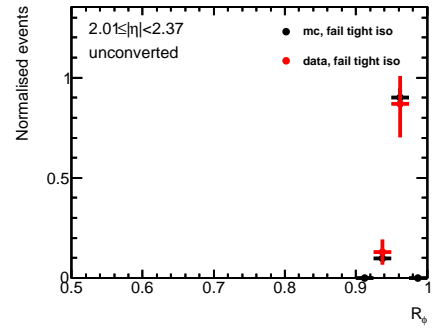
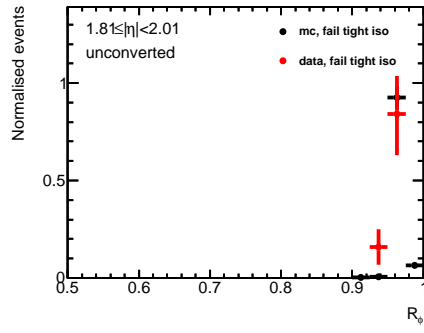
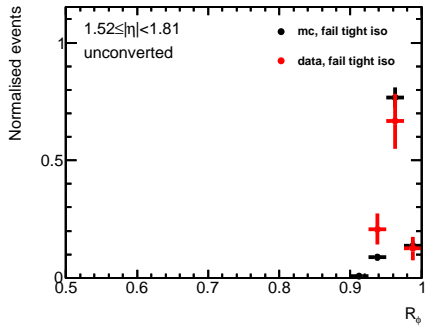
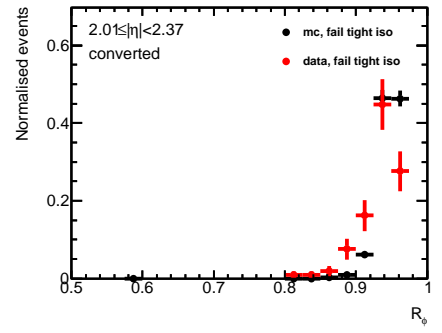
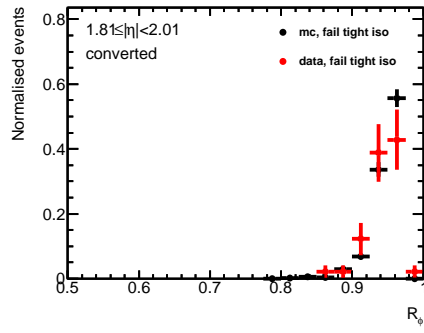
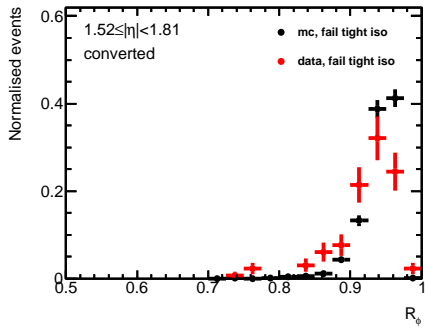
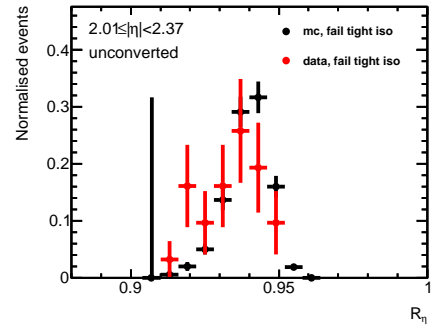
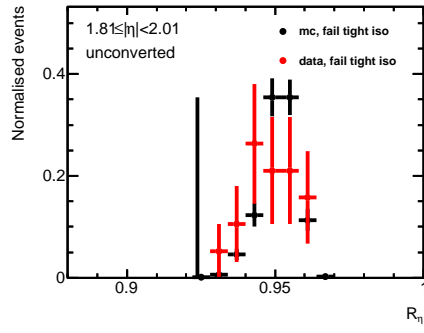
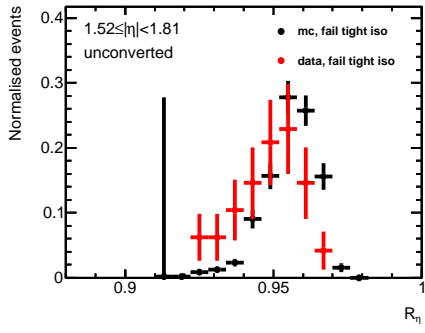
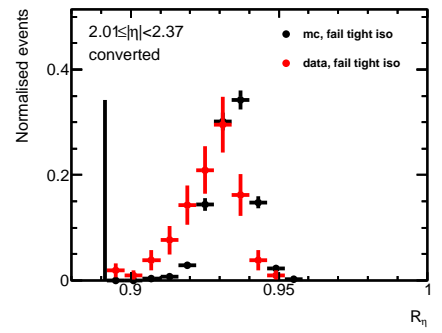
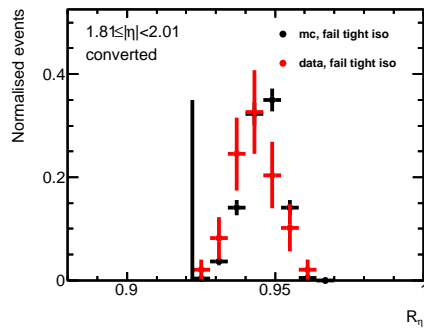
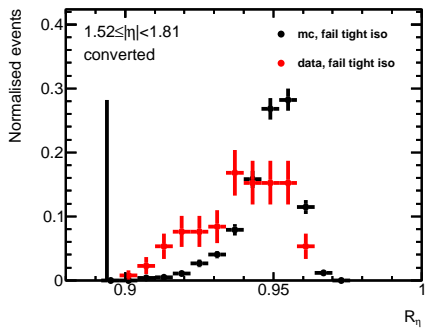
## 1 EE diphotons events

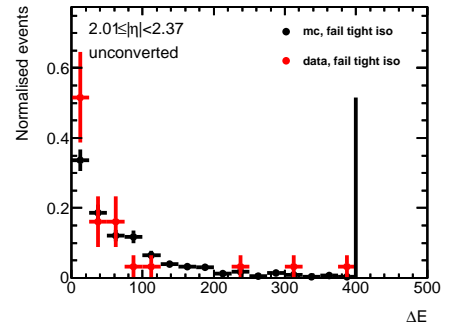
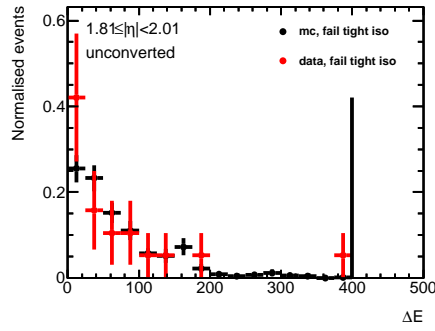
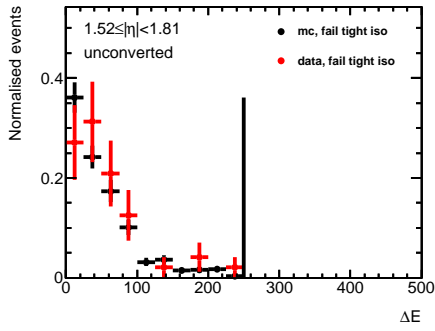
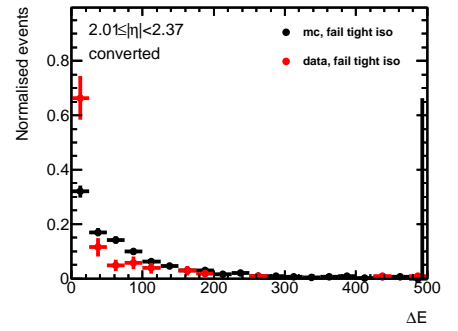
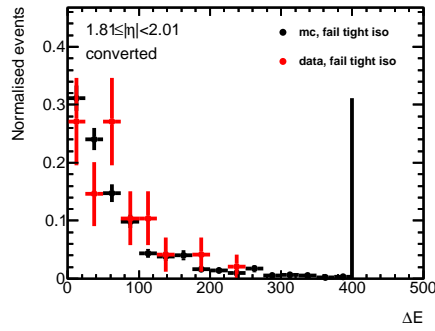
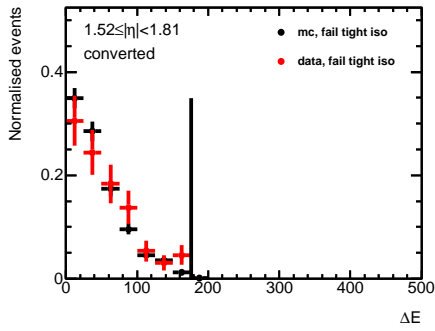
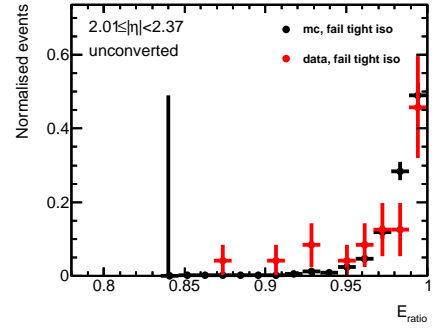
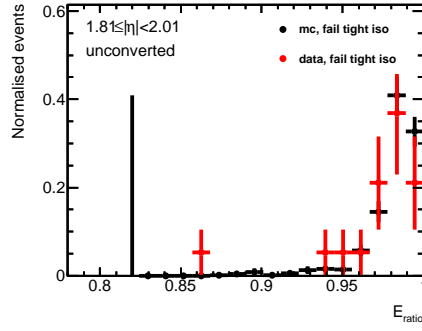
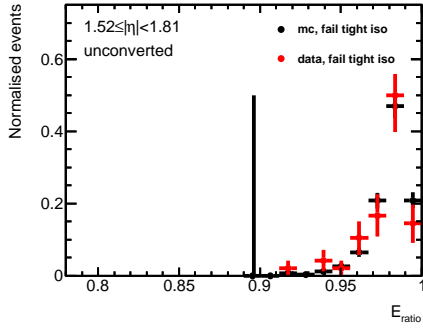
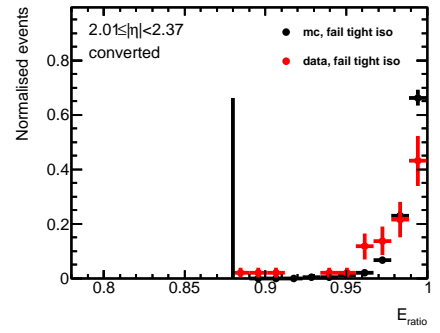
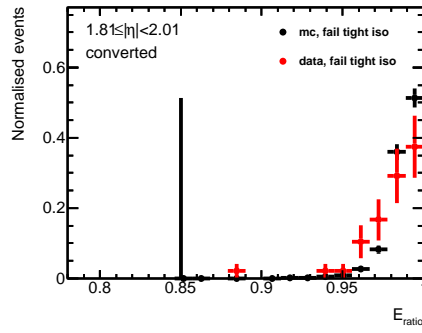
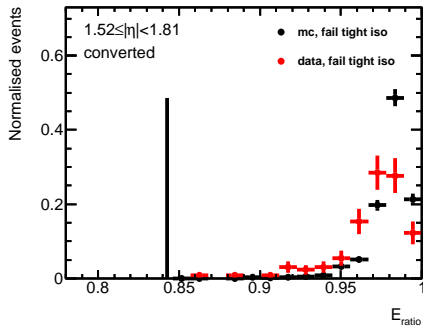
### 1.1 Grey photons (EE)



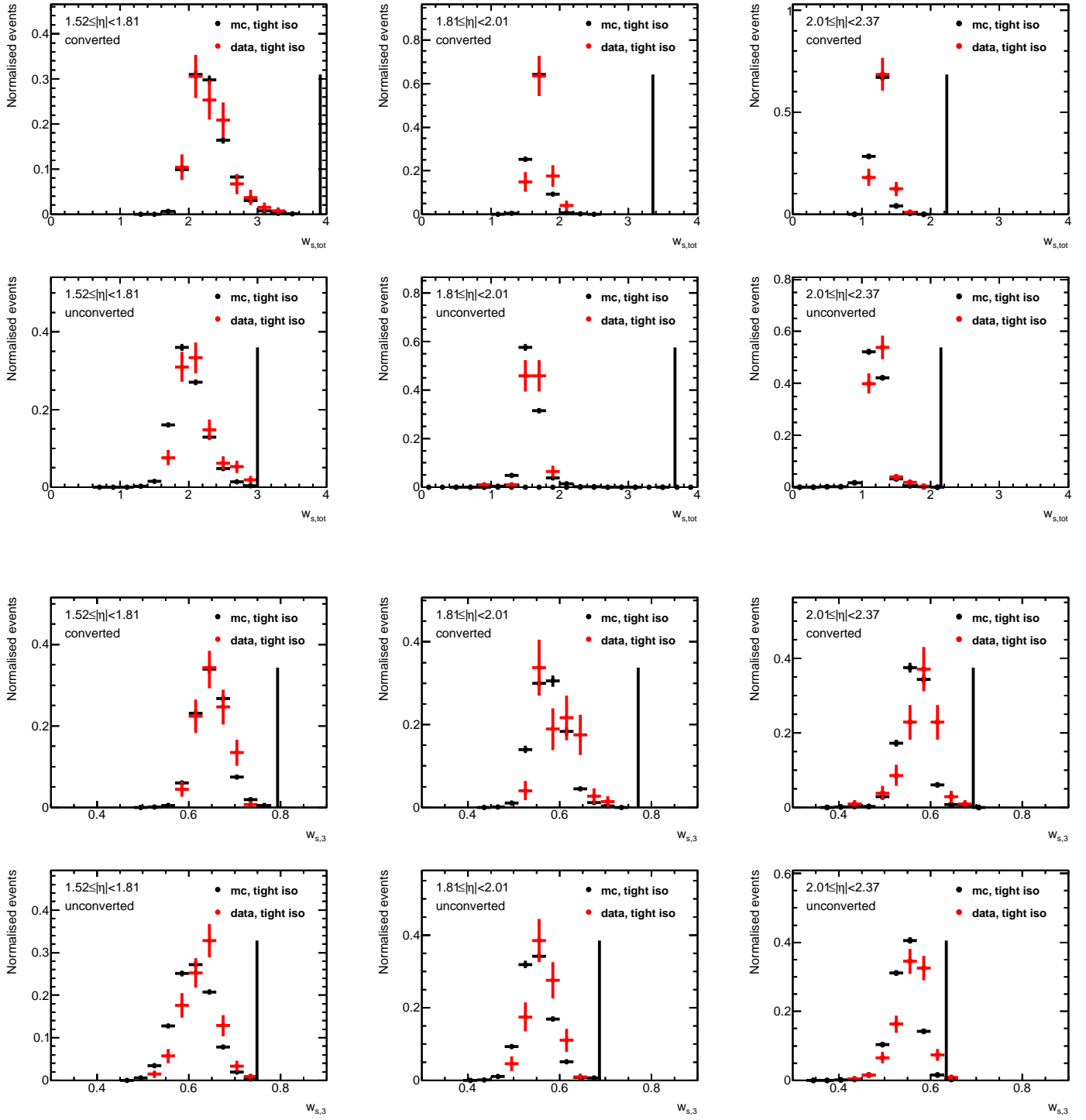


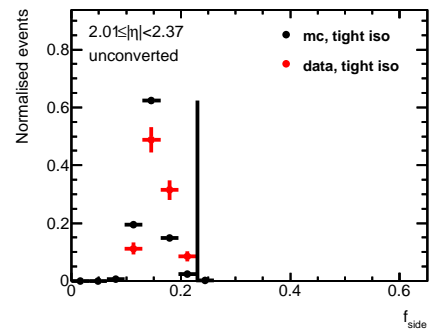
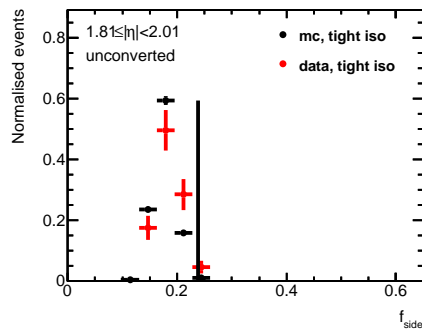
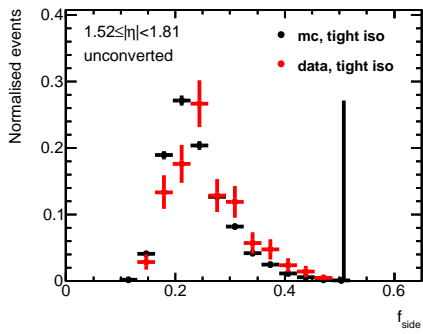
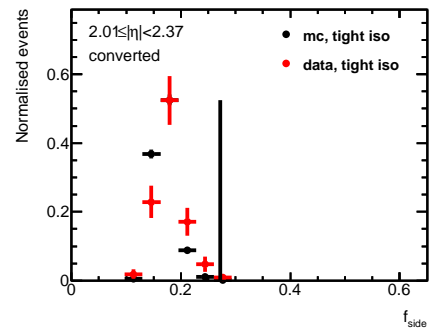
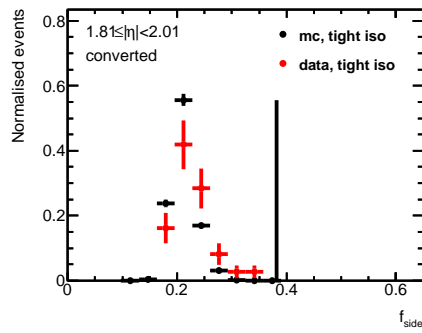
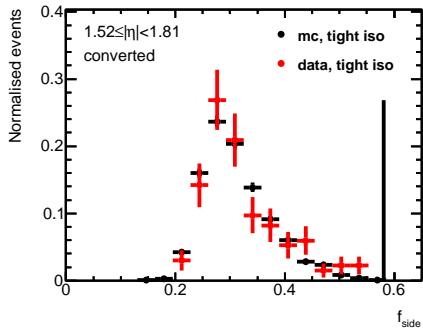
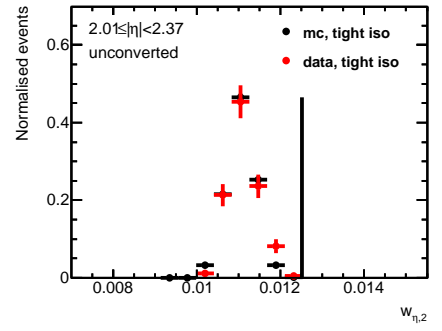
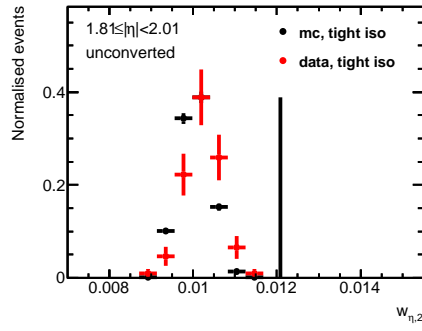
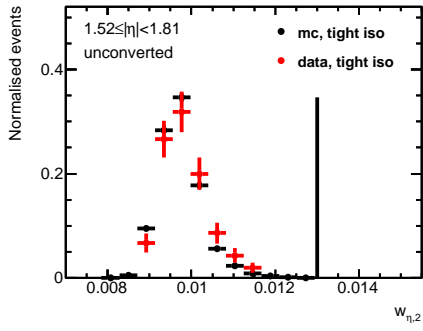
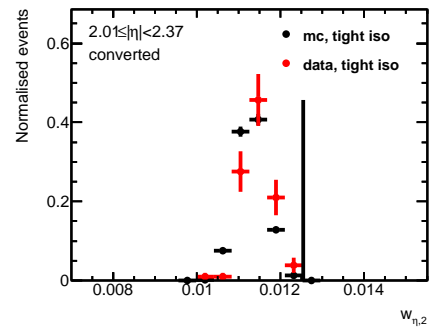
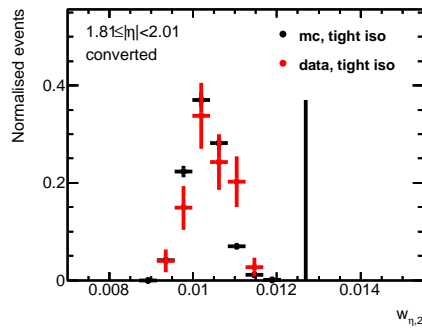
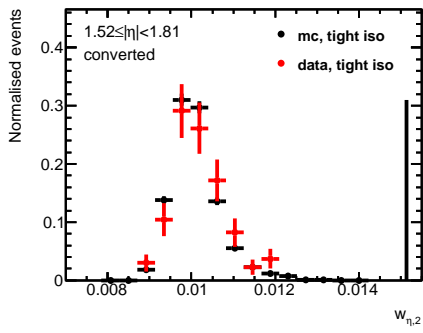


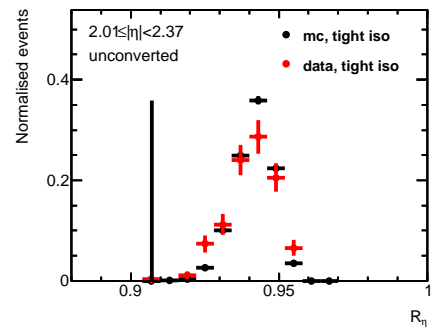
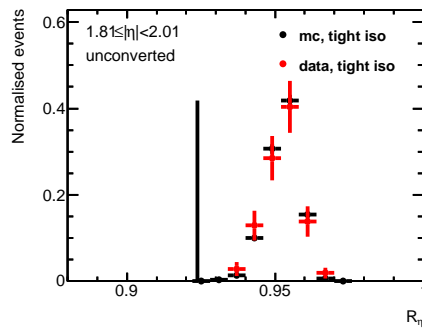
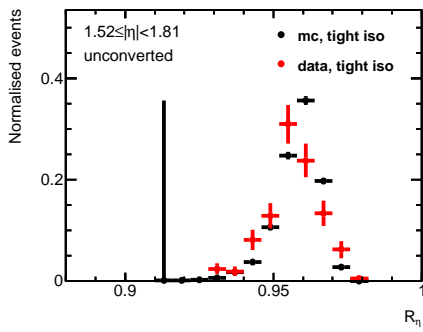
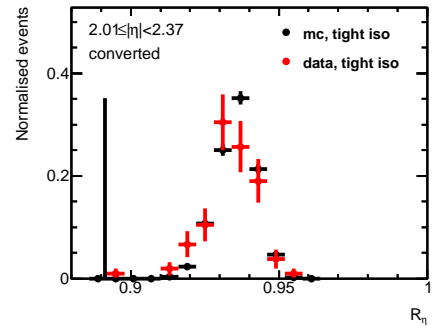
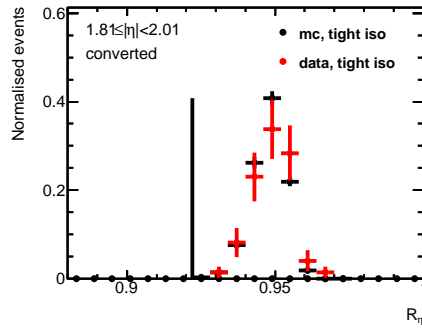
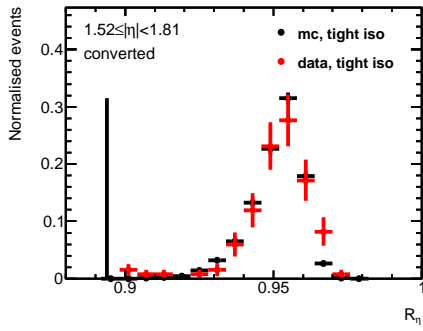
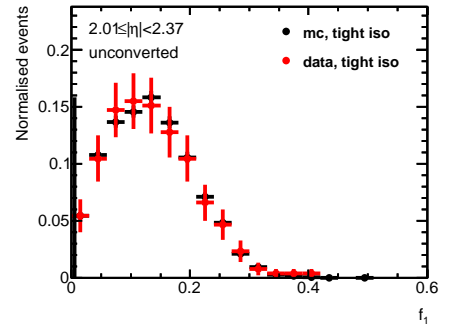
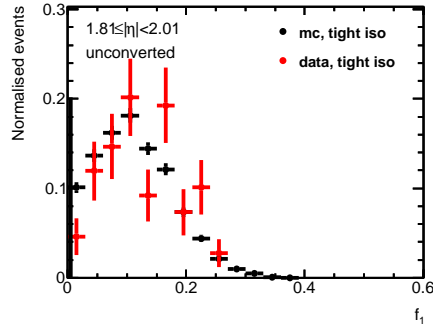
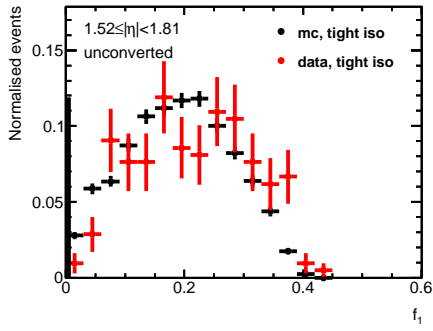
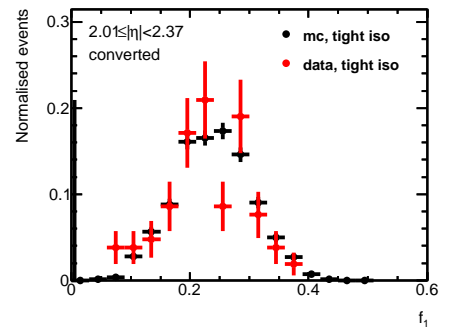
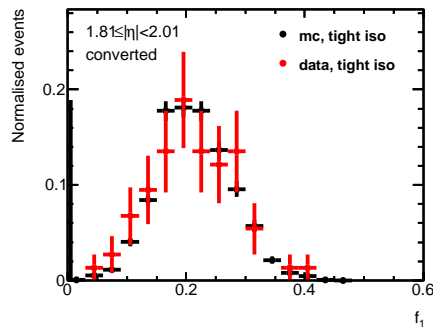
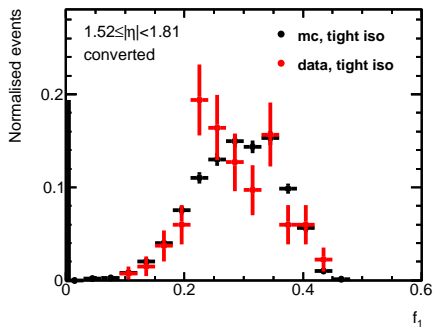




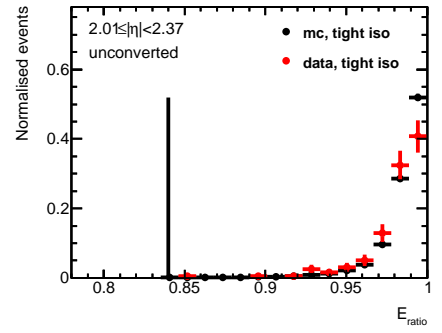
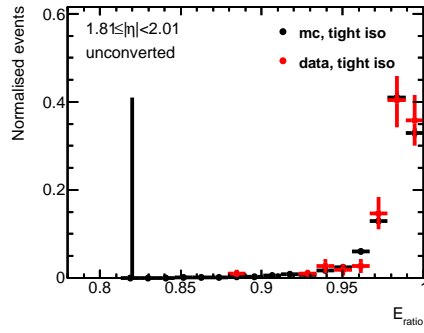
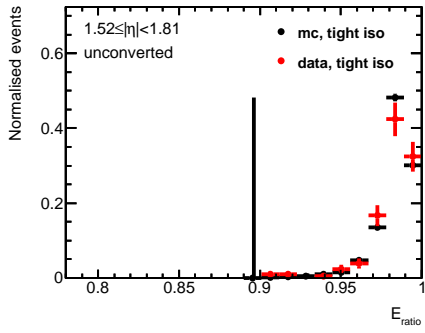
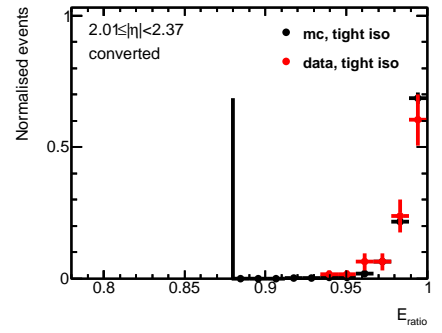
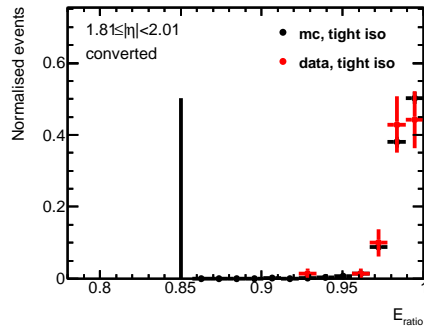
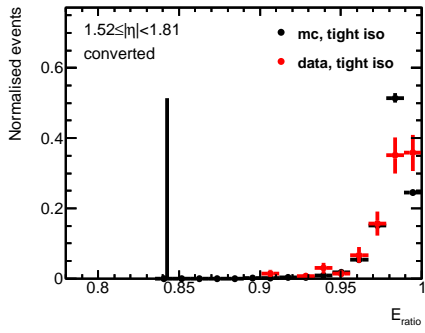
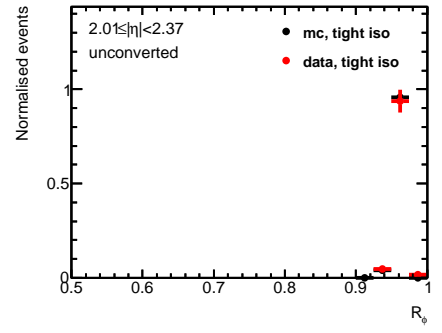
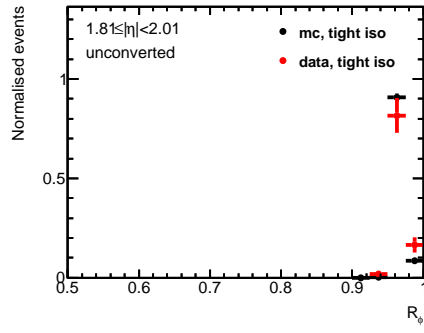
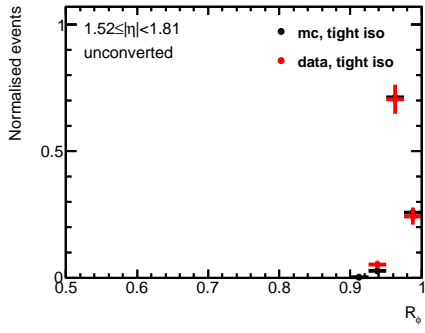
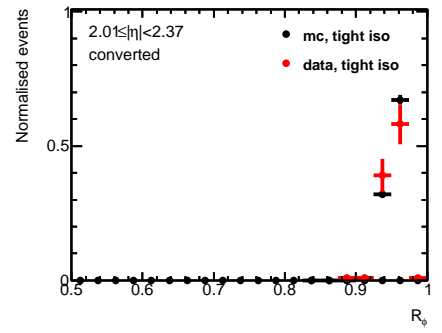
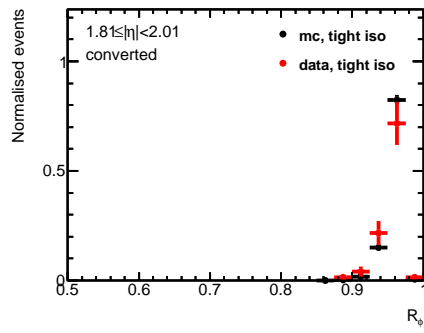
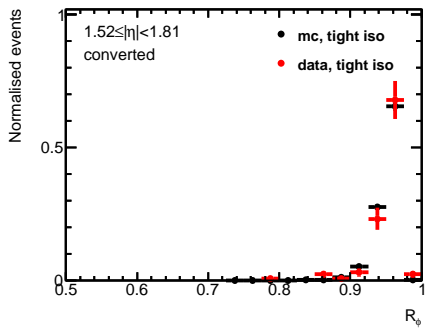
## 1.2 Tightly isolated photons (EE)

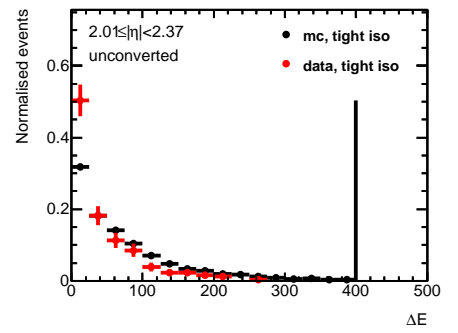
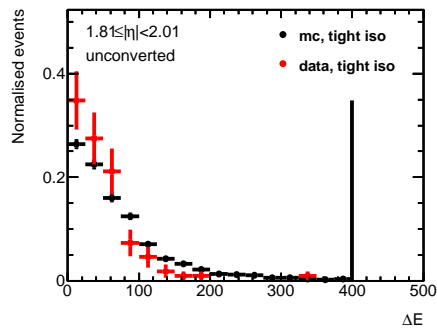
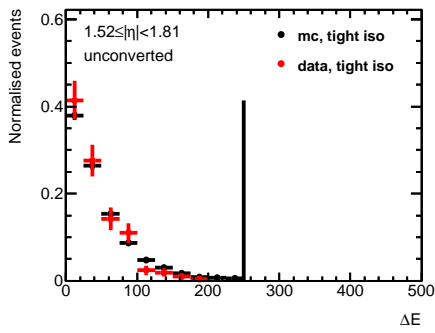
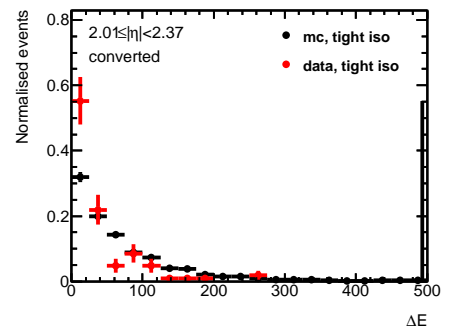
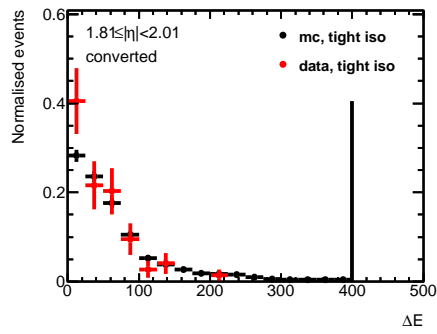
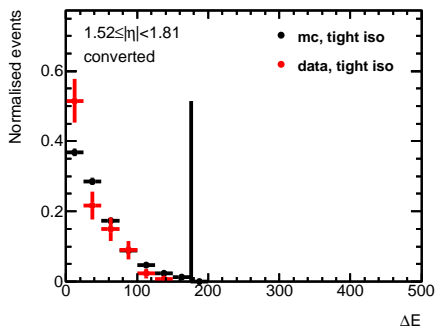






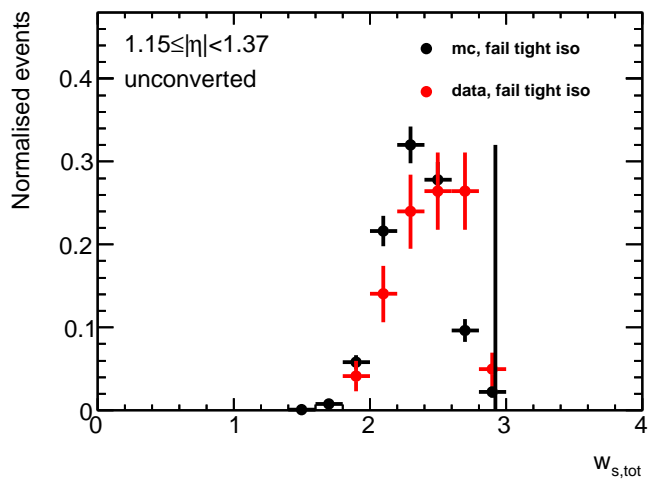
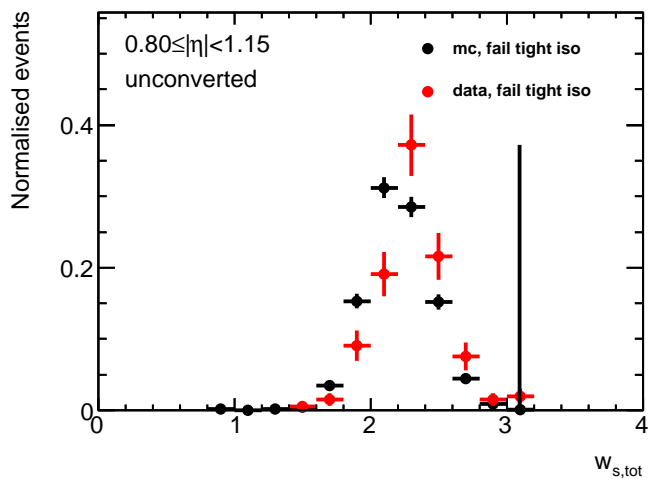
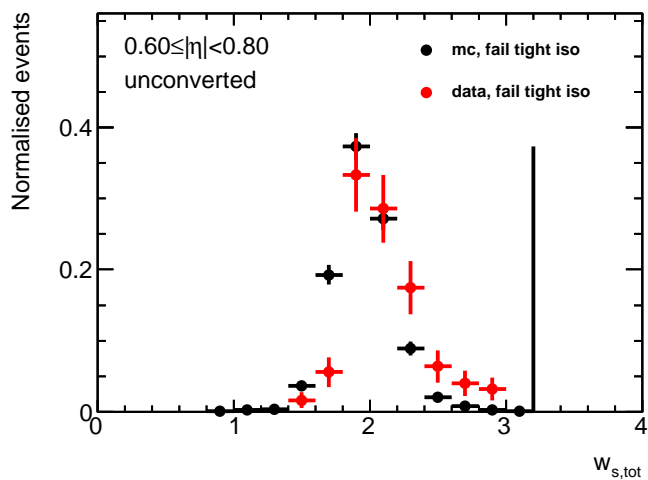
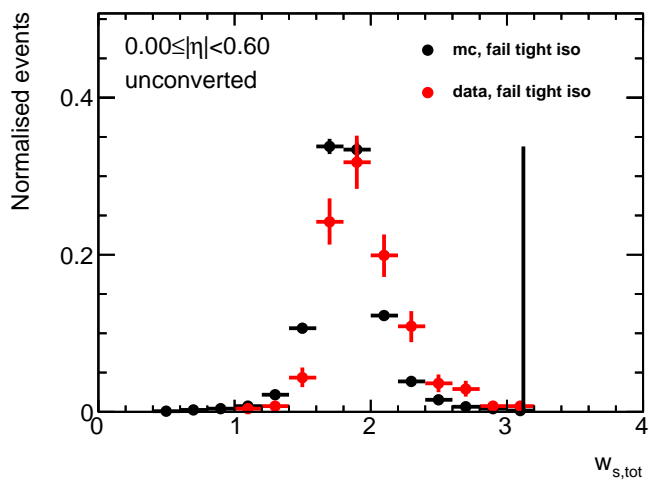
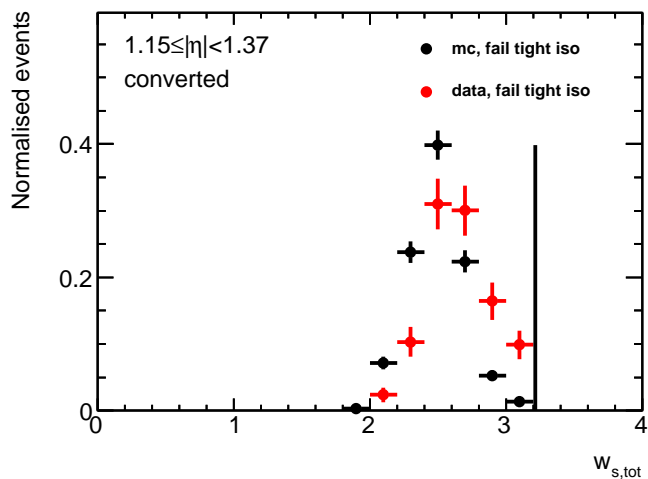
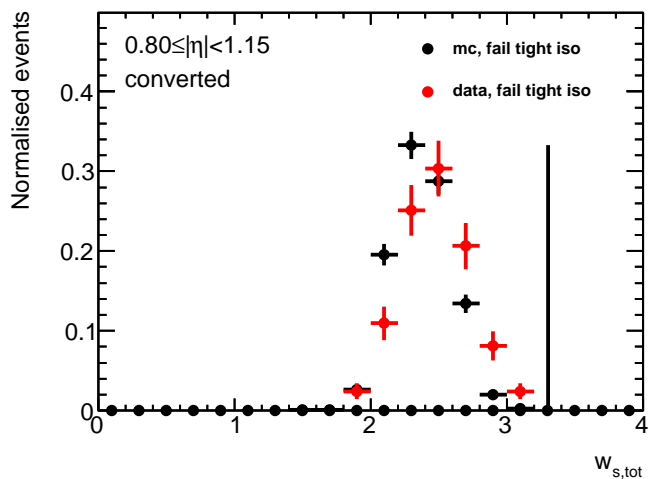
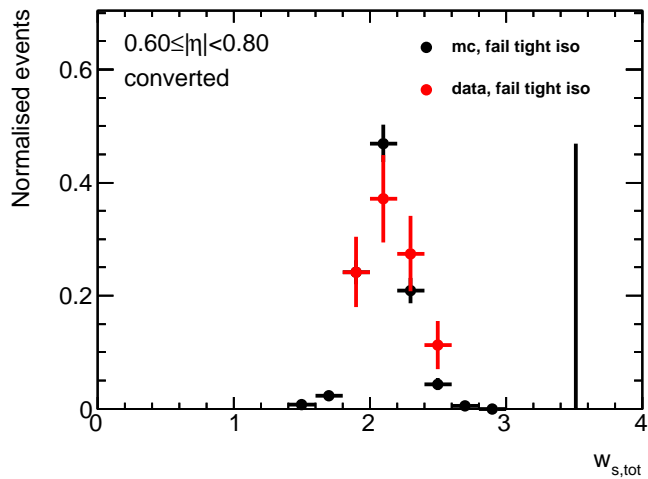
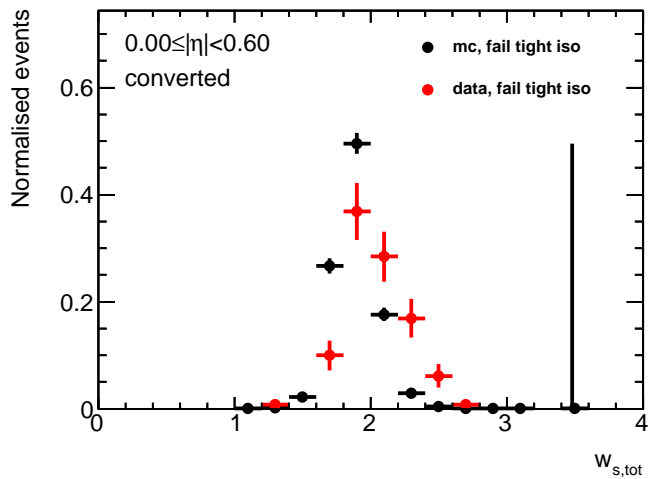


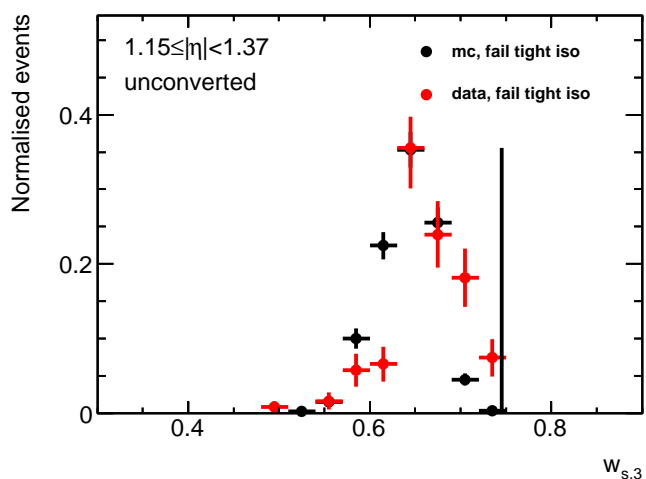
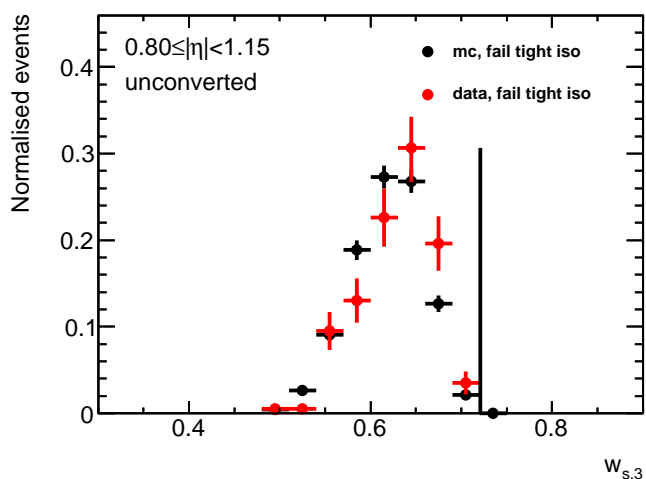
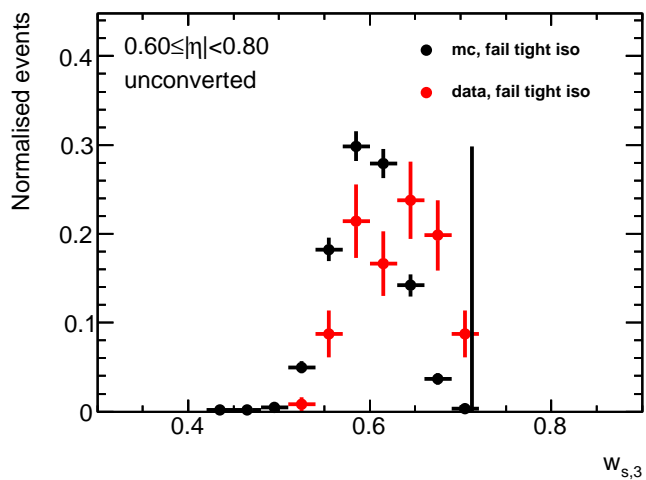
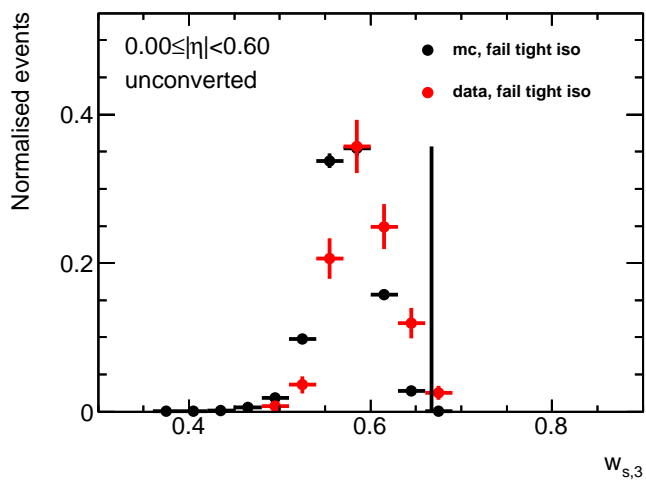
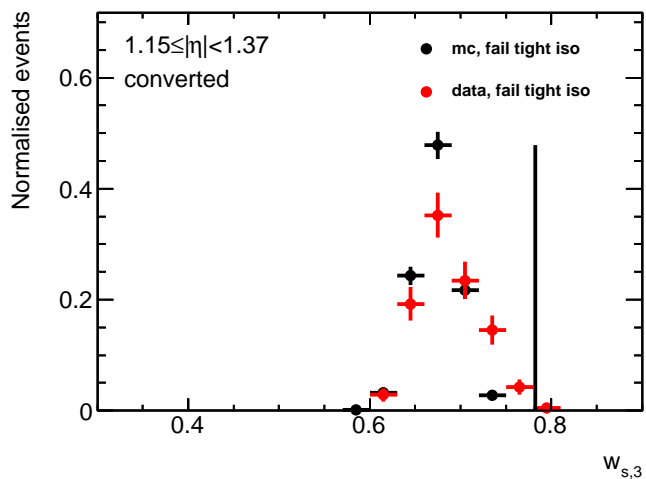
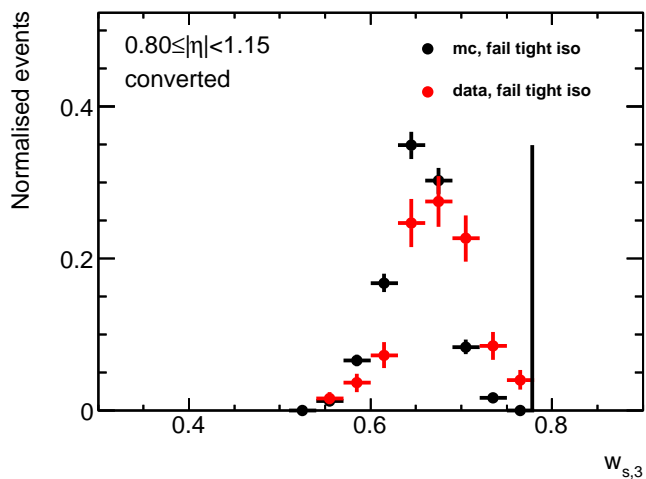
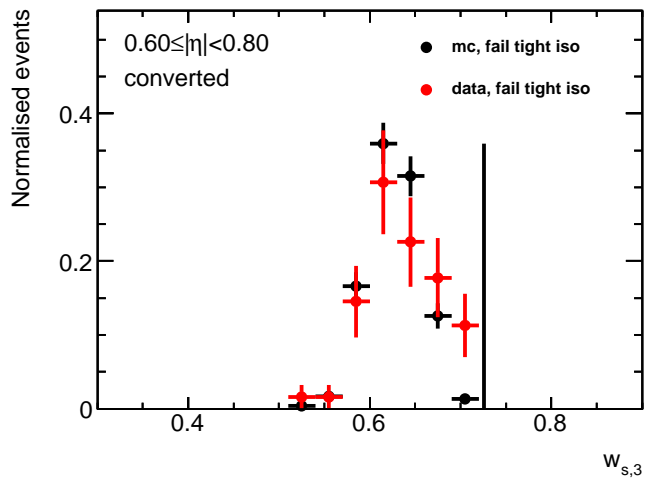
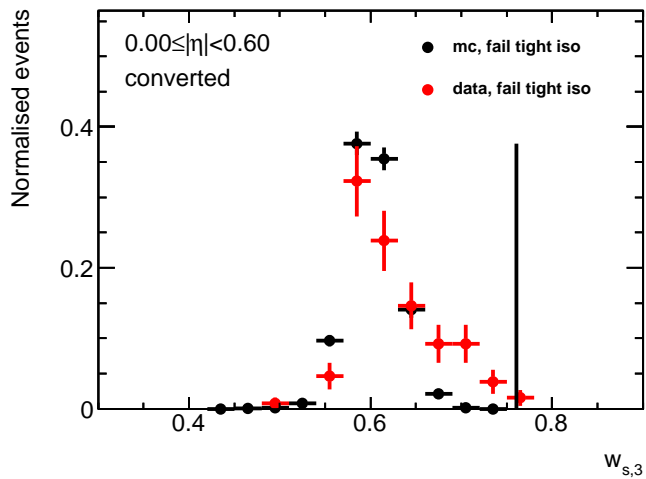


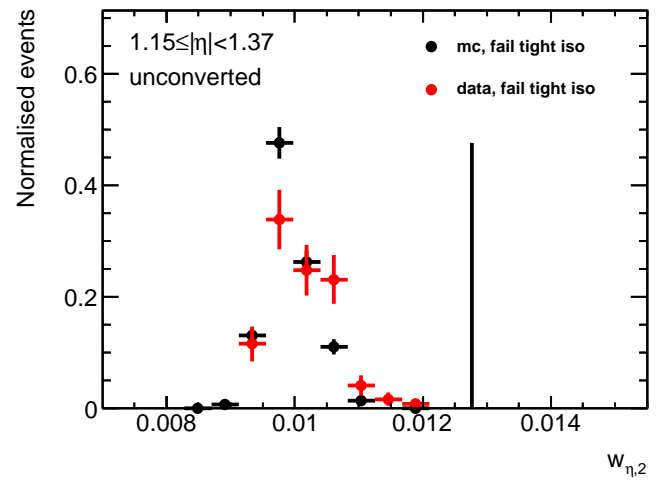
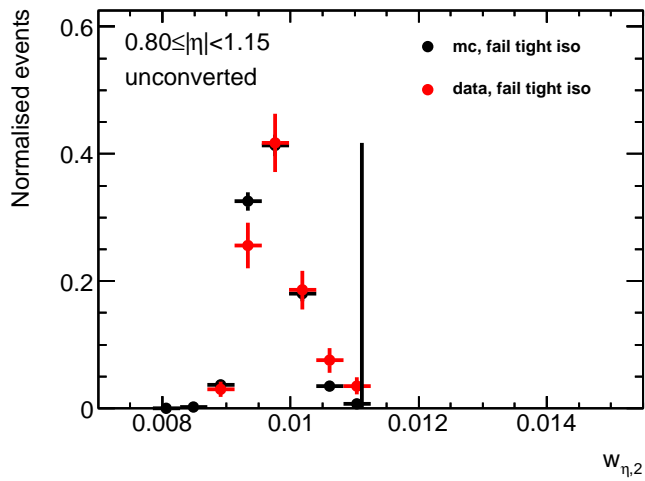
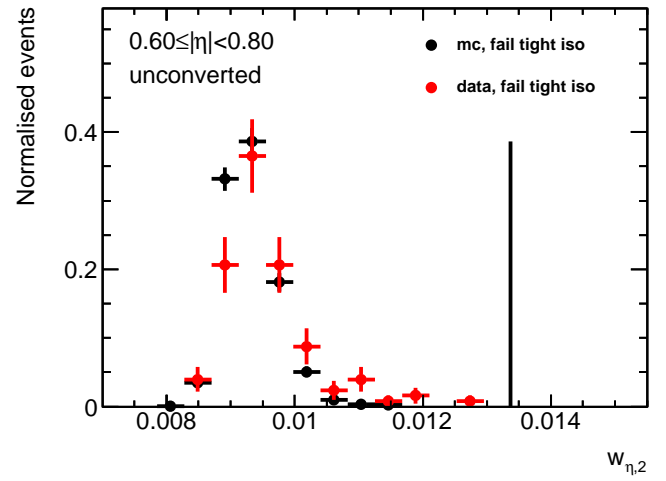
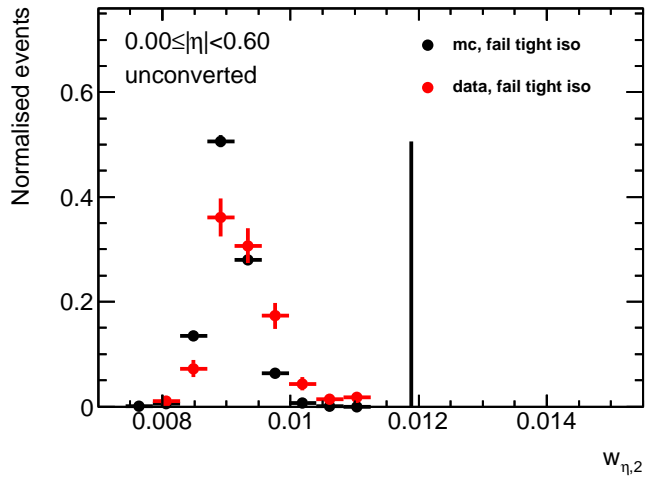
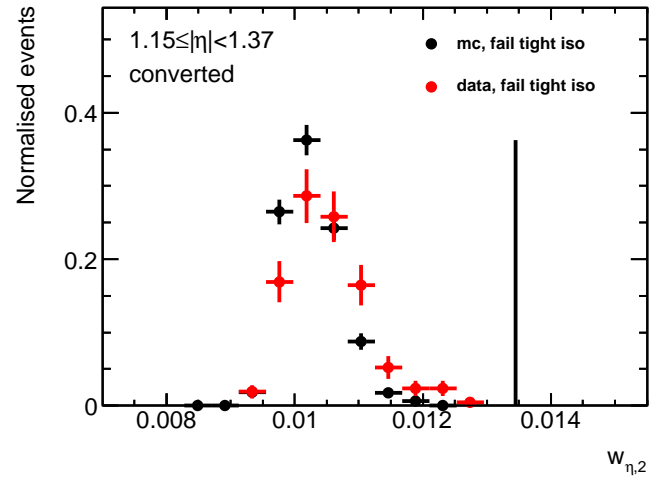
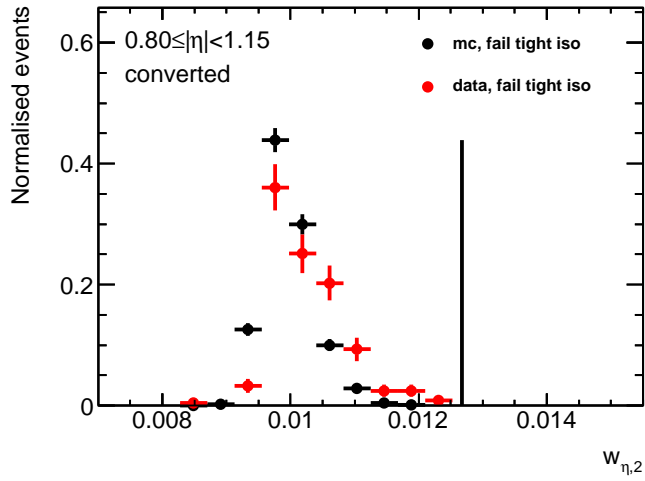
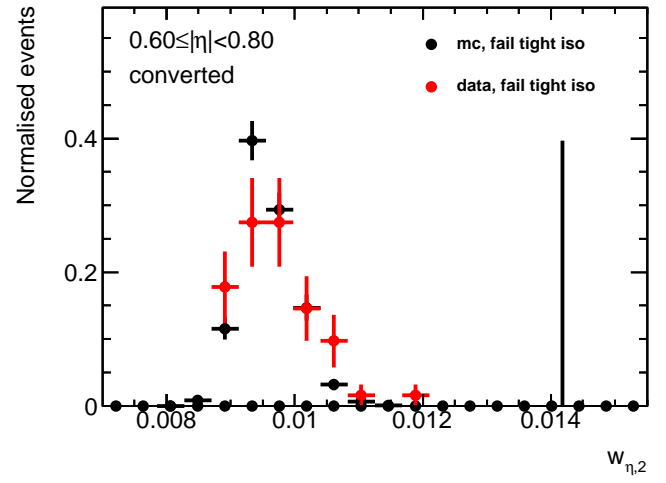
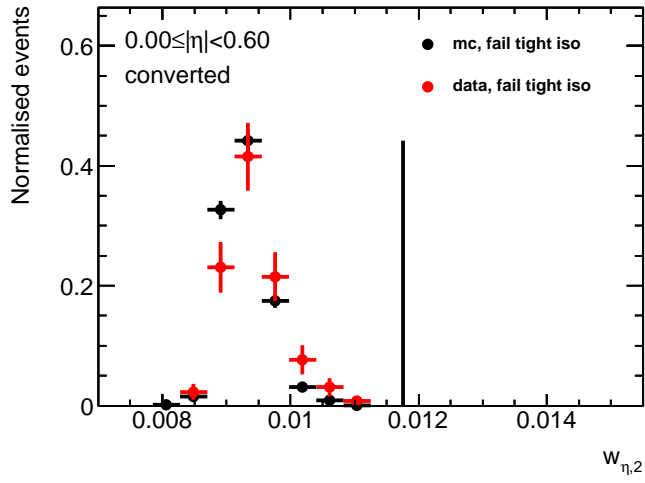


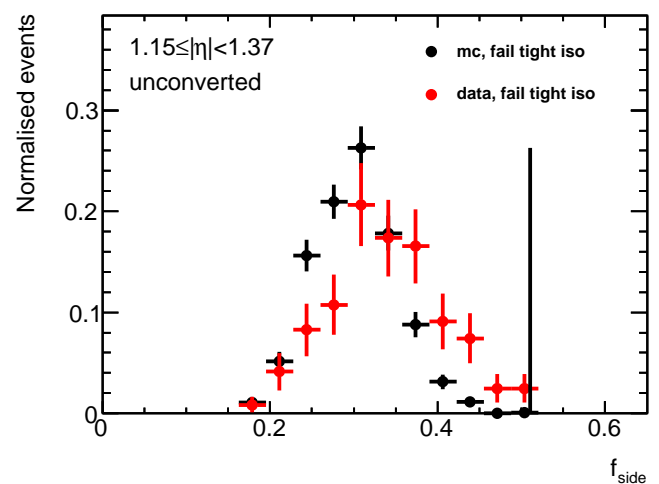
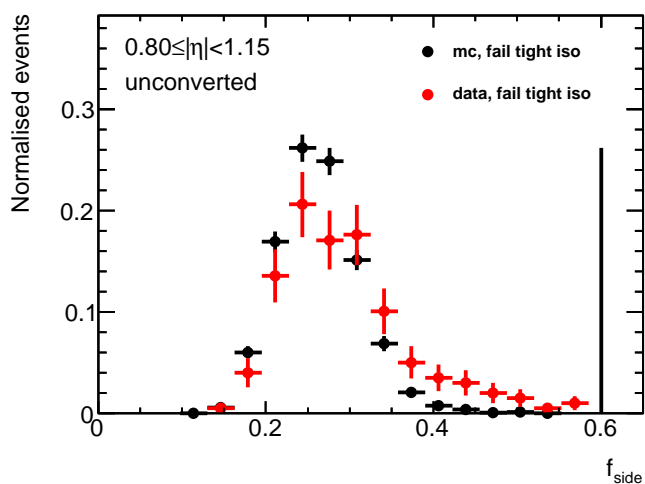
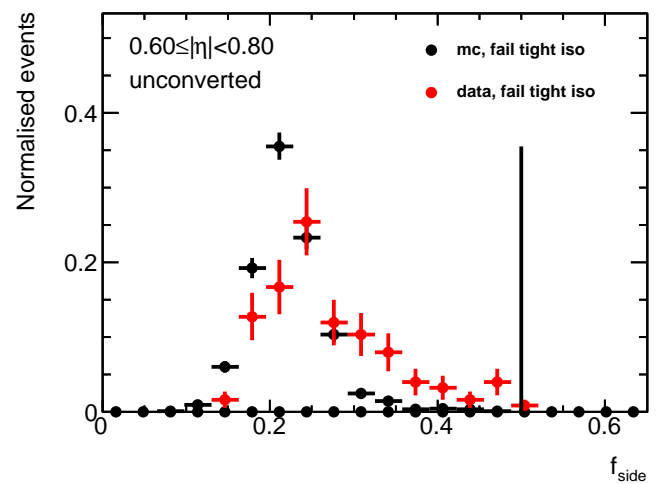
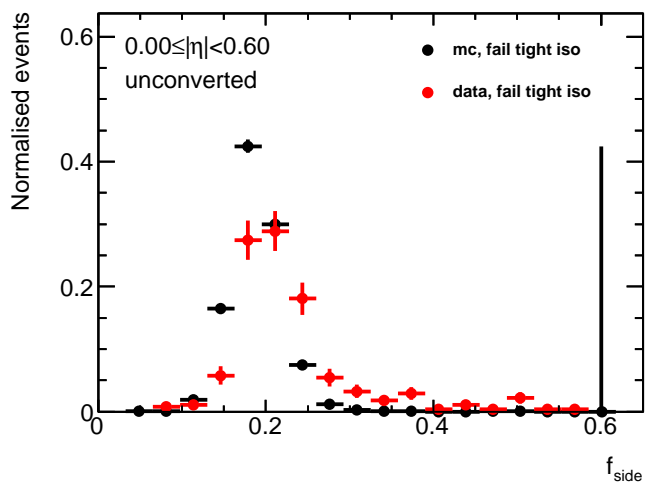
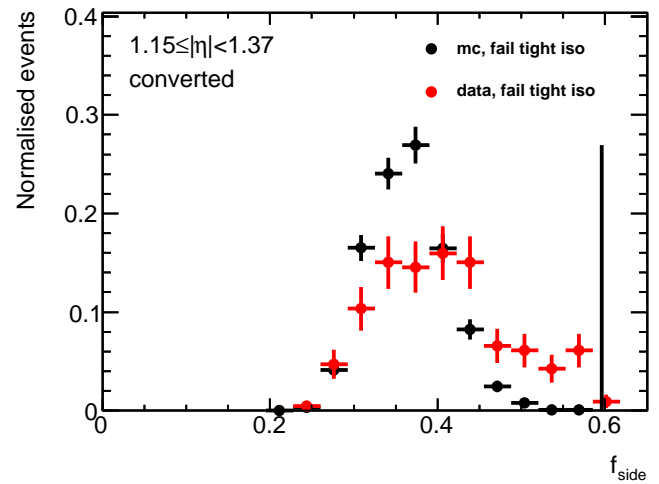
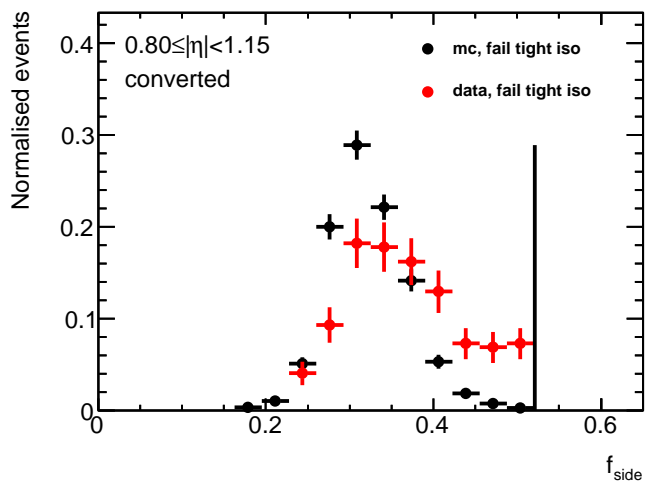
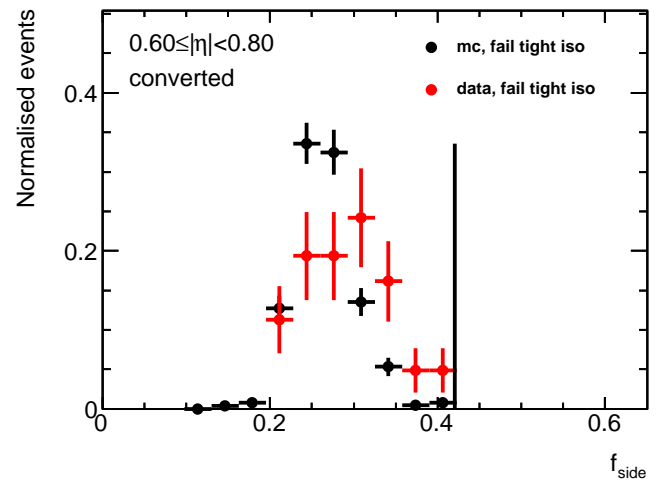
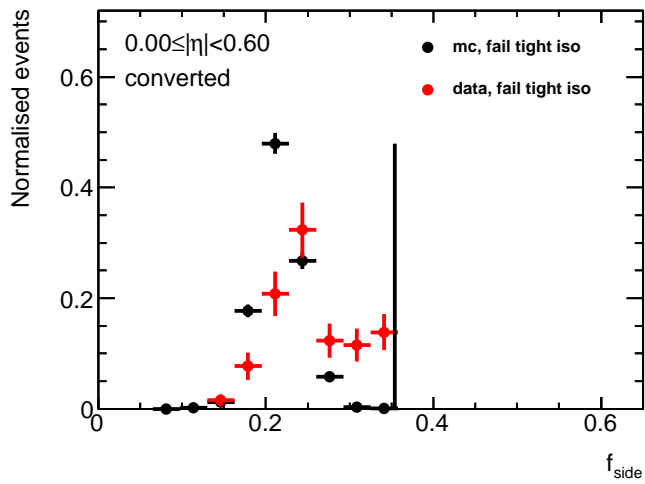
## 2 BB diphotons events

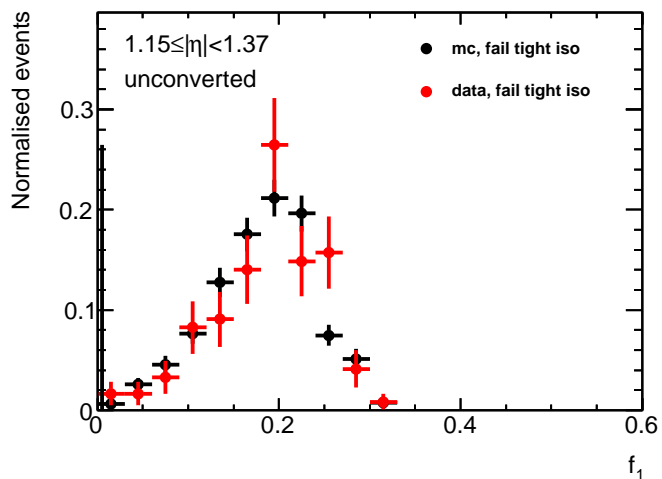
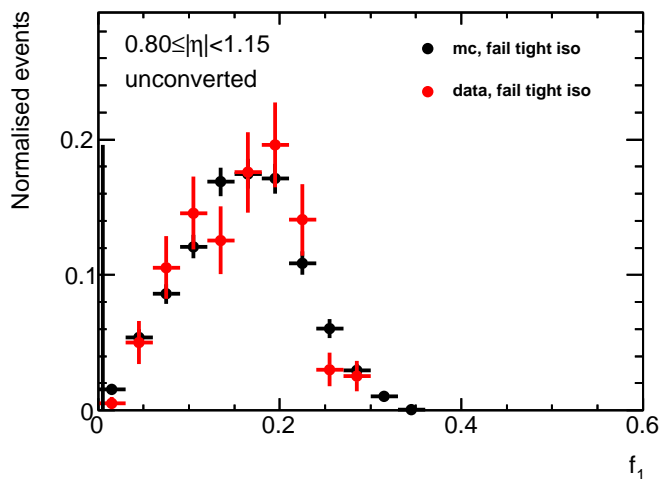
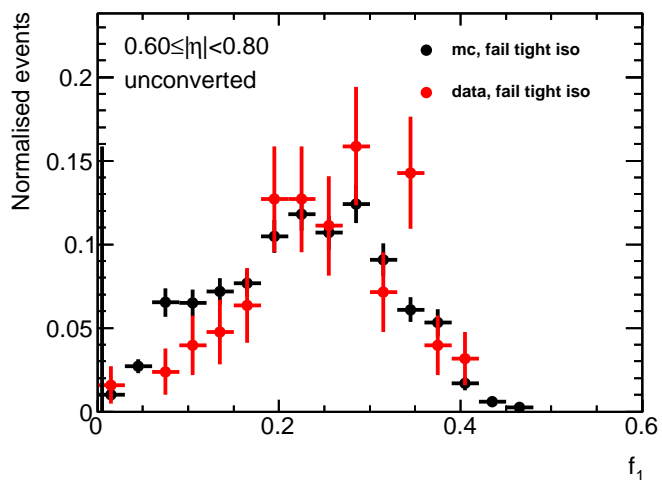
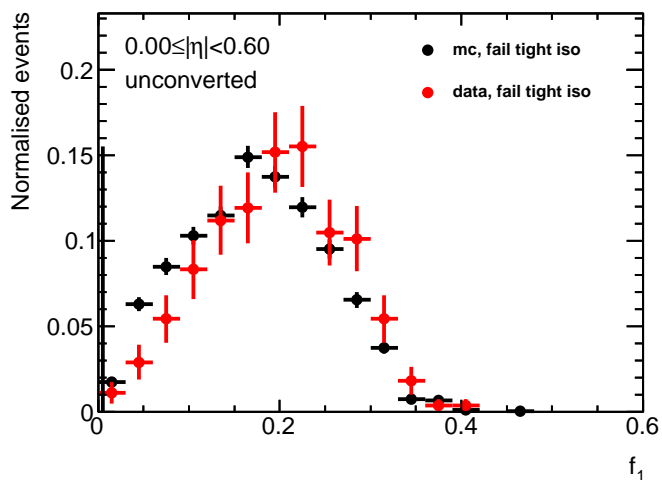
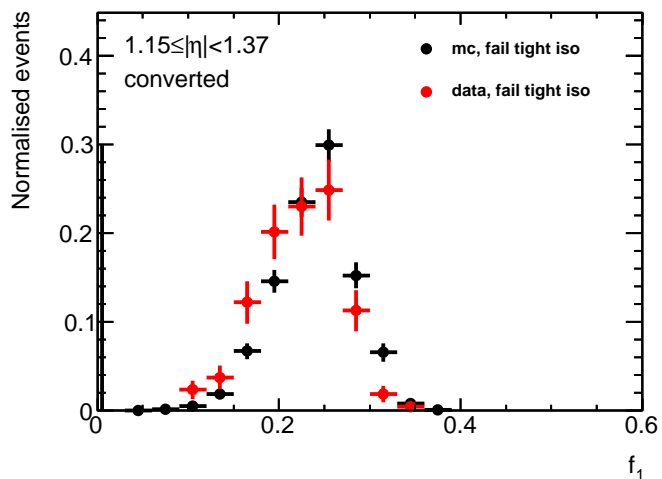
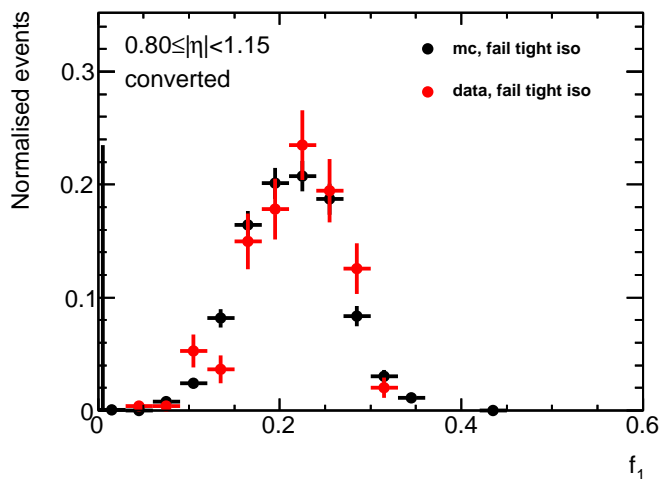
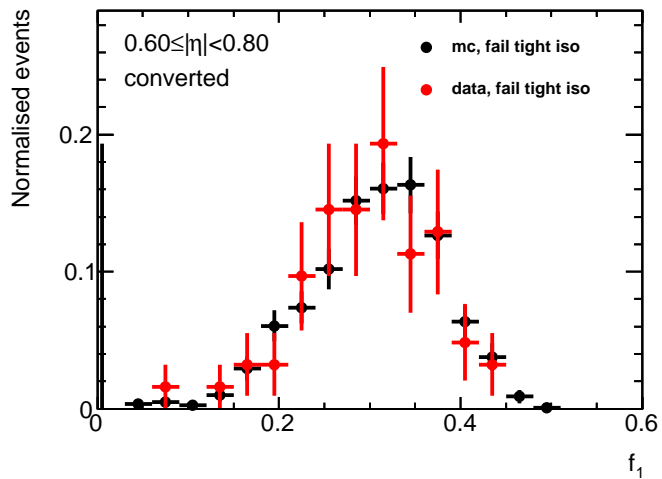
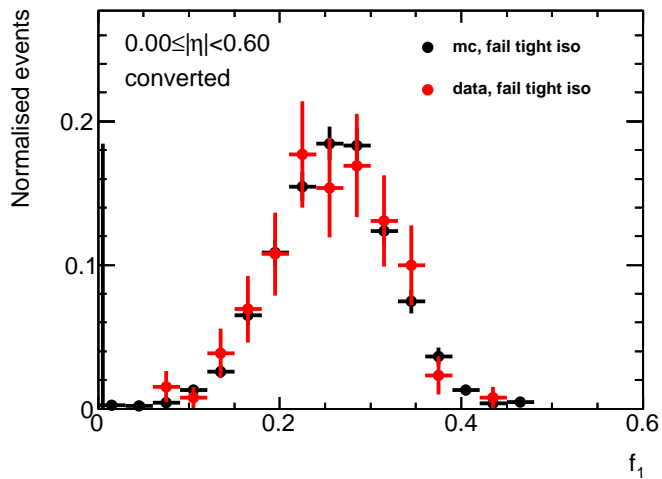
### 2.1 Grey photons (BB)



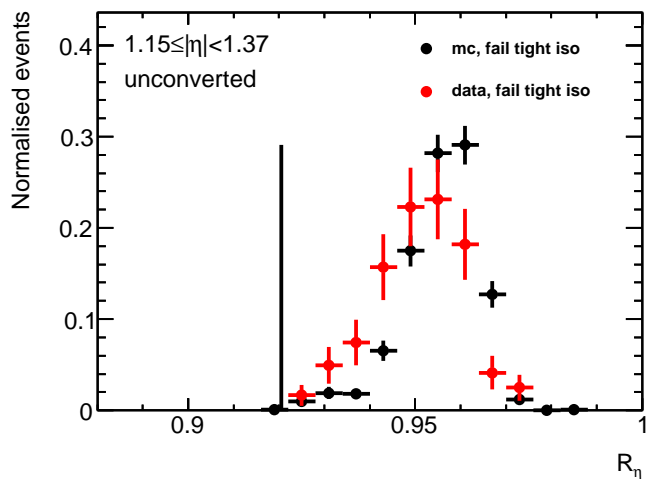
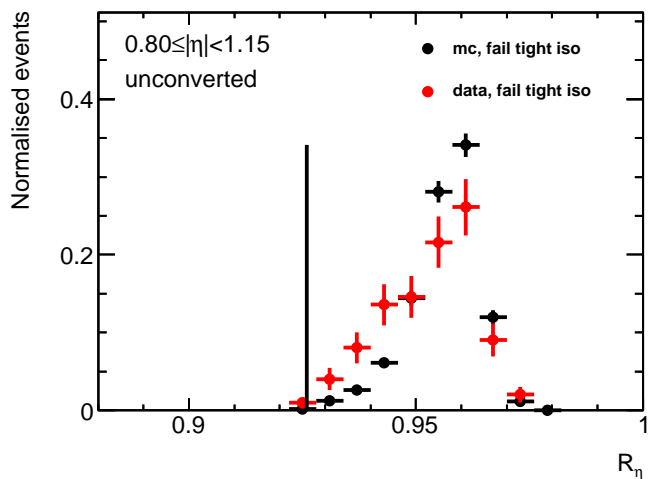
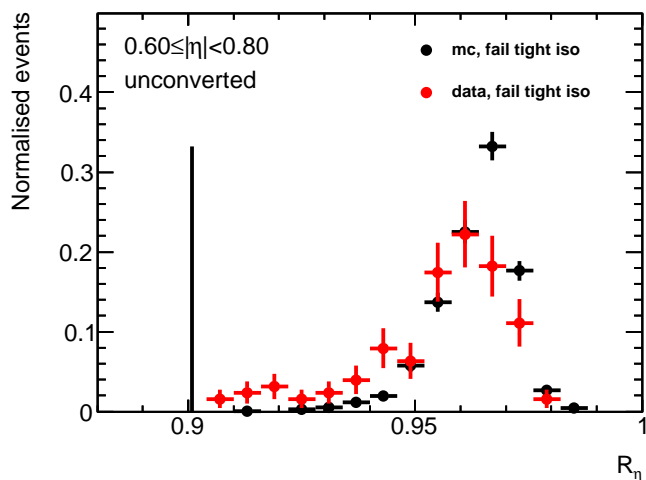
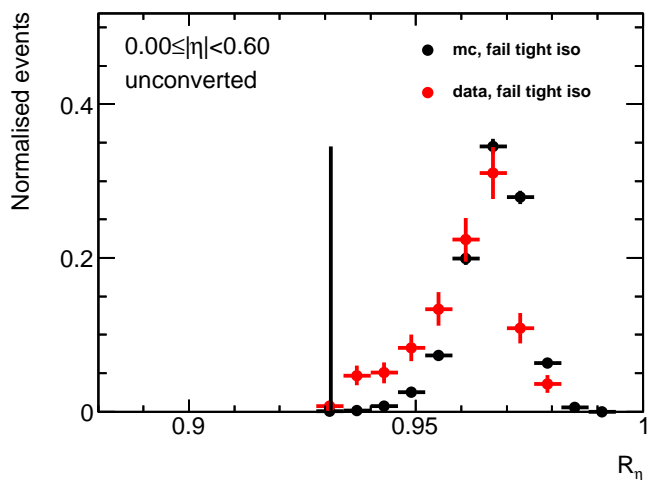
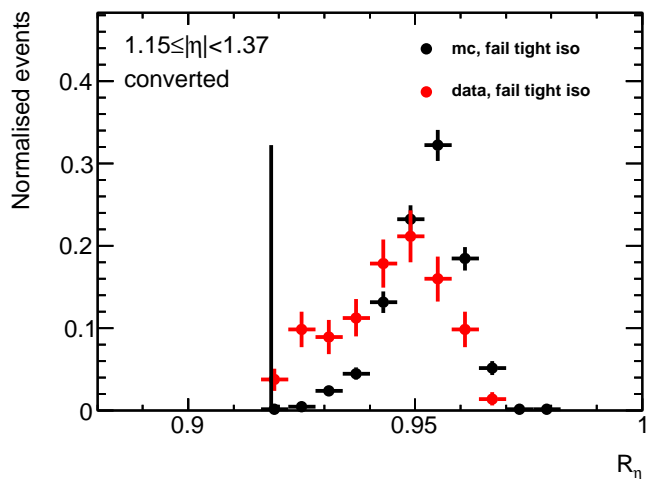
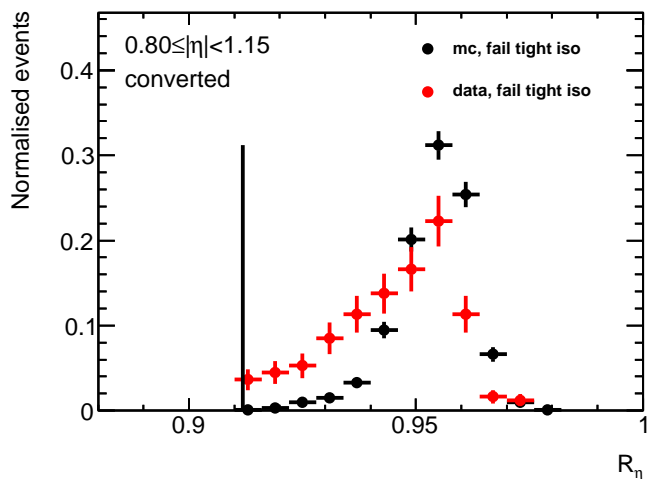
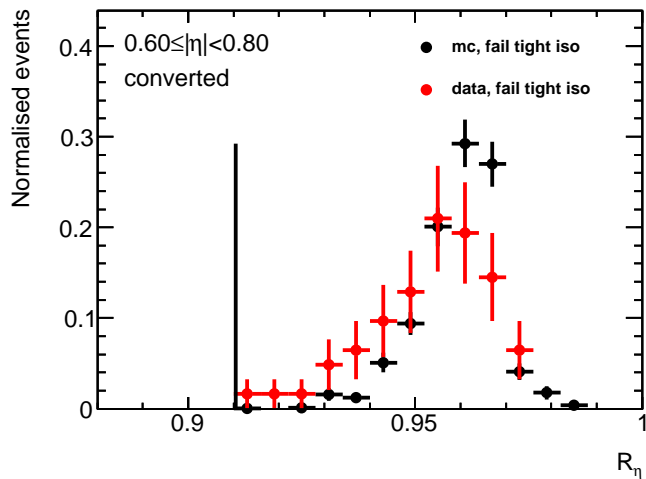
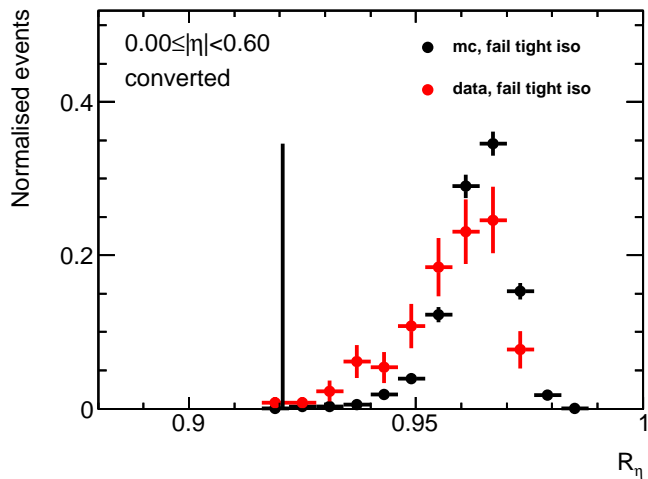


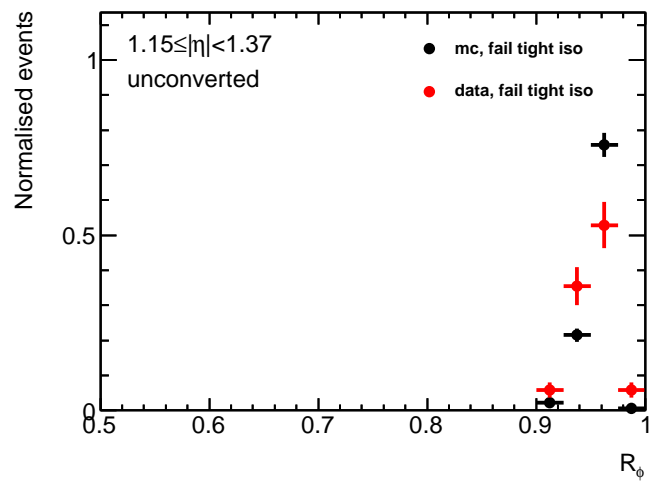
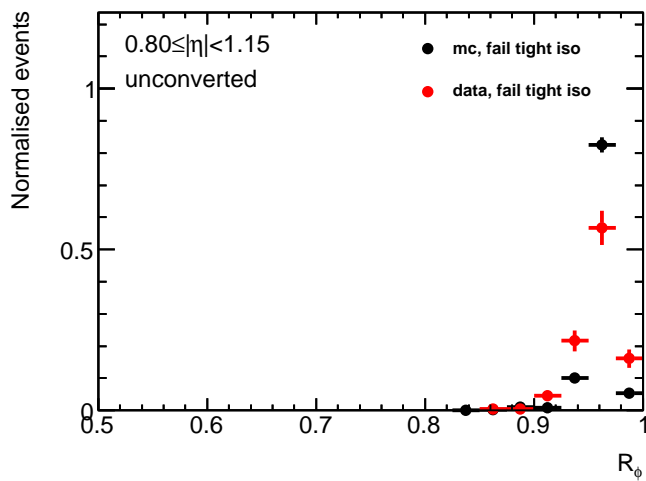
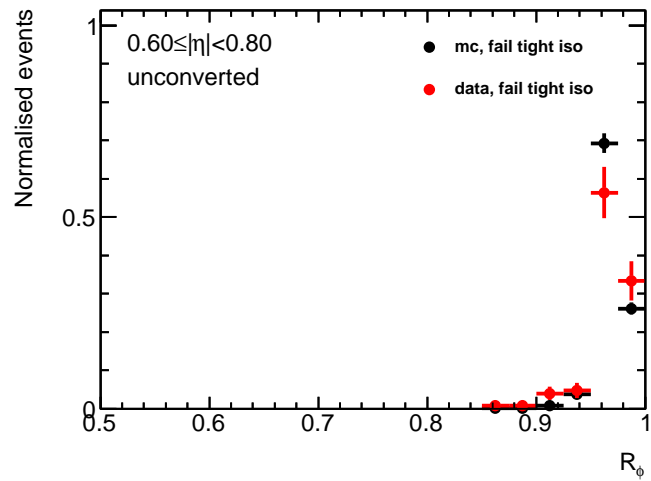
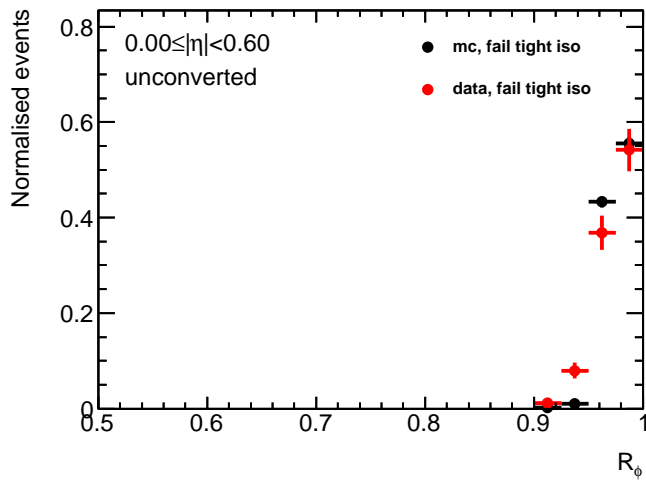
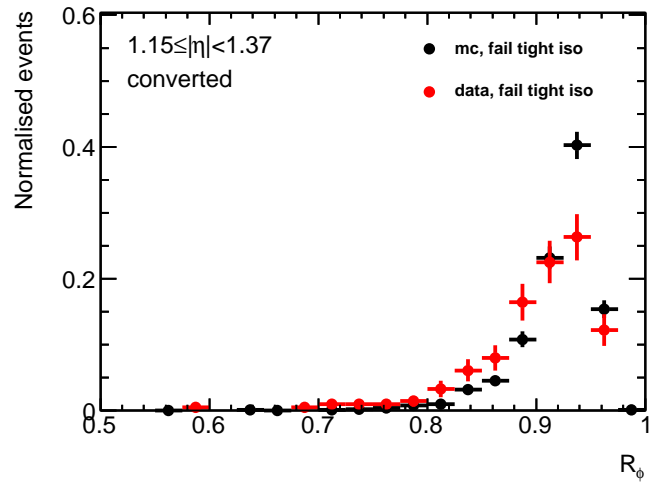
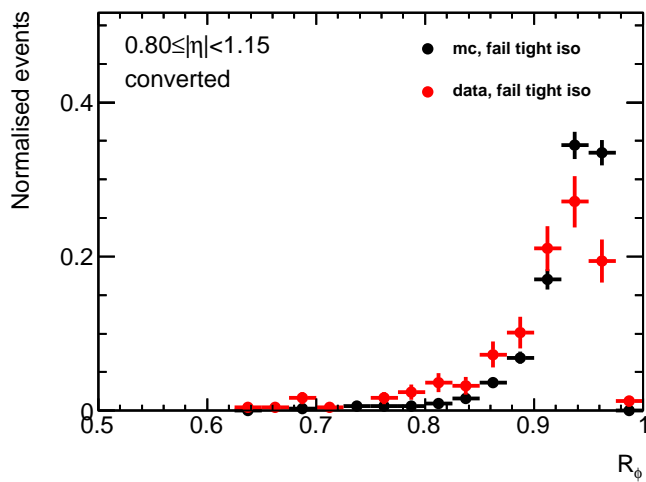
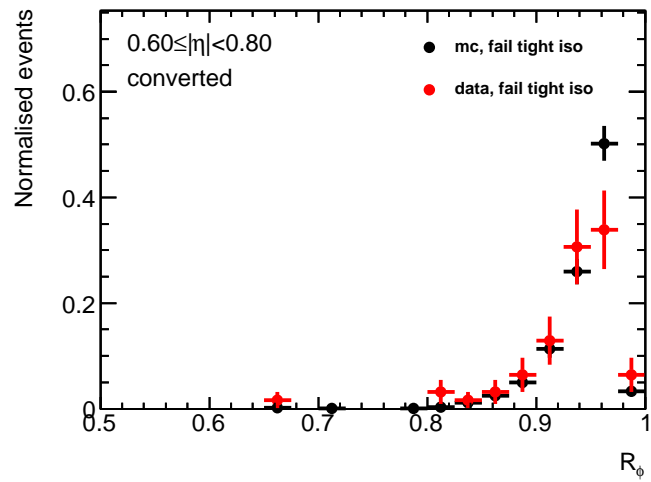
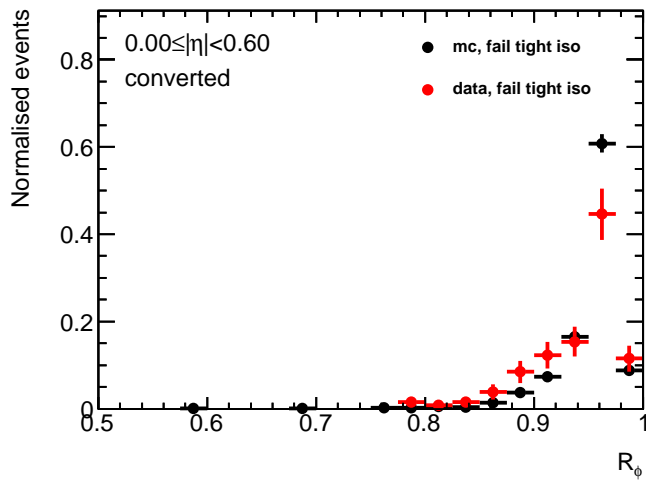


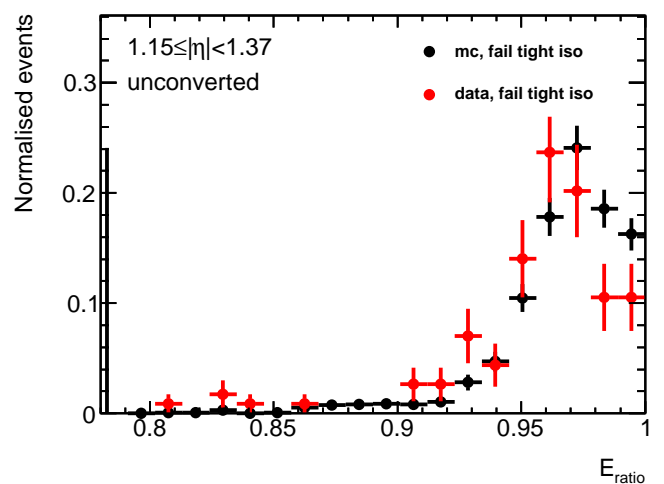
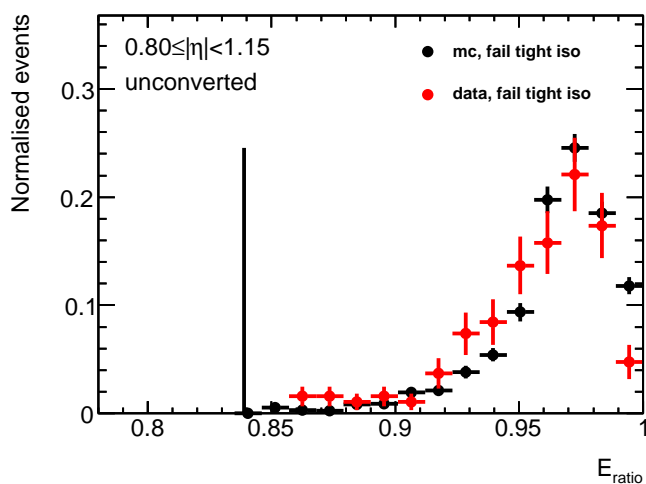
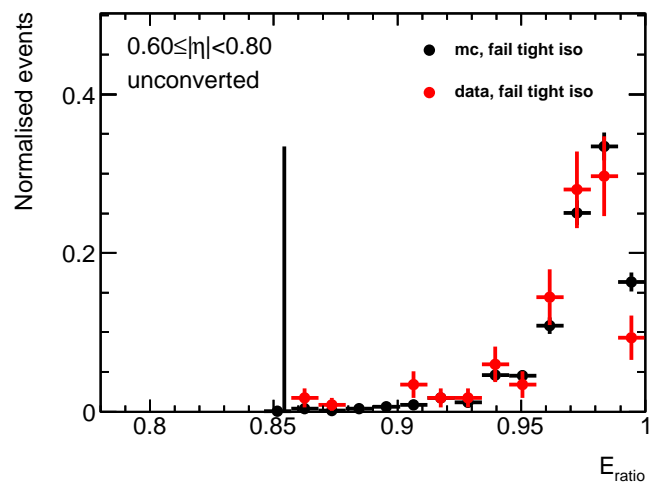
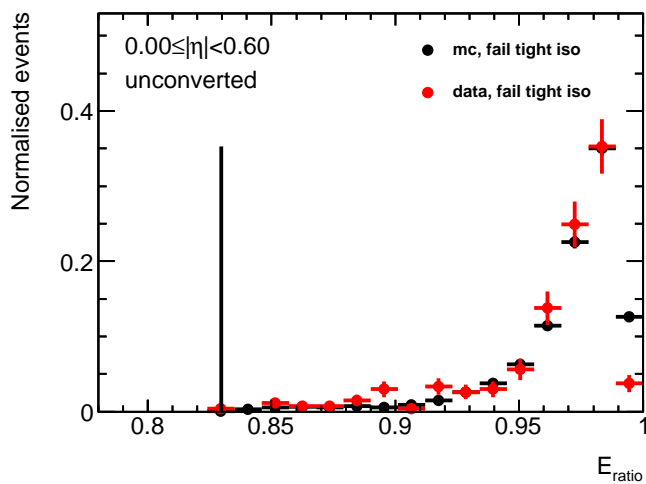
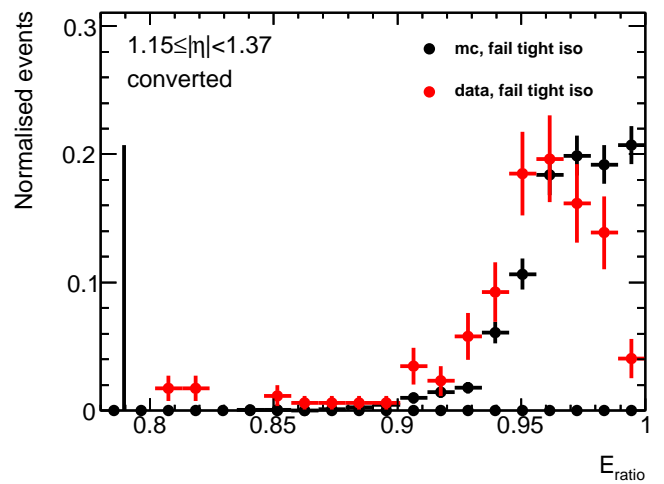
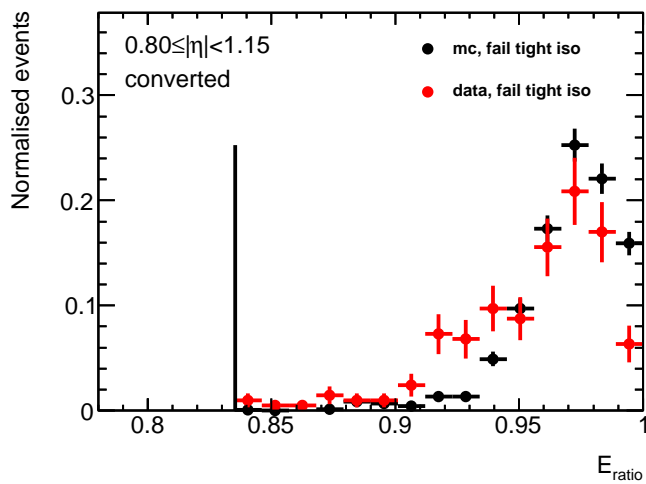
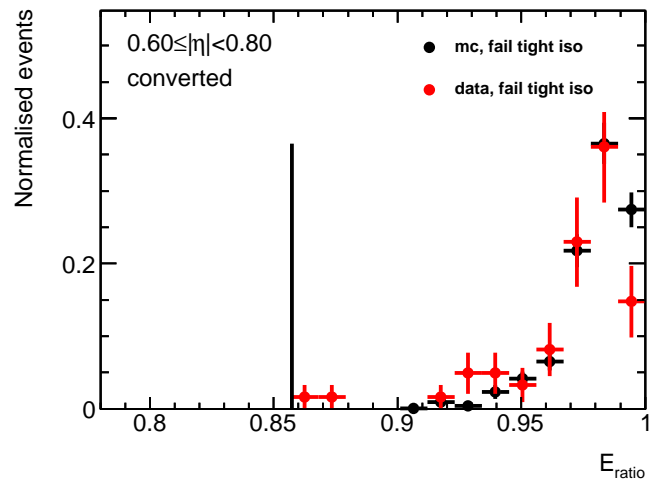
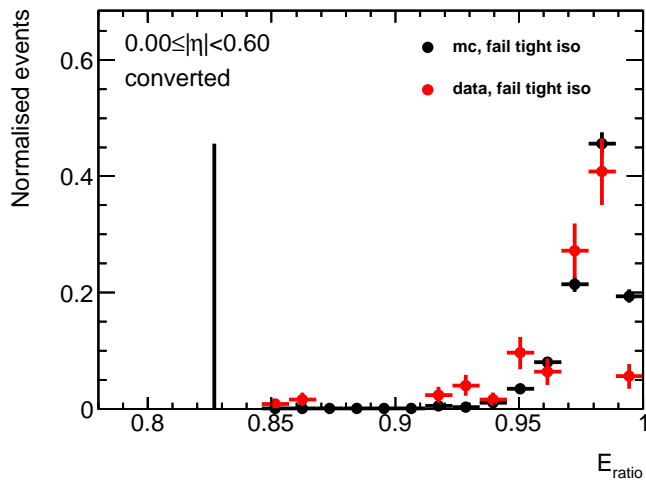


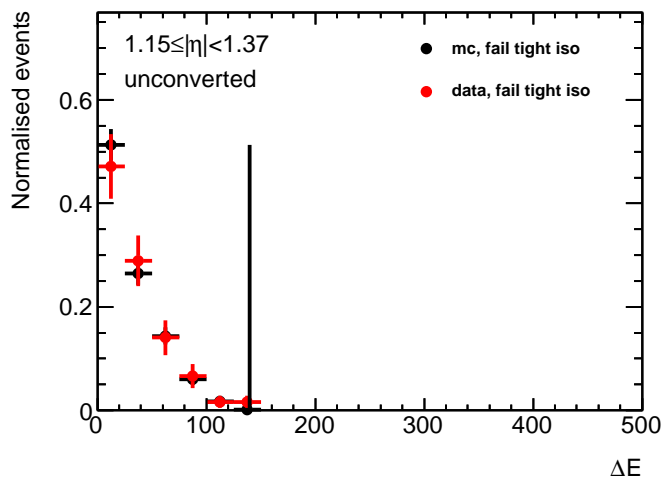
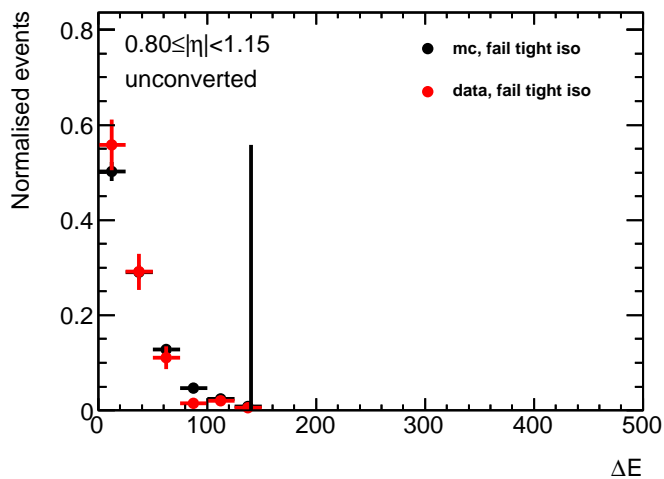
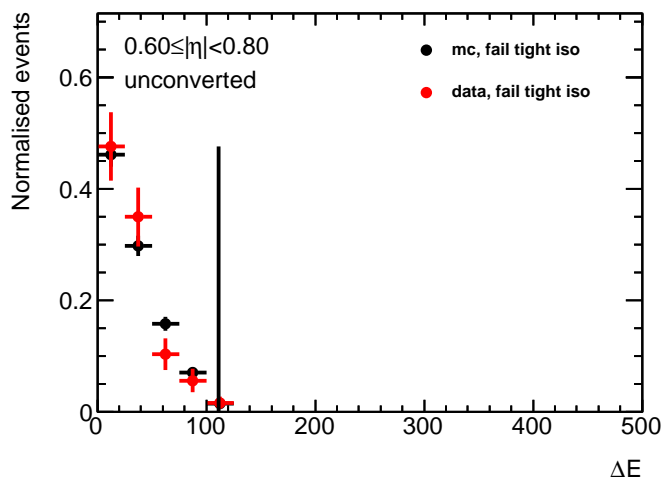
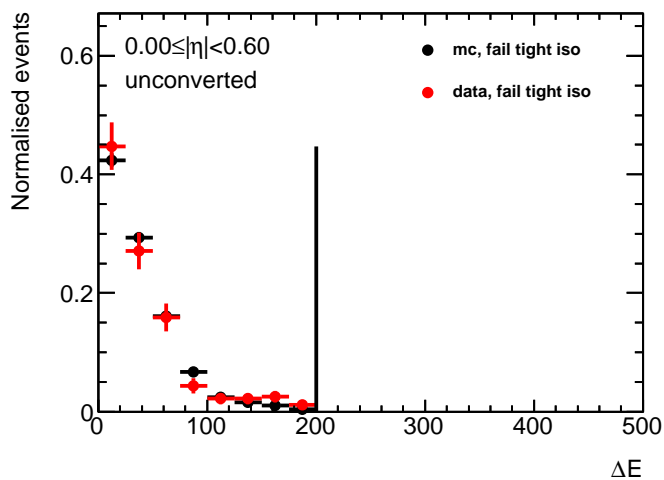
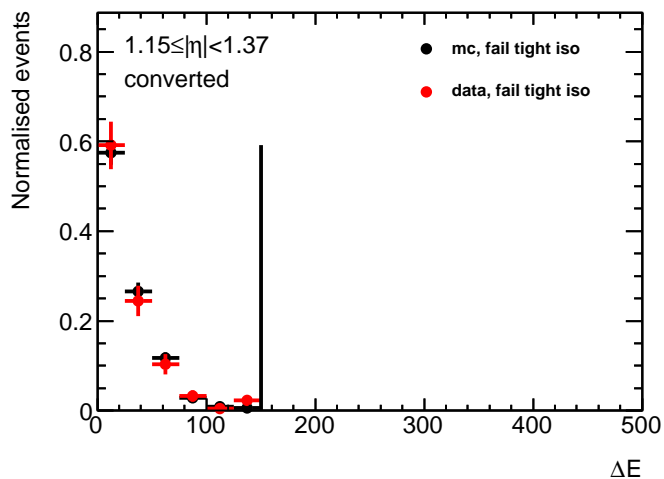
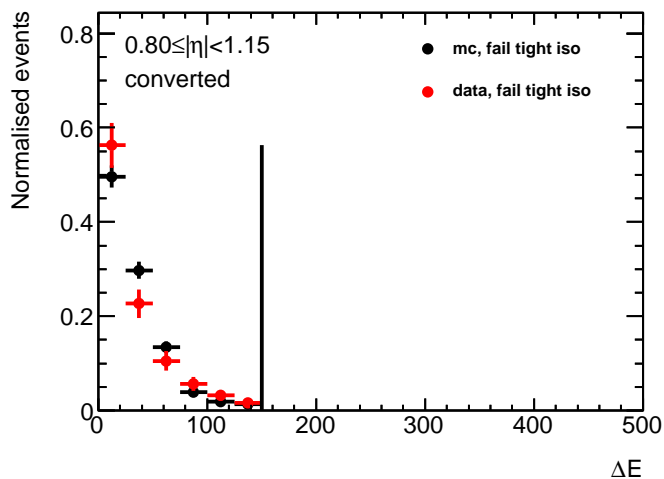
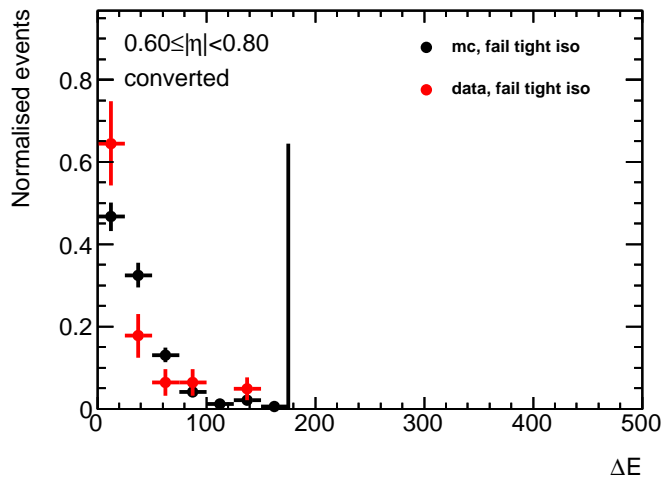
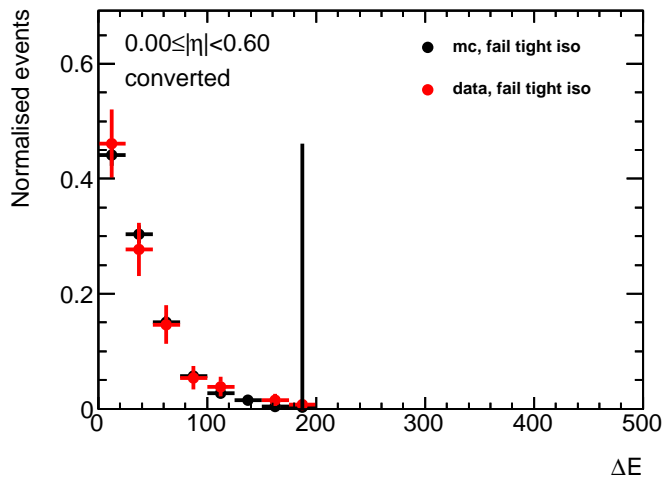












## 2.2 Tightly isolated photons (BB)

