- Ntuples produced using CxAOD tag r33-22

- Samples used: Radion and all bkg (Zjets, diboson, Wjets, single top, ttbar)

- Selection applied: merged ggF LP untagged ZZSR

```
selectionMergedGGFZZLPuntagSR = 'Pass_MergLP_GGF_ZZ_Untag_SR == True and Pass_MergHP_GGF_ZZ_Tag_SR == False a\
nd Pass_MergHP_GGF_ZZ_Untag_SR == False and Pass_MergHP_GGF_WZ_SR == False and Pass_MergLP_GGF_ZZ_Tag_SR == False\
 and Pass_MergHP_GGF_ZZ_Tag_ZCR == False and Pass_MergHP_GGF_WZ_ZCR == False and Pass_MergHP_GGF_ZZ_Untag_ZCR == \
False and Pass_MergLP_GGF_ZZ_Tag_ZCR == False and Pass_MergLP_GGF_ZZ_Untag_ZCR == False and Pass_MergLP_GGF_WZ_SR\
 == False and Pass_MergLP_GGF_WZ_ZCR == False'
```
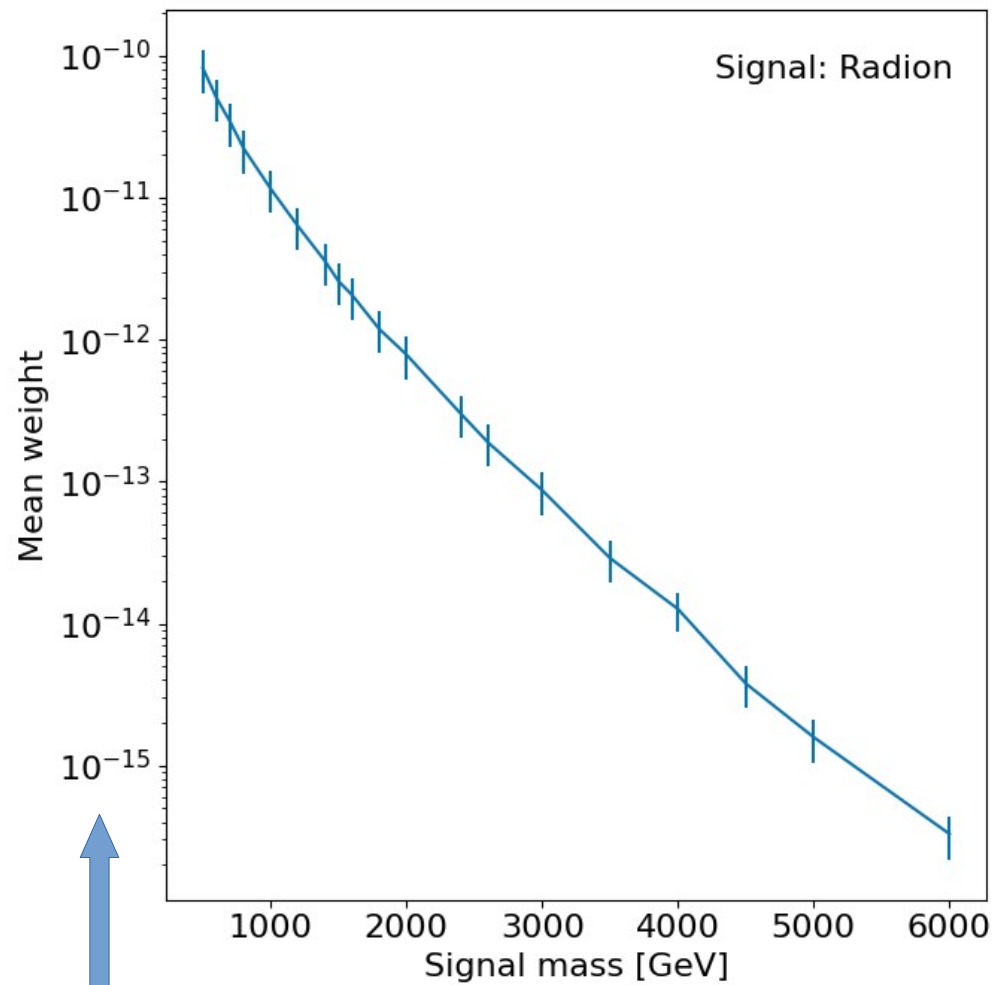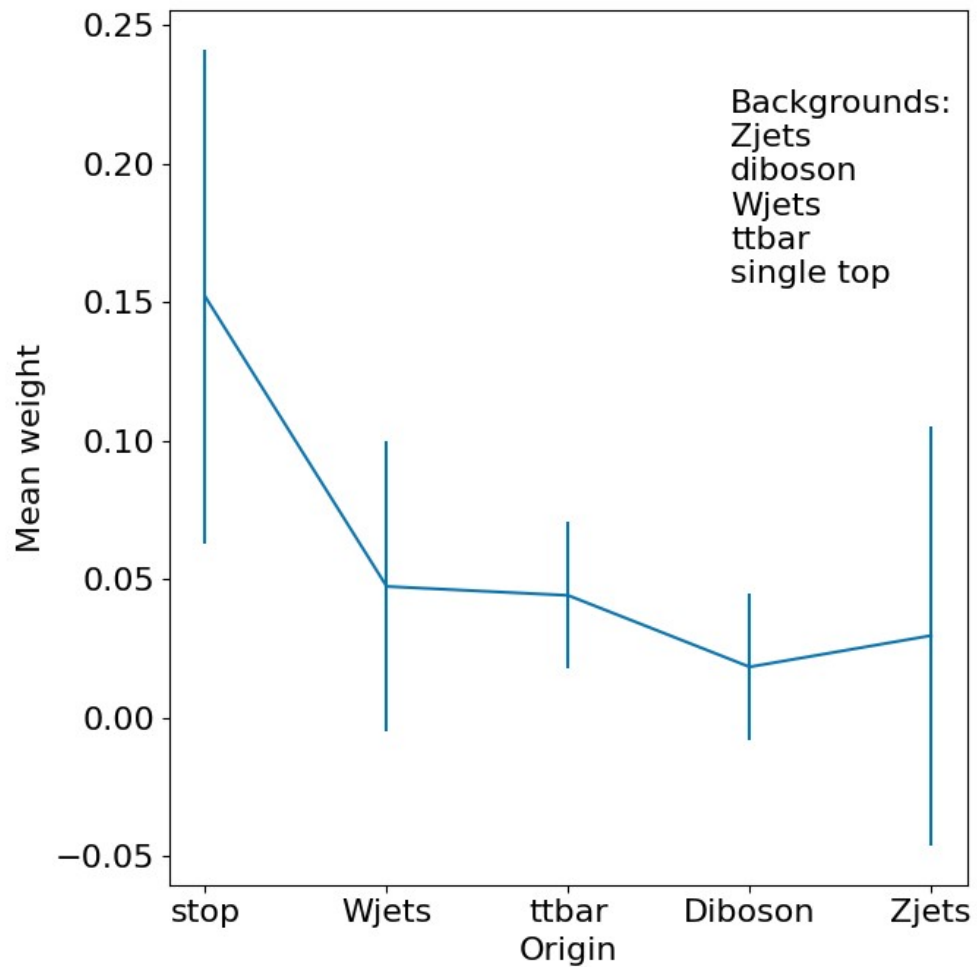
- Do we understand the "weight" column and obtain a plot similar to
  https://atlas.web.cern.ch/Atlas/GROUPS/PHYSICS/PAPERS/HDBS-2018-10/fig_11g.png ?
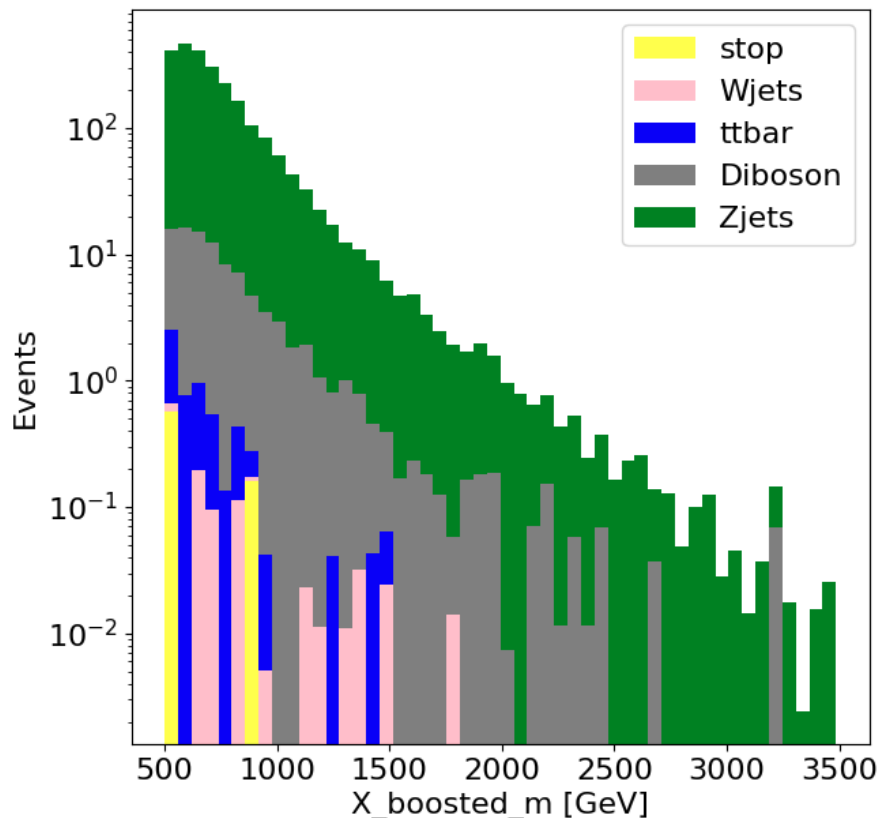
Our result, obtained weighting the histograms with the "weight" column and considering only 500 < X_boosted_m < 3500 (50 bins)
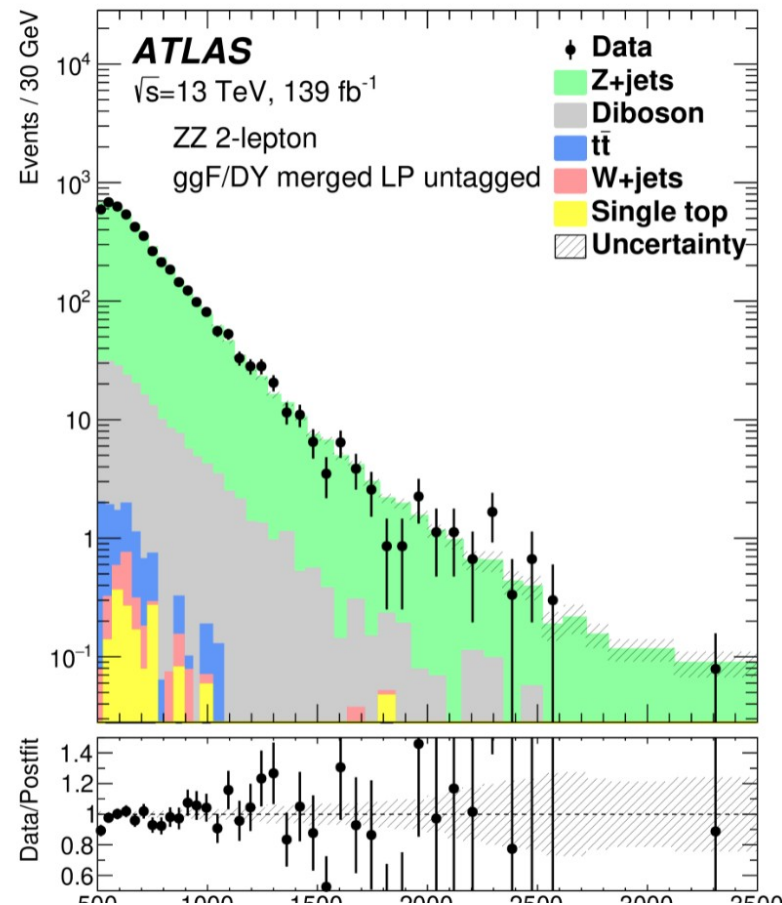
We conclude that we understand how to use the MC weights

Why so low? Ask Robert

weight

Weights distribution for Radion-0 in mc16a (without any selection)

htemp	
Entries	122364
Mean	9.204e−11
Std Dev	9.421e−11

weight