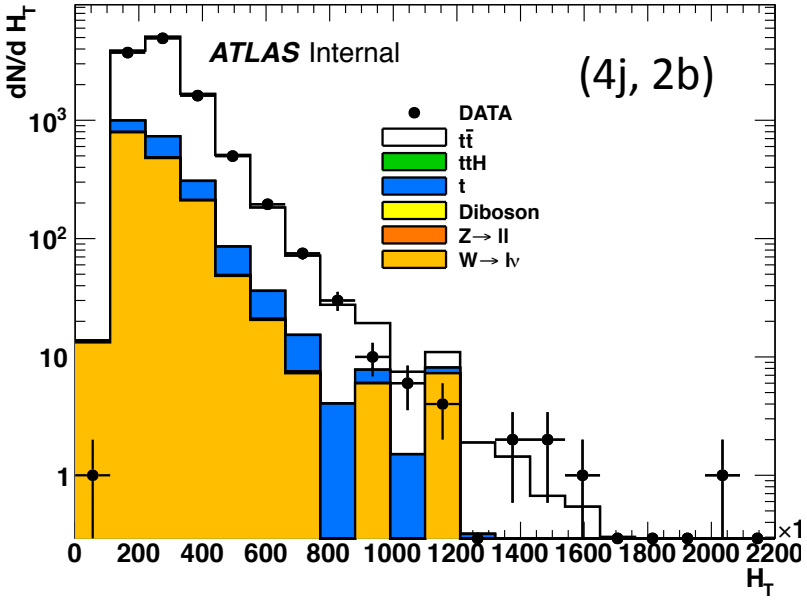
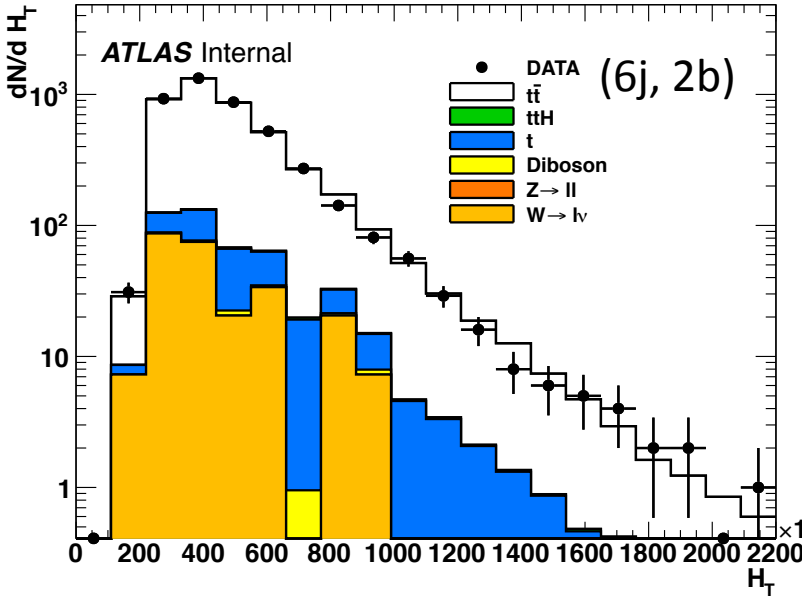
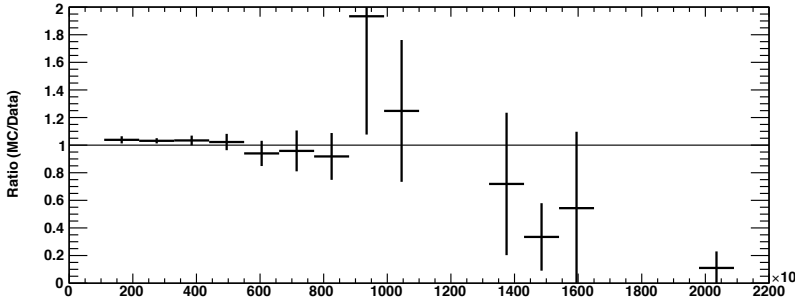
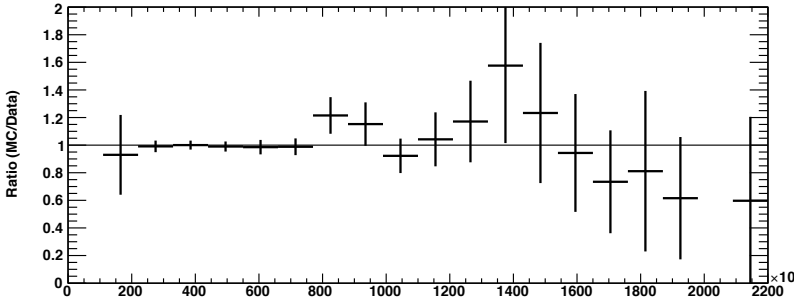
ttH(bb) Boosted Update

H_T, e-jets

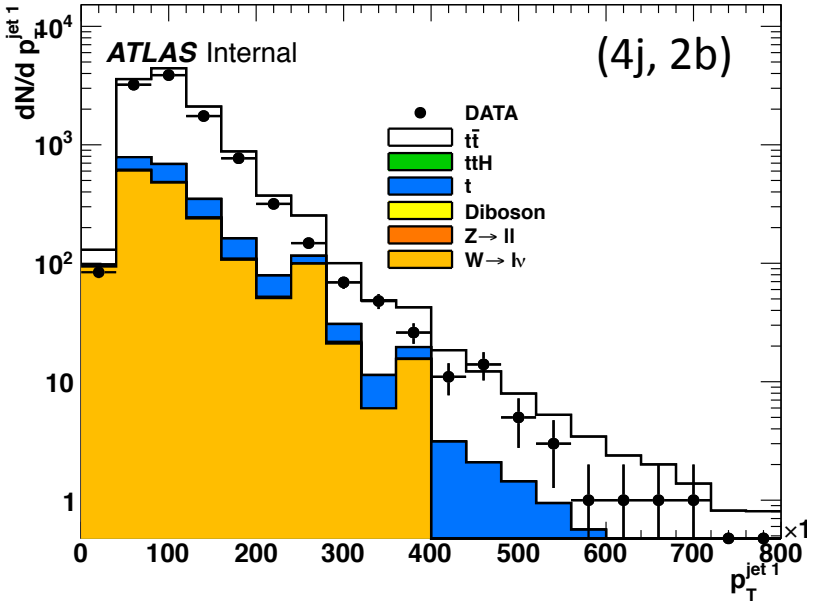

ATLAS Internal
(4j, 2b)
DATA
tt̄
ttH
t
Diboson
Z→ ll
W→ lν
dN/d H_T
H_T

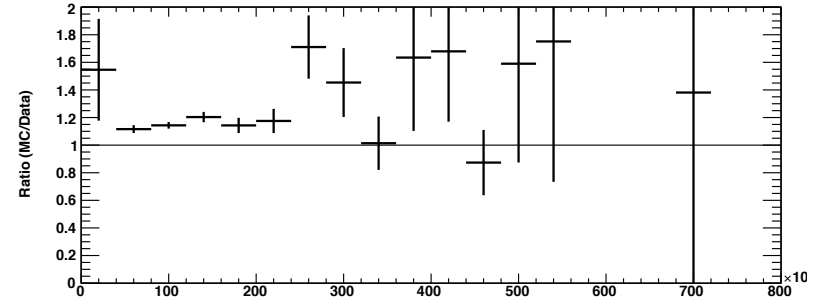

ATLAS Internal
(6j, 2b)
DATA
tt̄
ttH
t
Diboson
Z→ ll
W→ lν
dN/d H_T
H_T

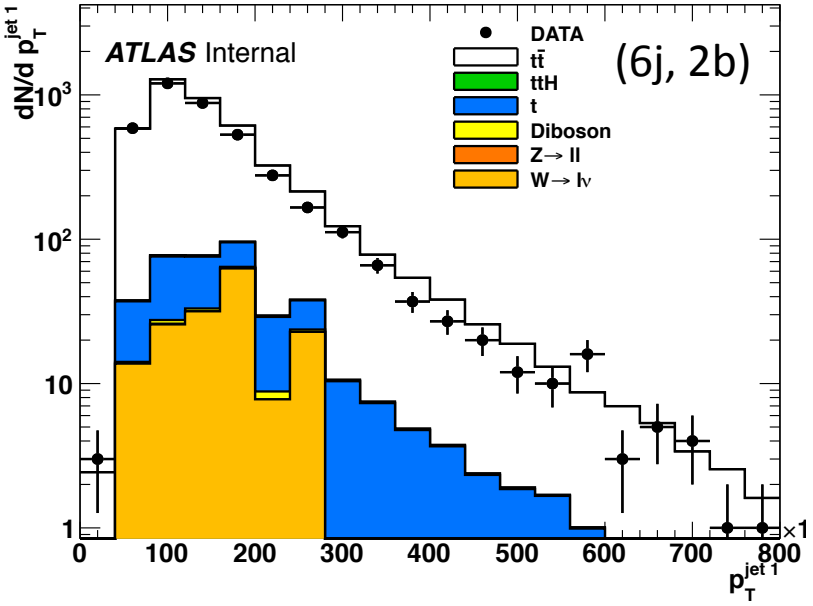

Ratio (MC/Data)

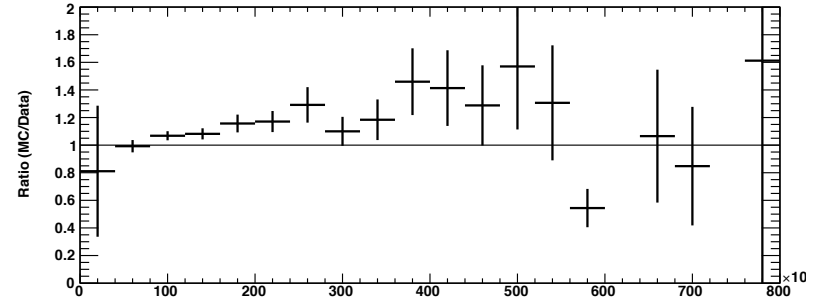

Ratio (MC/Data)

Jet 1 p_T, μ-jets

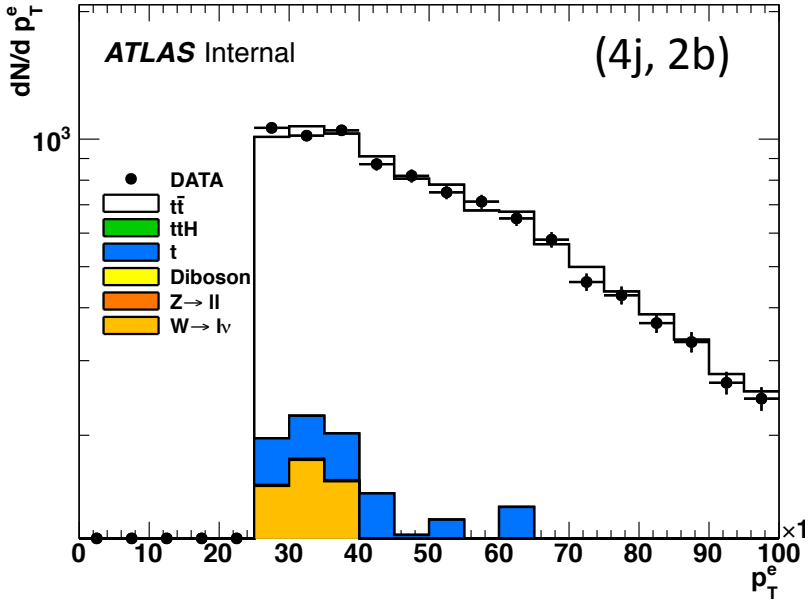


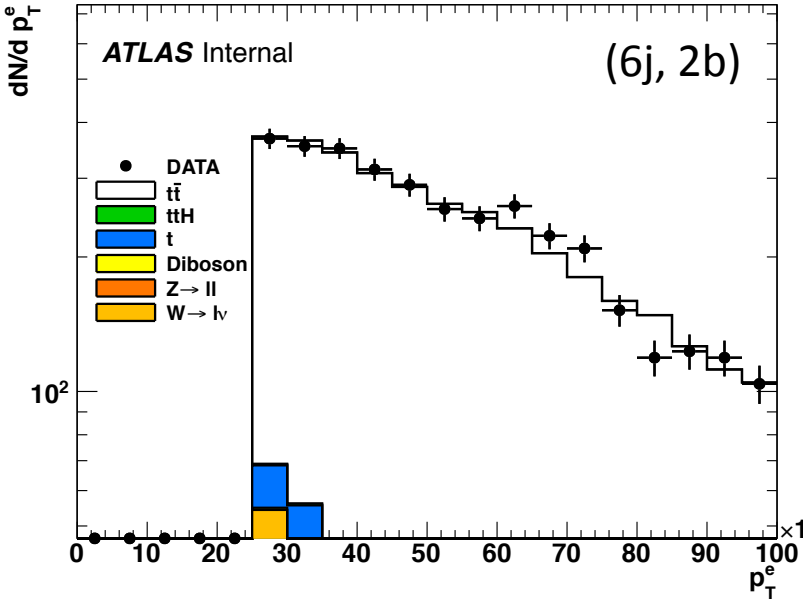


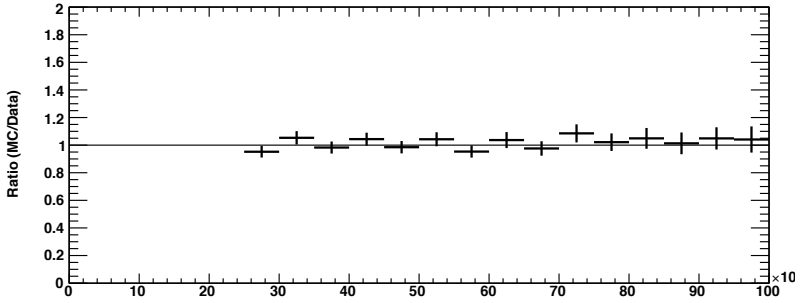


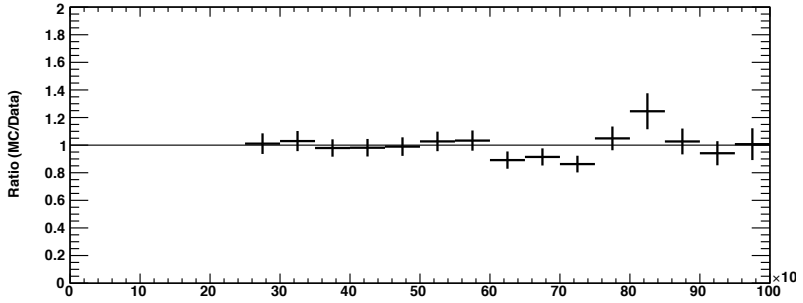


p_T^e, e-jets


ATLAS Internal
(4j, 2b)
dN/d p_T^e
DATA
tt̄
ttH
t
Diboson
Z→ ll
W→ lν
p_T^e

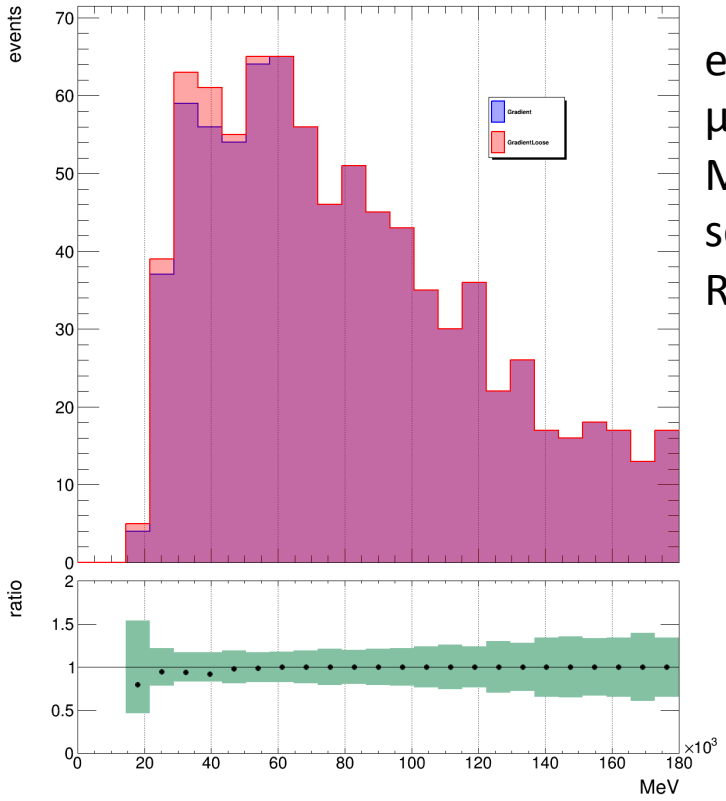

ATLAS Internal
(6j, 2b)
dN/d p_T^e
DATA
tt̄
ttH
t
Diboson
Z→ ll
W→ lν
p_T^e


Ratio (MC/Data)

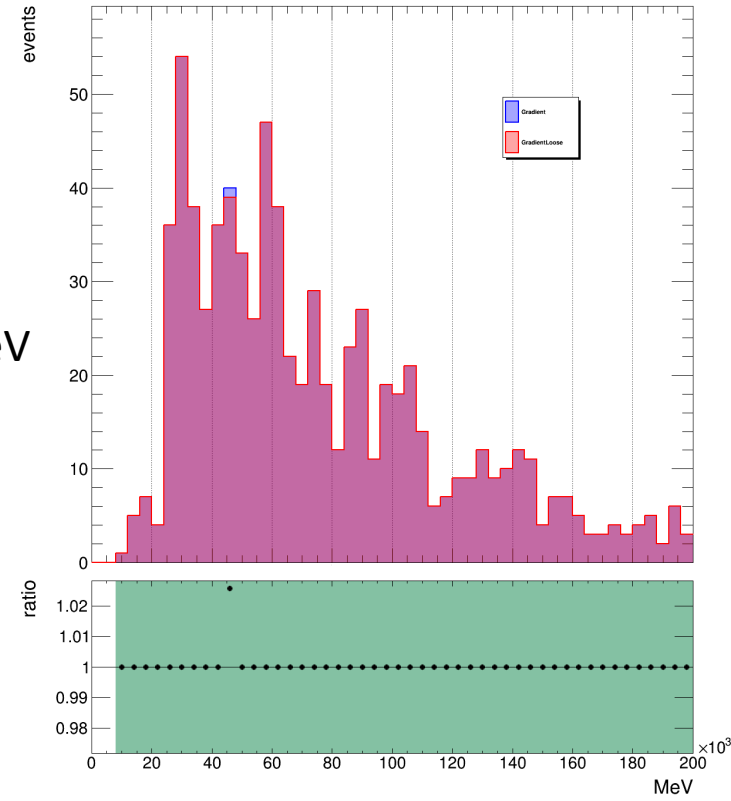

Ratio (MC/Data)

Comparison Between Isolations

- Problems using different electron isolations from before resolved
  - Default (gradient, blue) versus GradientLoose (magenta)



e+jets (left)
μ+jets (right)
MC set: ttH, semileptonic, 341270
Requires:
≥1 fatjet, p_T>250GeV
1 lepton (e or μ)
p_T>25 GeV



Next Steps

- Will run over “Loose”, “Tight” and “LooseTrackOnly”
- Re-plot distributions, e.g. H_T to see effect on data/MC and S/B ratios
- Try changing these default settings to try and maximize S/B in signal region (6j, 2,3,4b) and maintain data/MC ratio
- Also: German classes start next week!