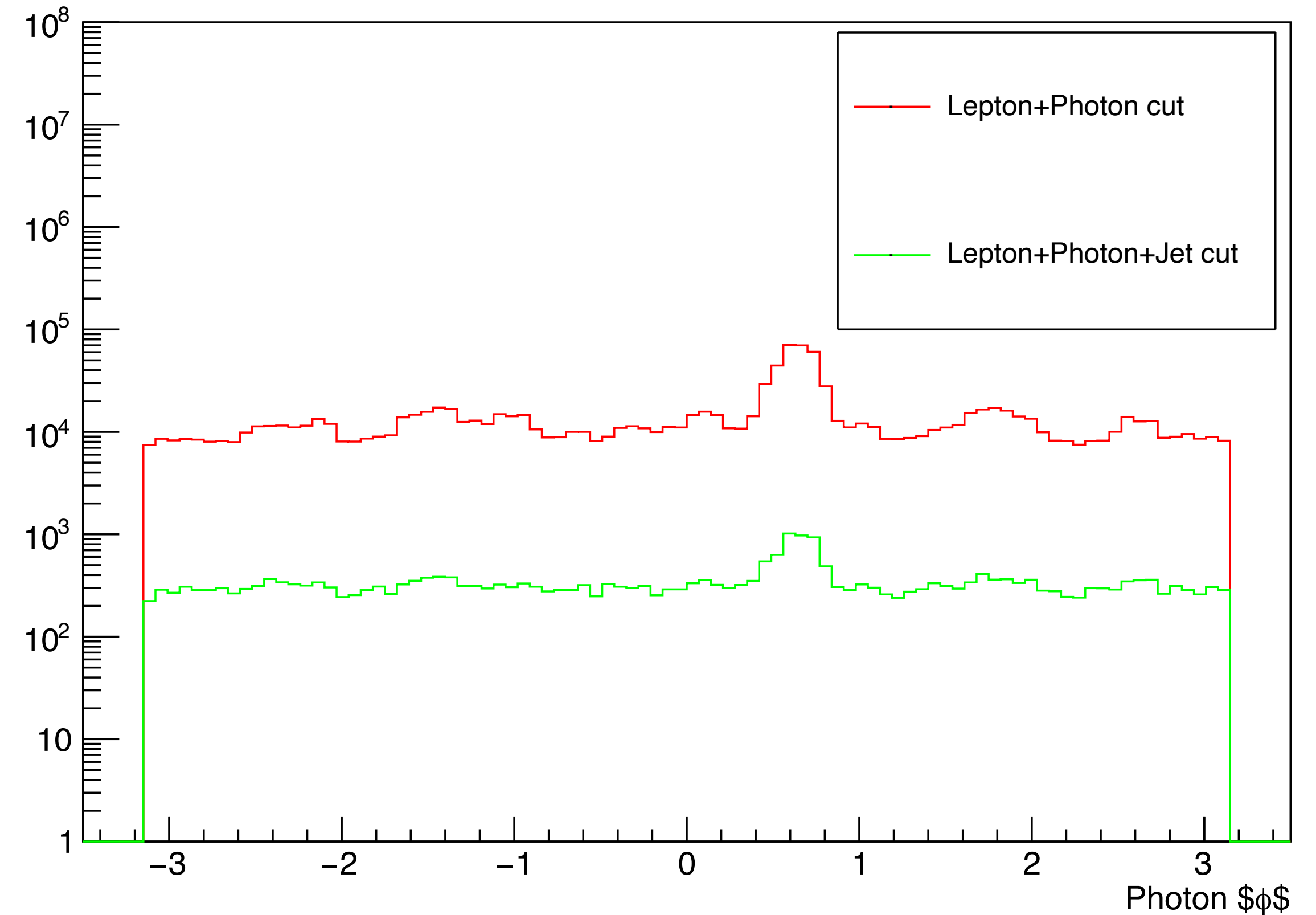
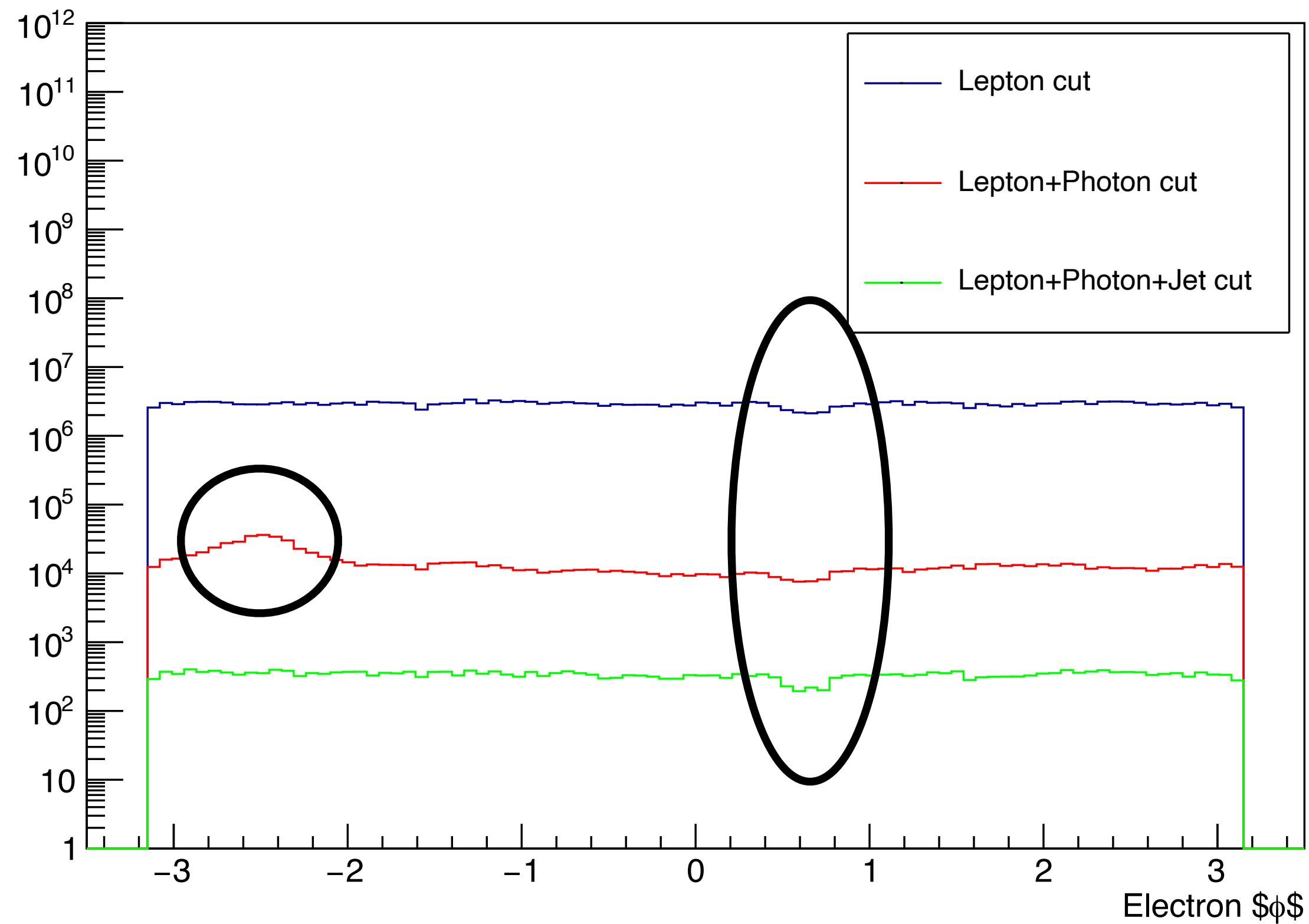


Glance at electron data

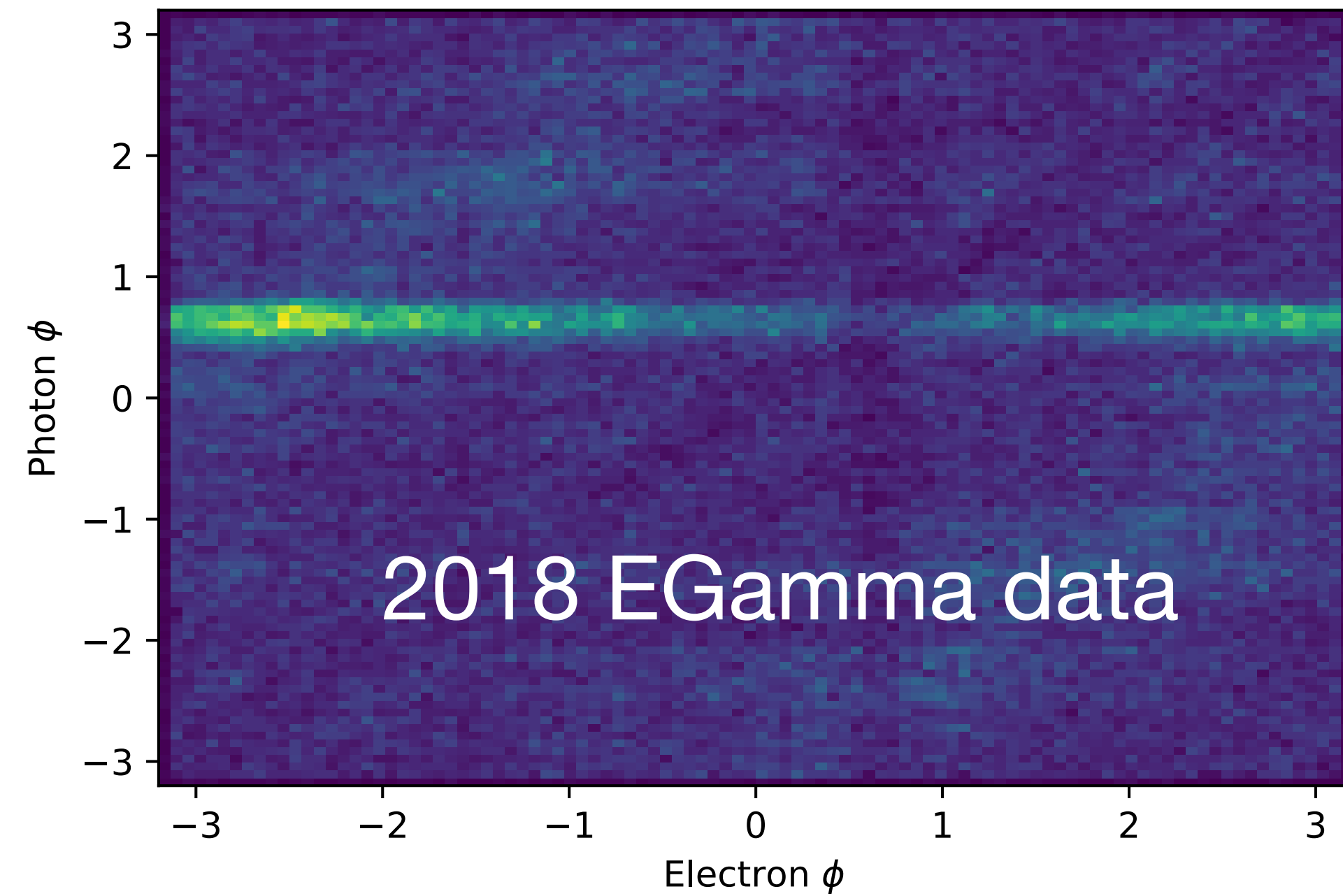
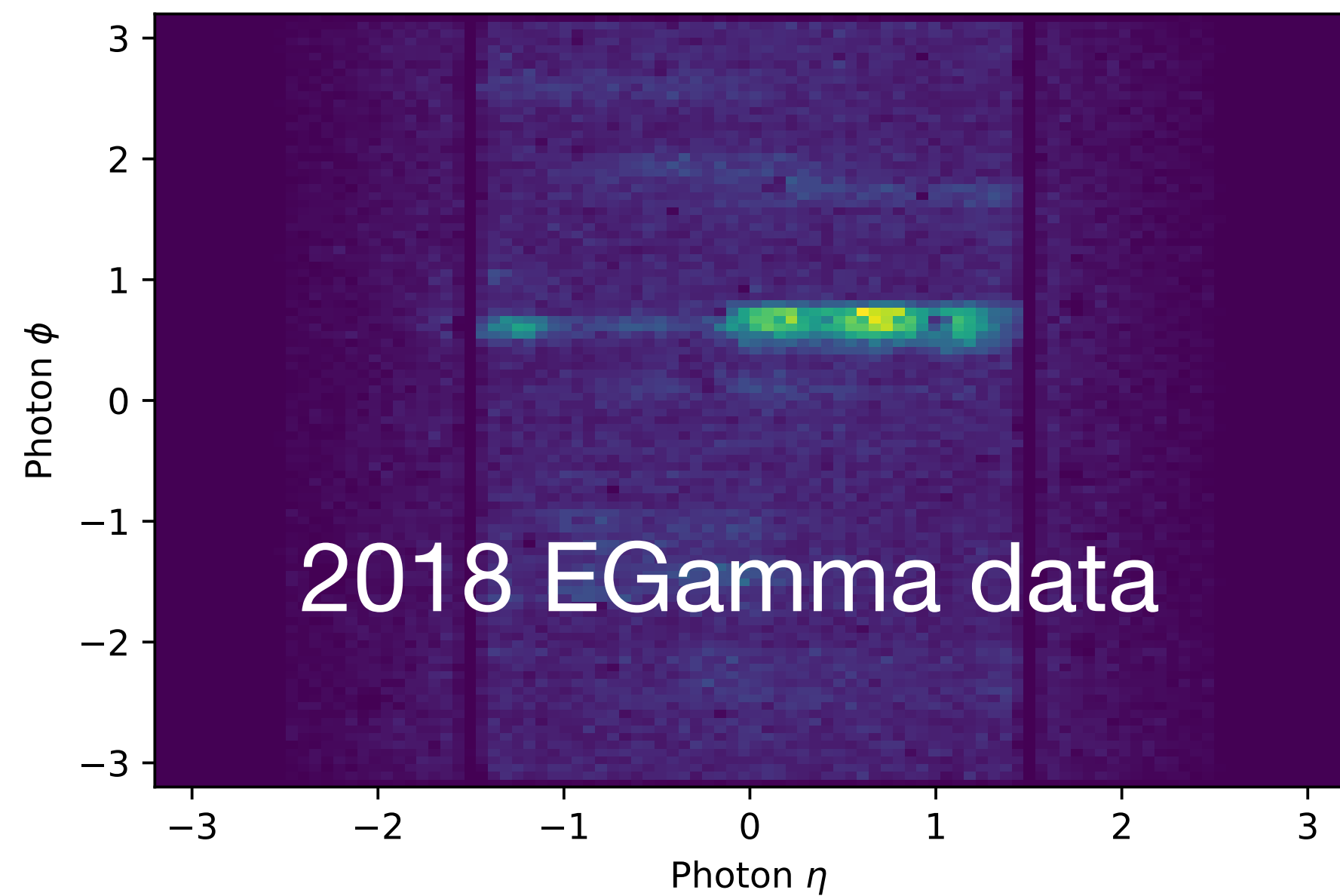
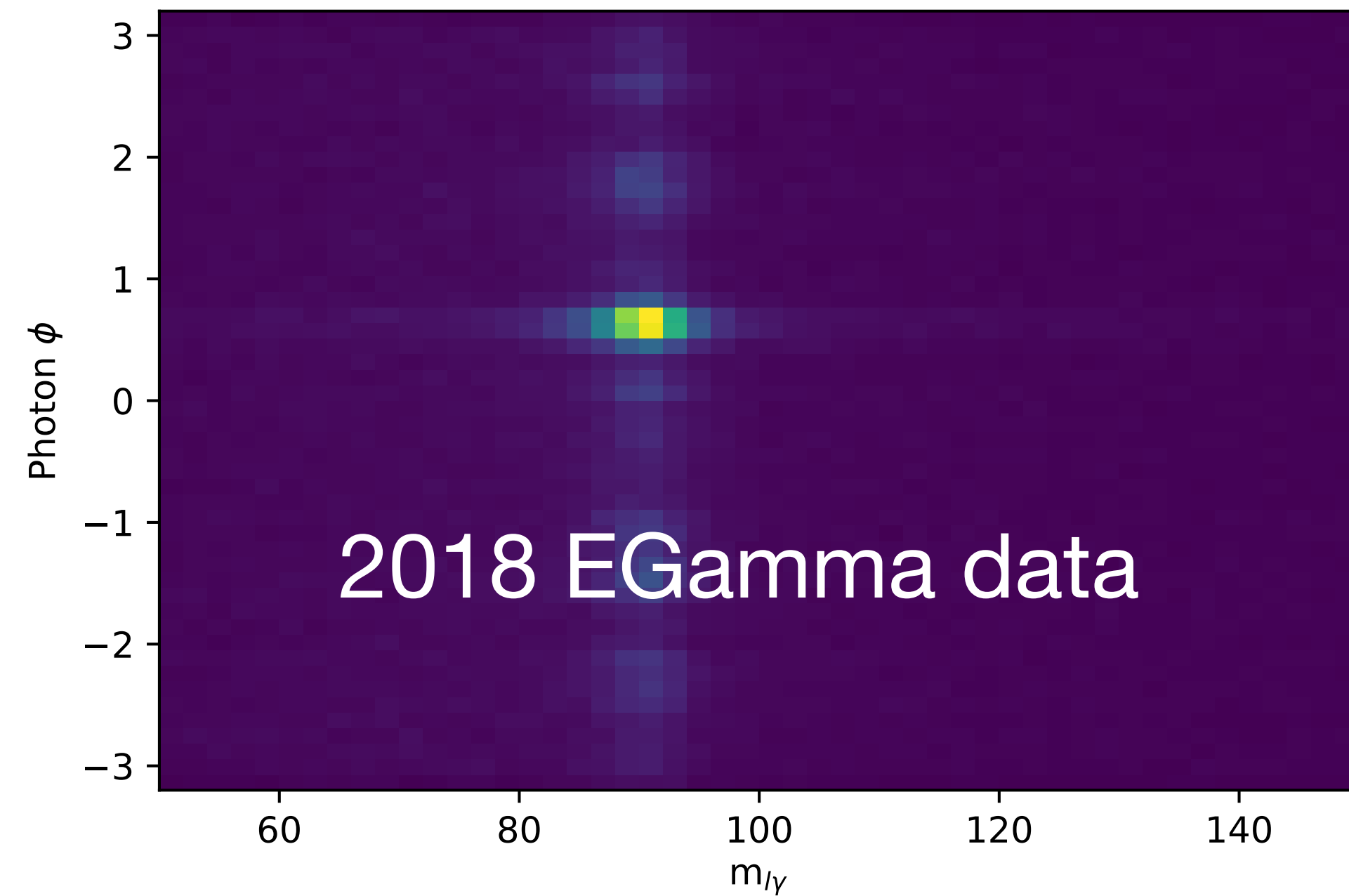
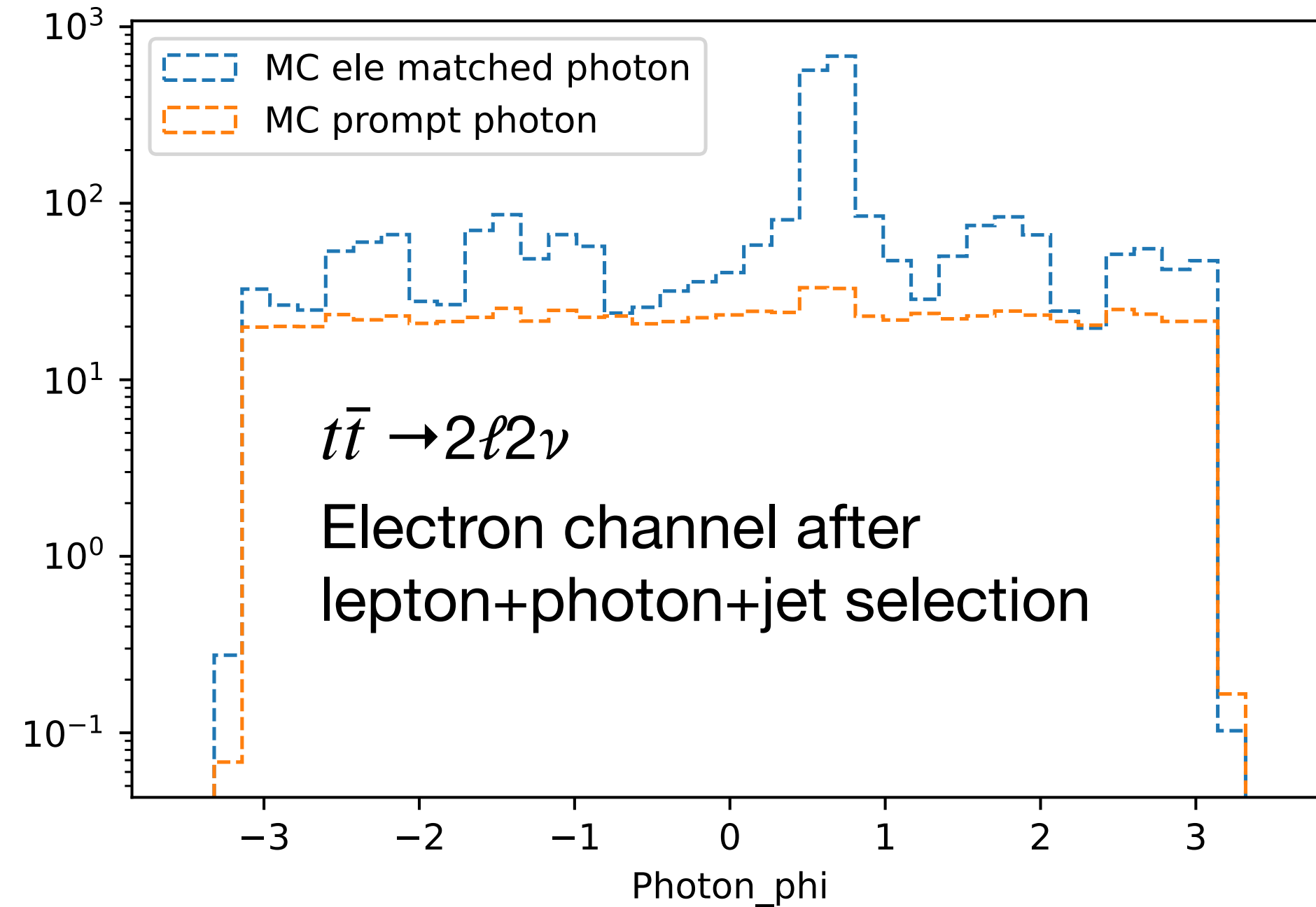
1

2018 EGamma data



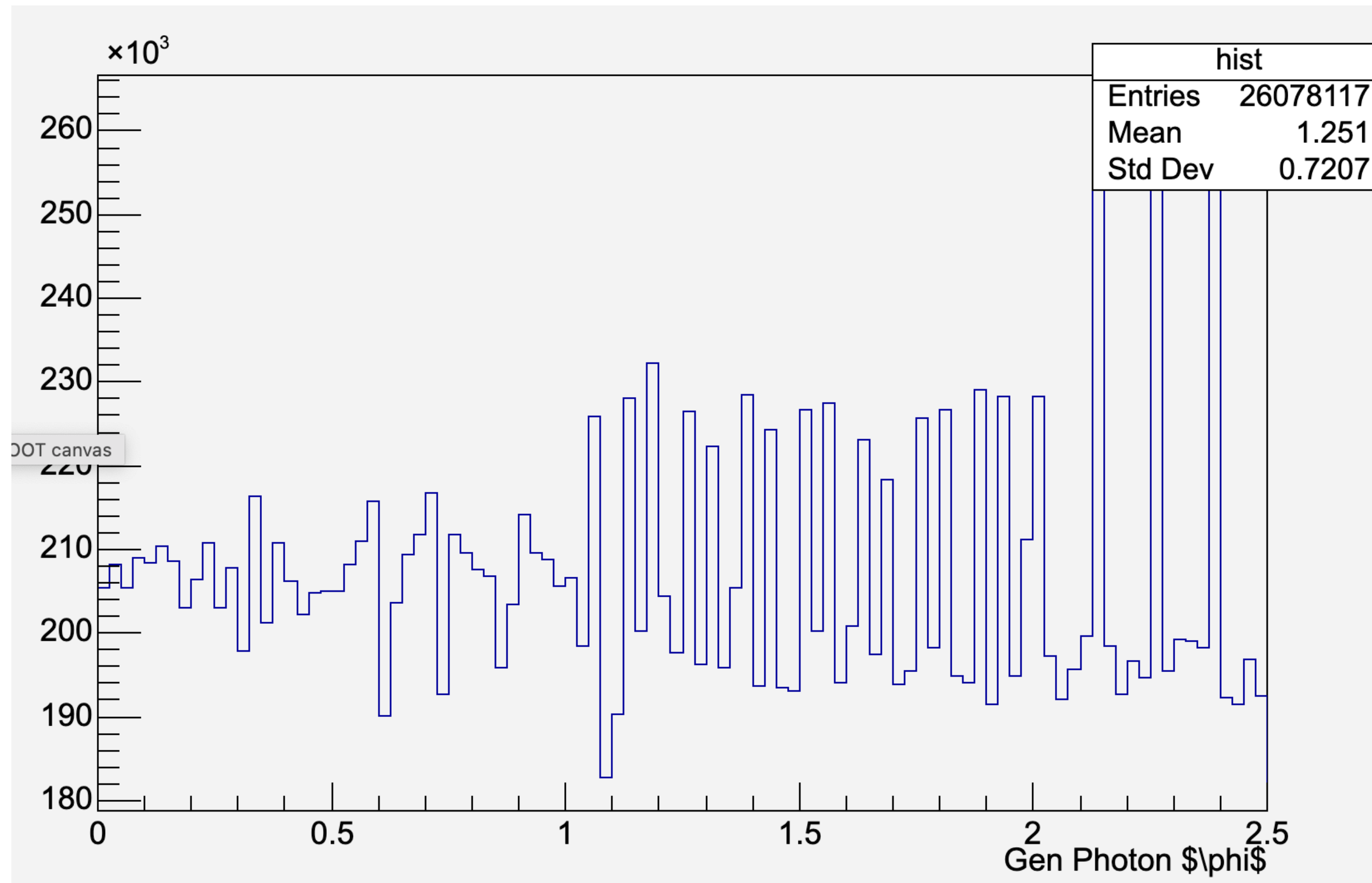
Photon ϕ spike in electron

2



backup

Generator phi

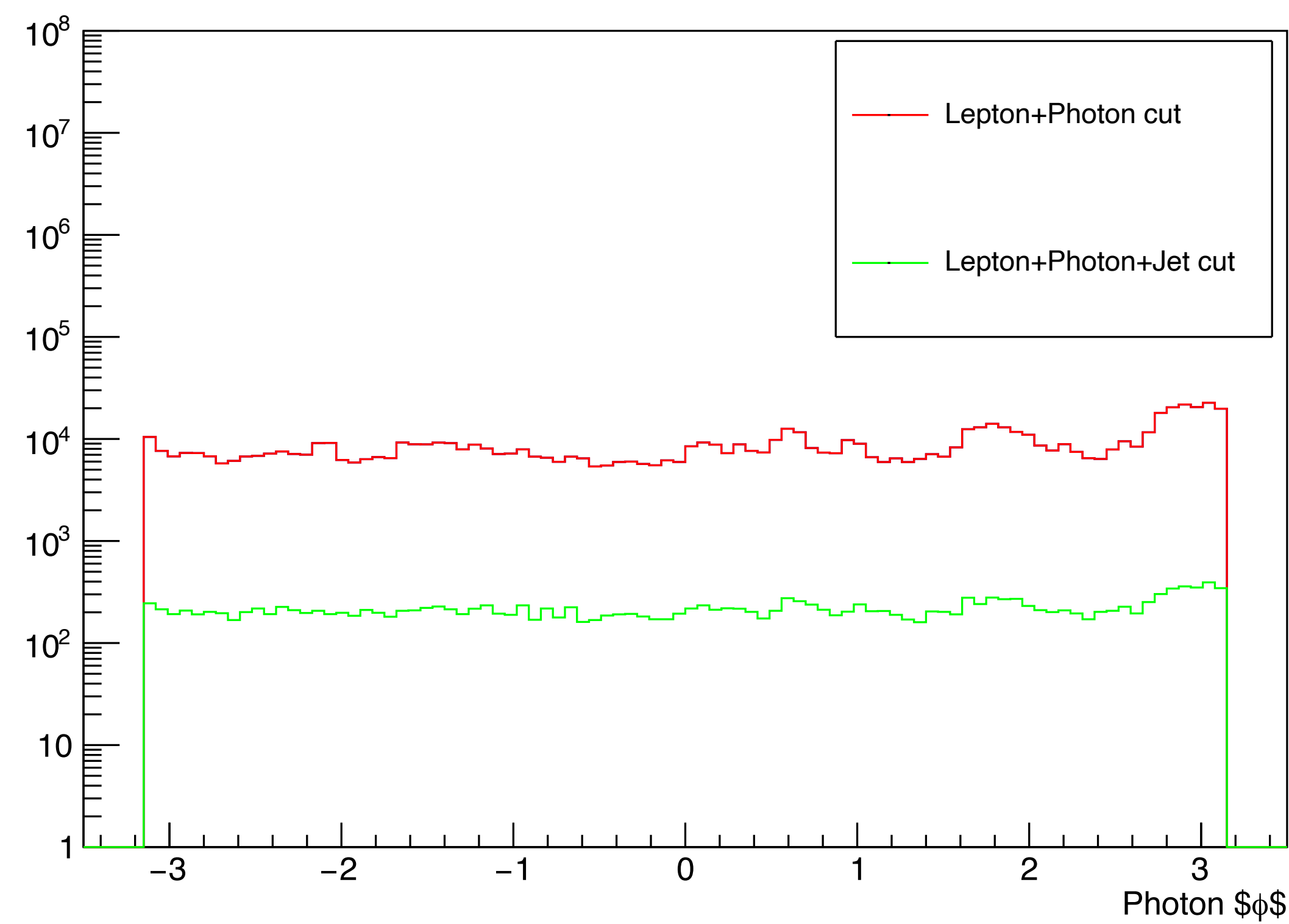
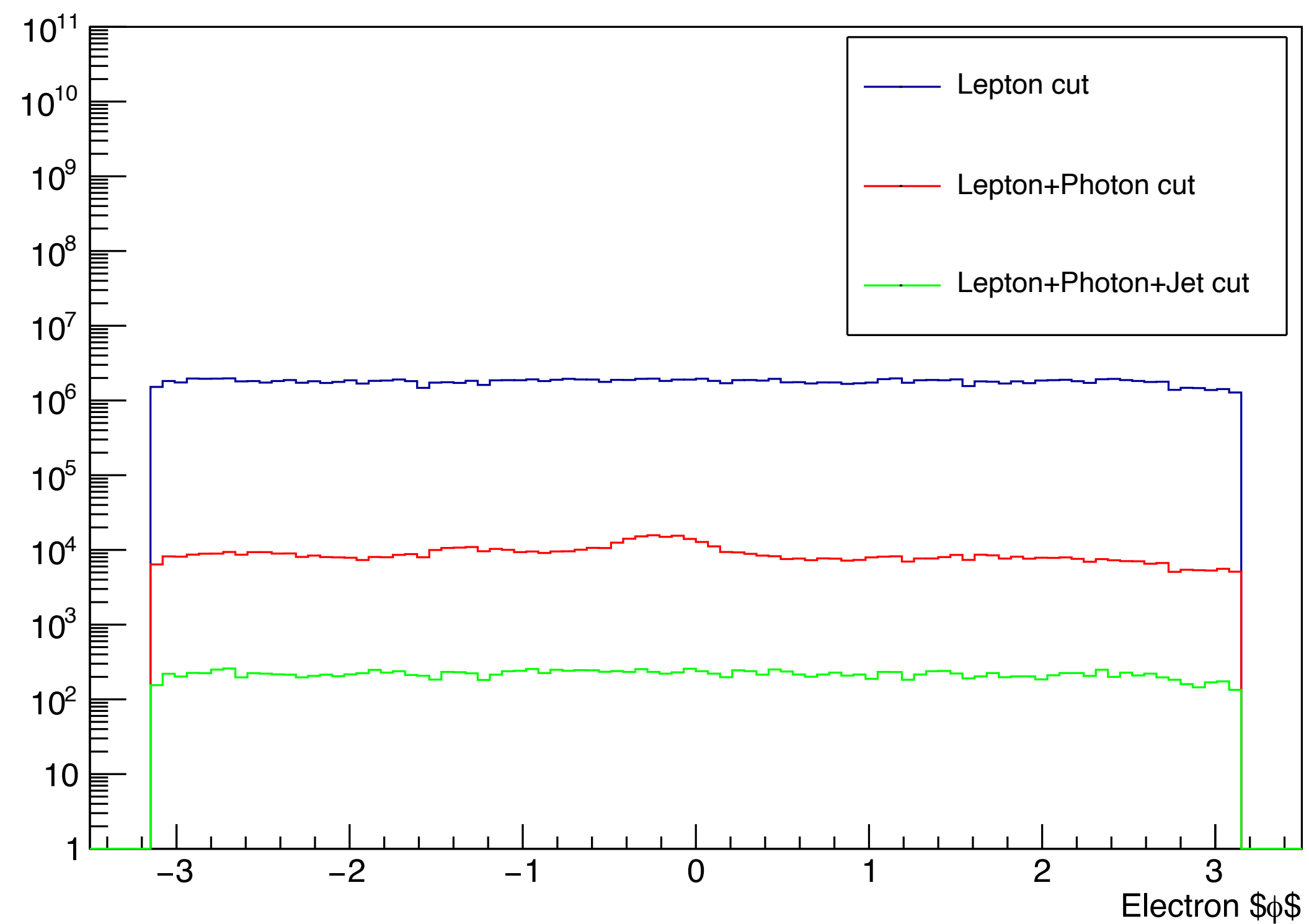


$$t\bar{t} \rightarrow 2\ell 2\nu$$

Electron channel after gen
selection, prompt photon ϕ

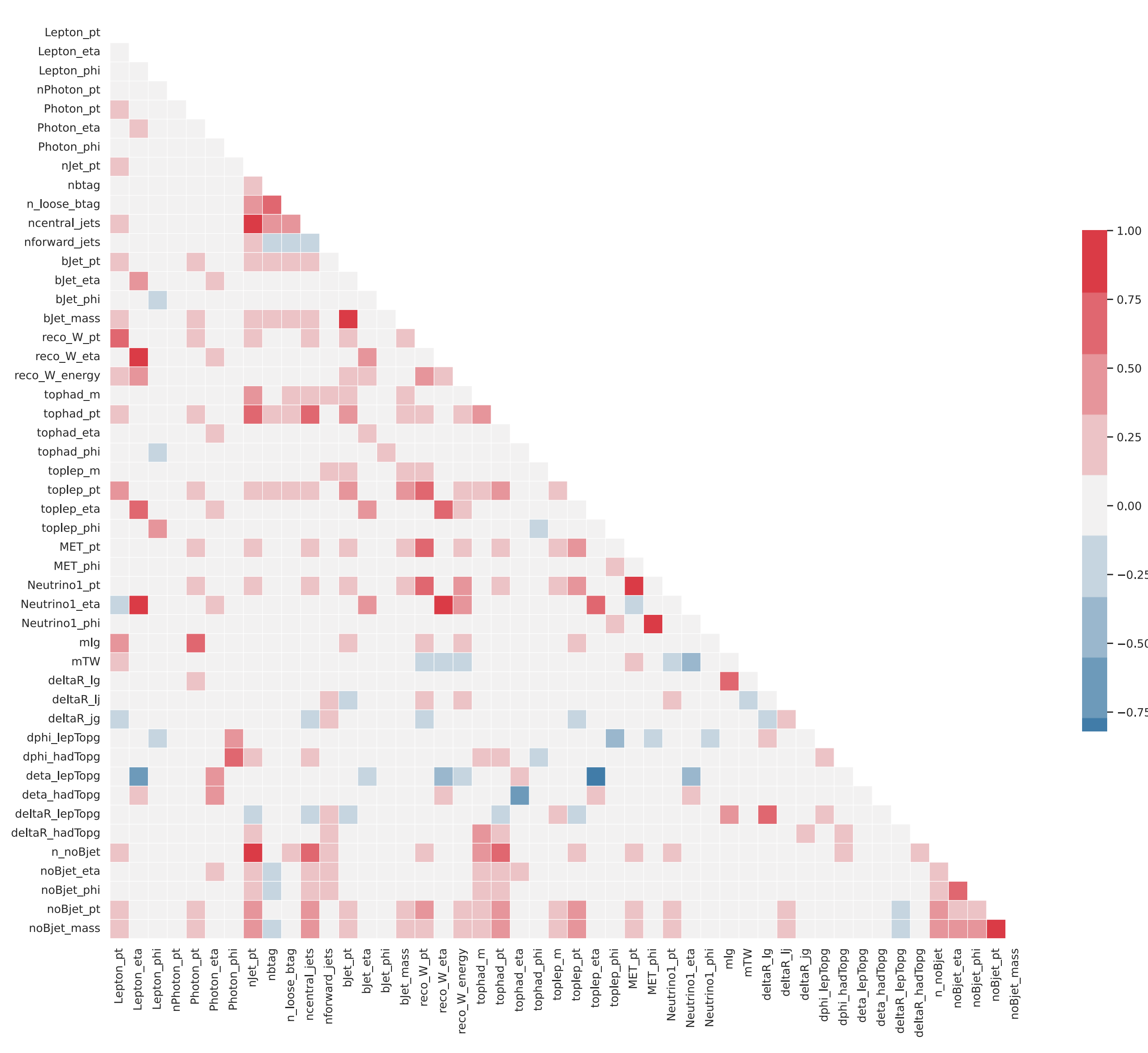
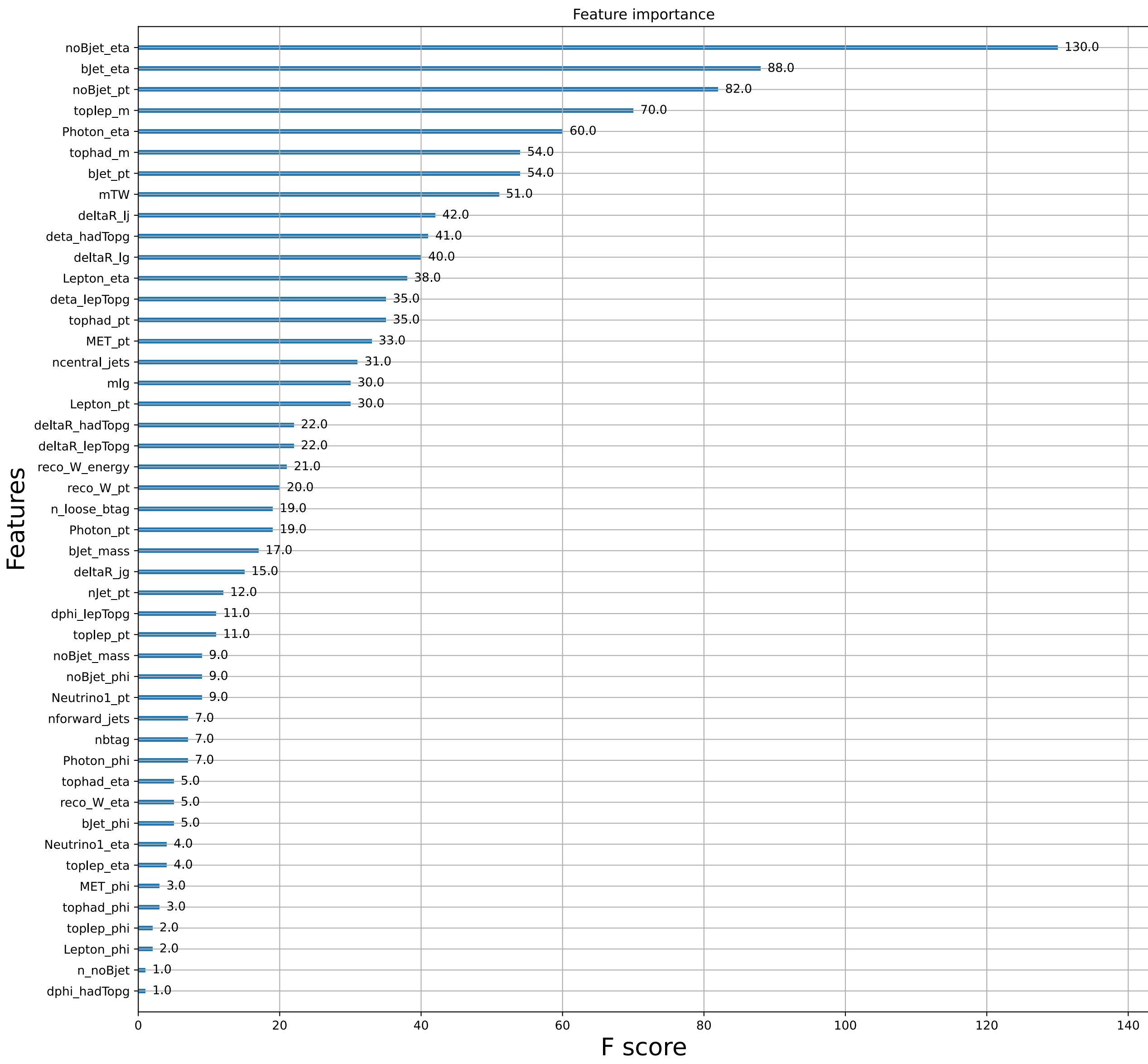
Photon ϕ spike

2017 SingleElectron data

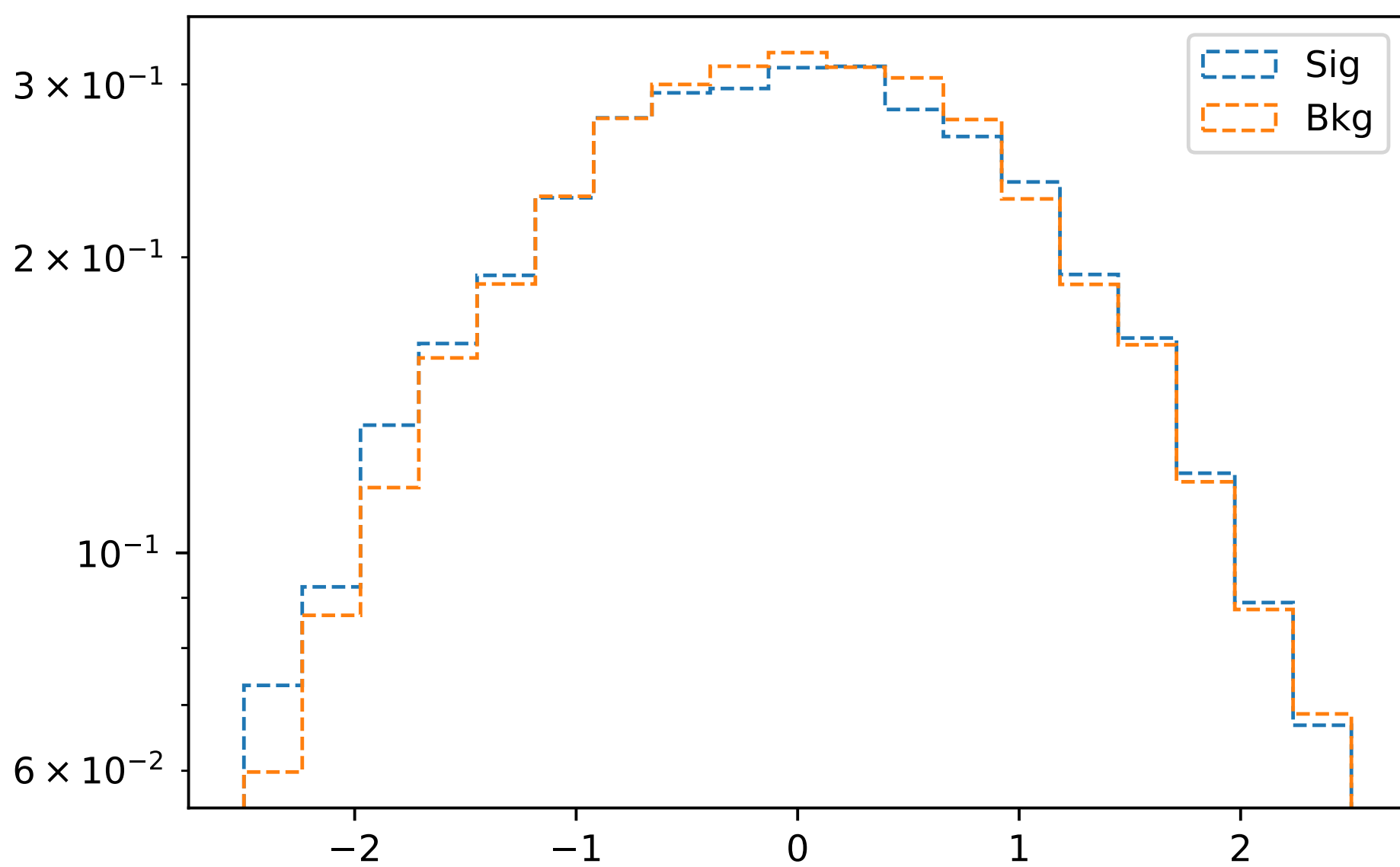
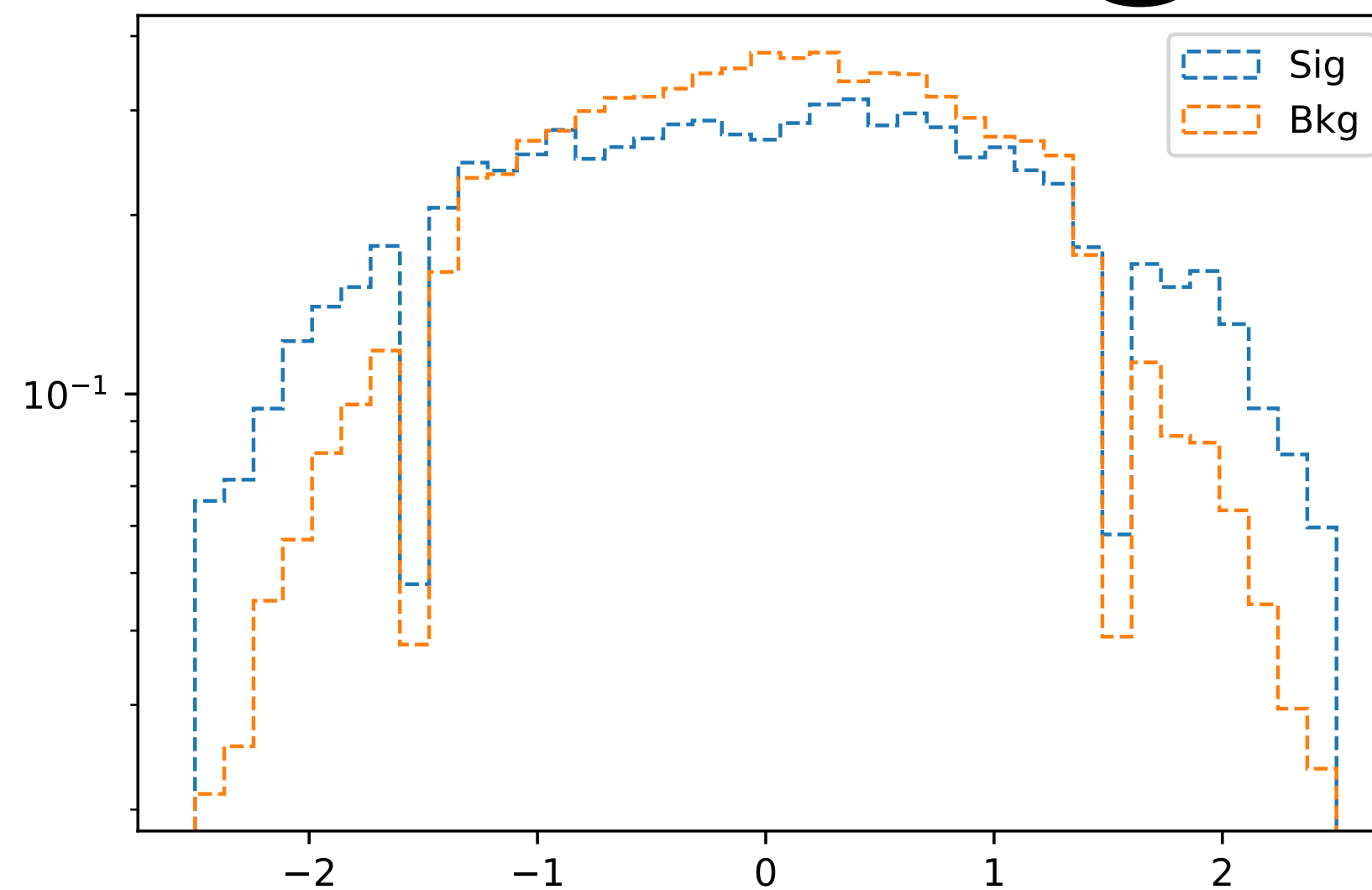
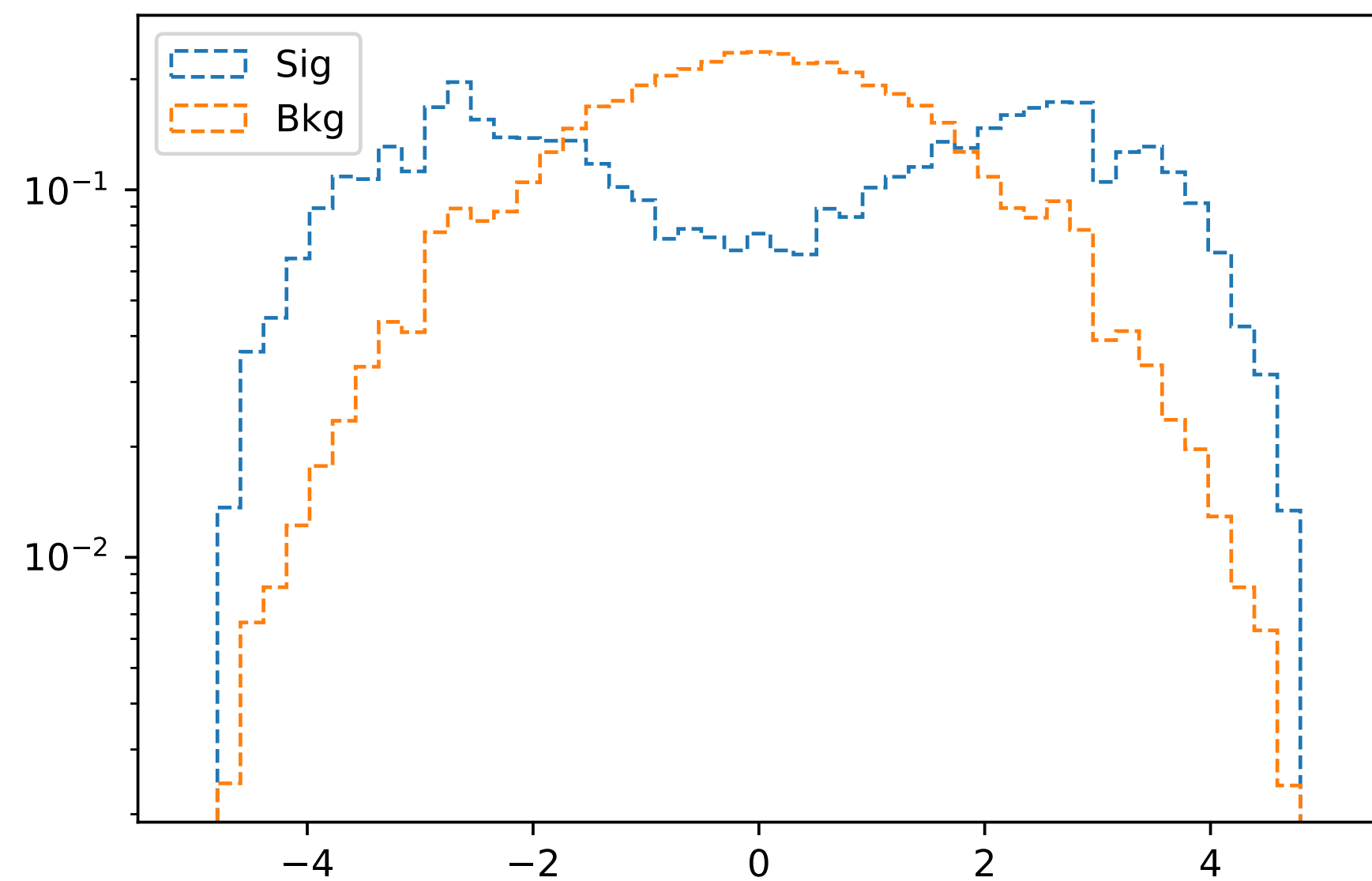


ML training

A BDT is trained in the signal region $N_\ell=1, N_\gamma \geq 1, N_j \geq 2, N_b \geq 1$

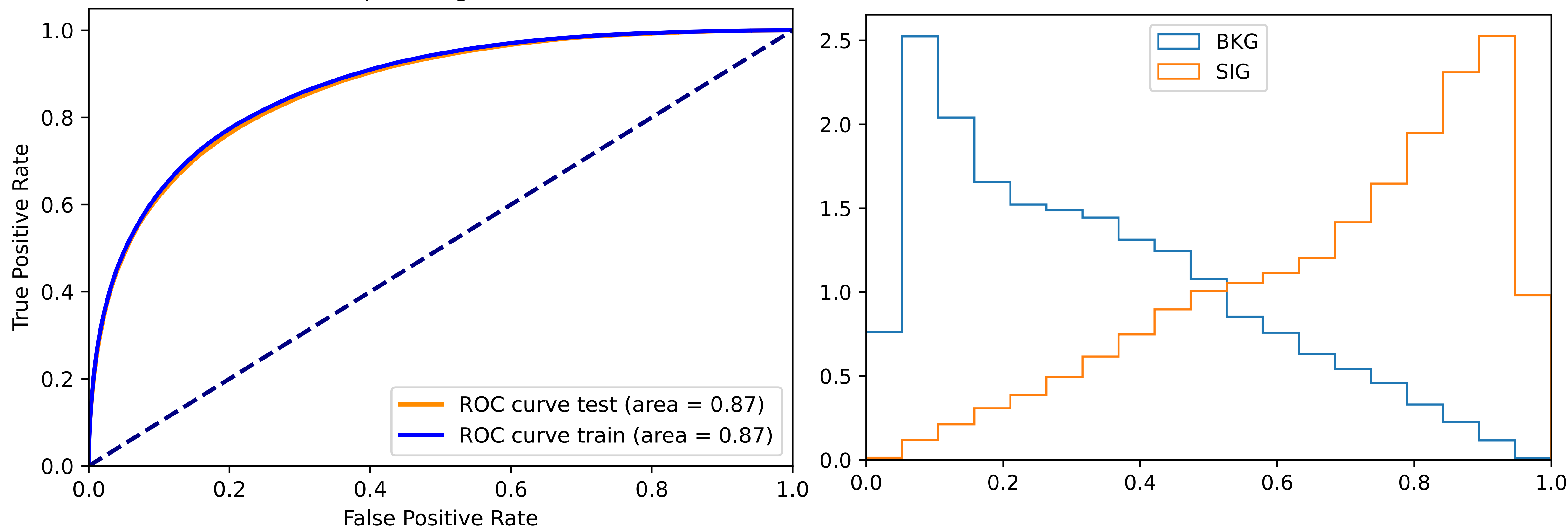


ML training



ML training

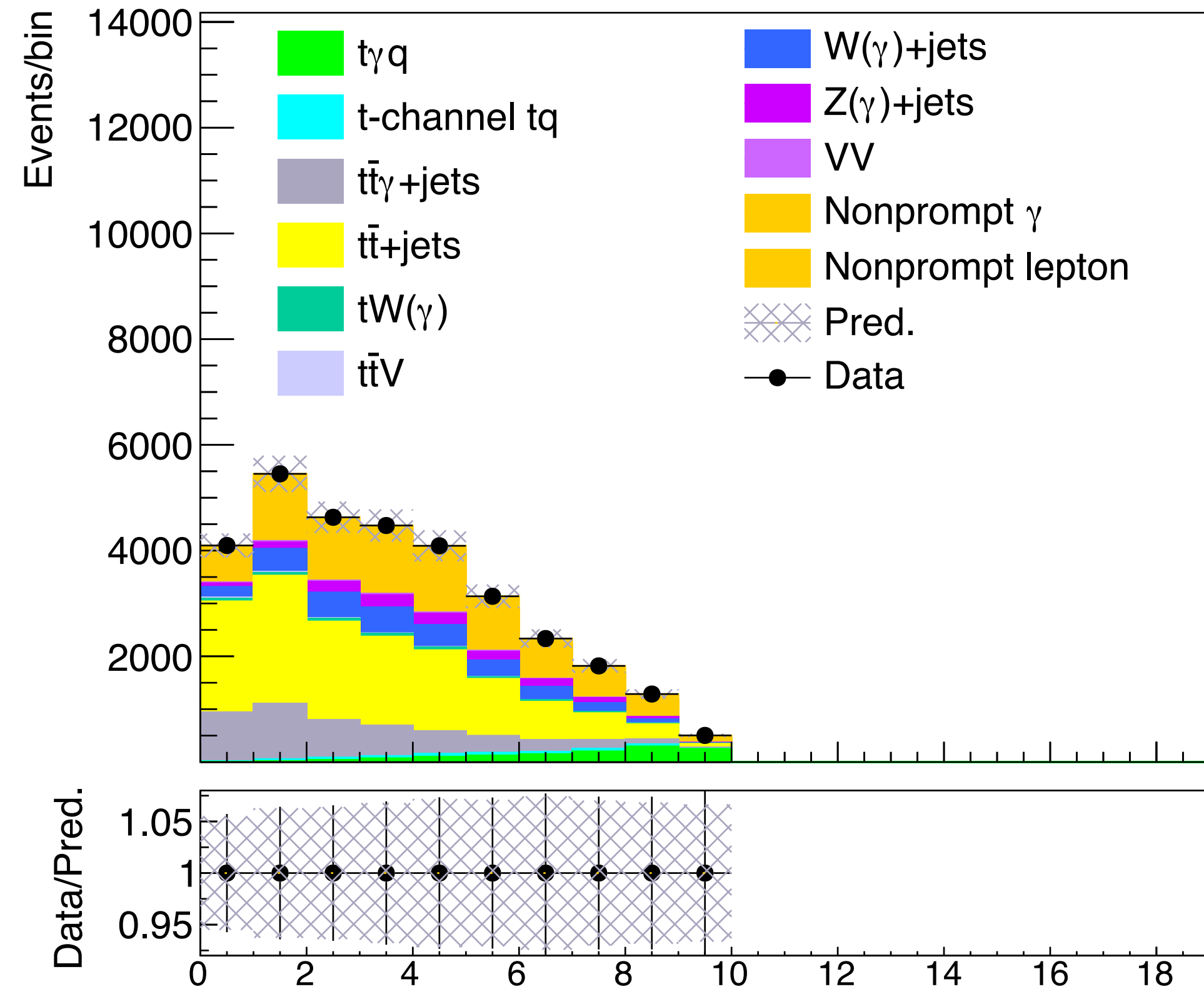
Receiver operating characteristic



Inclusive fit result

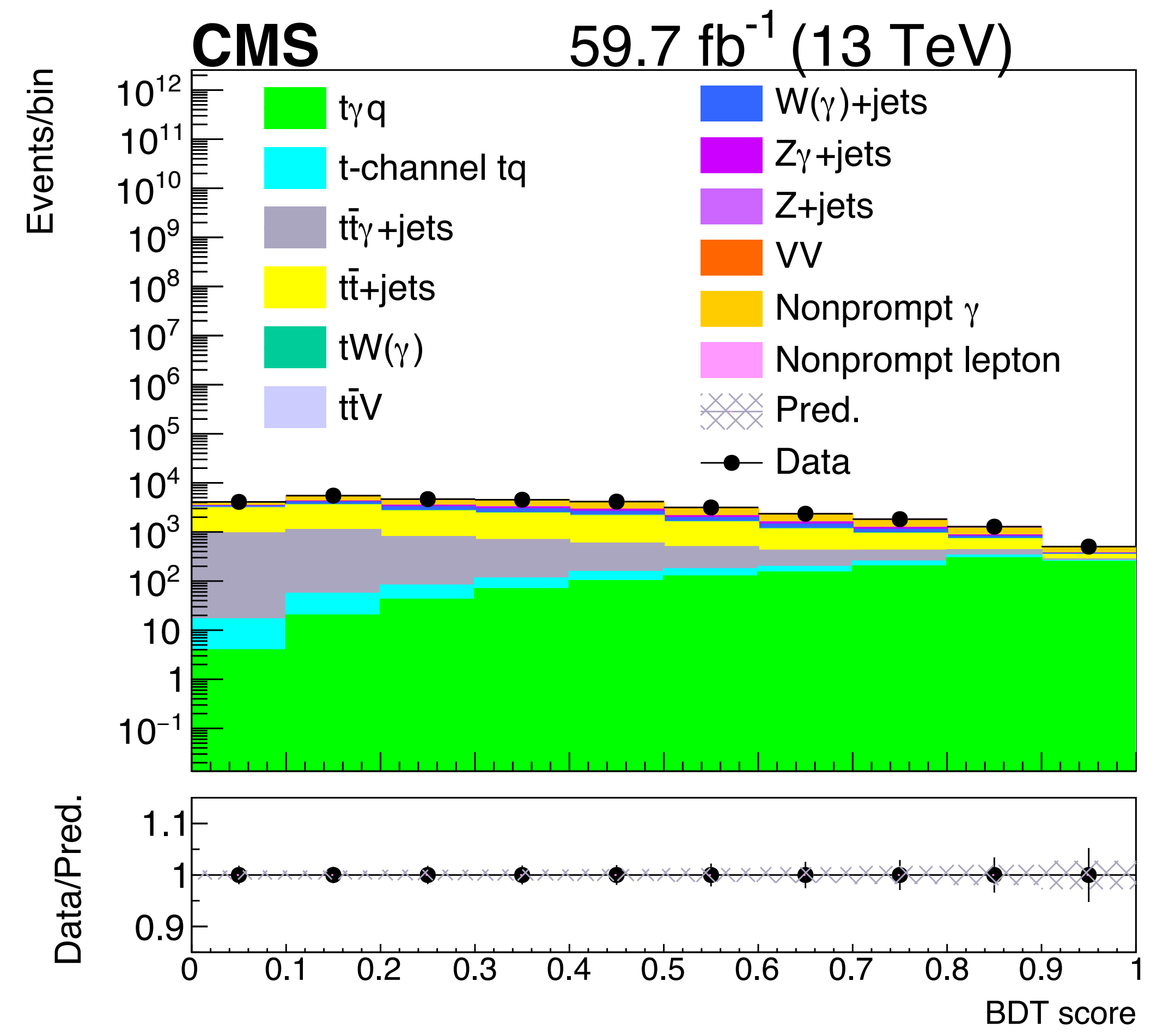
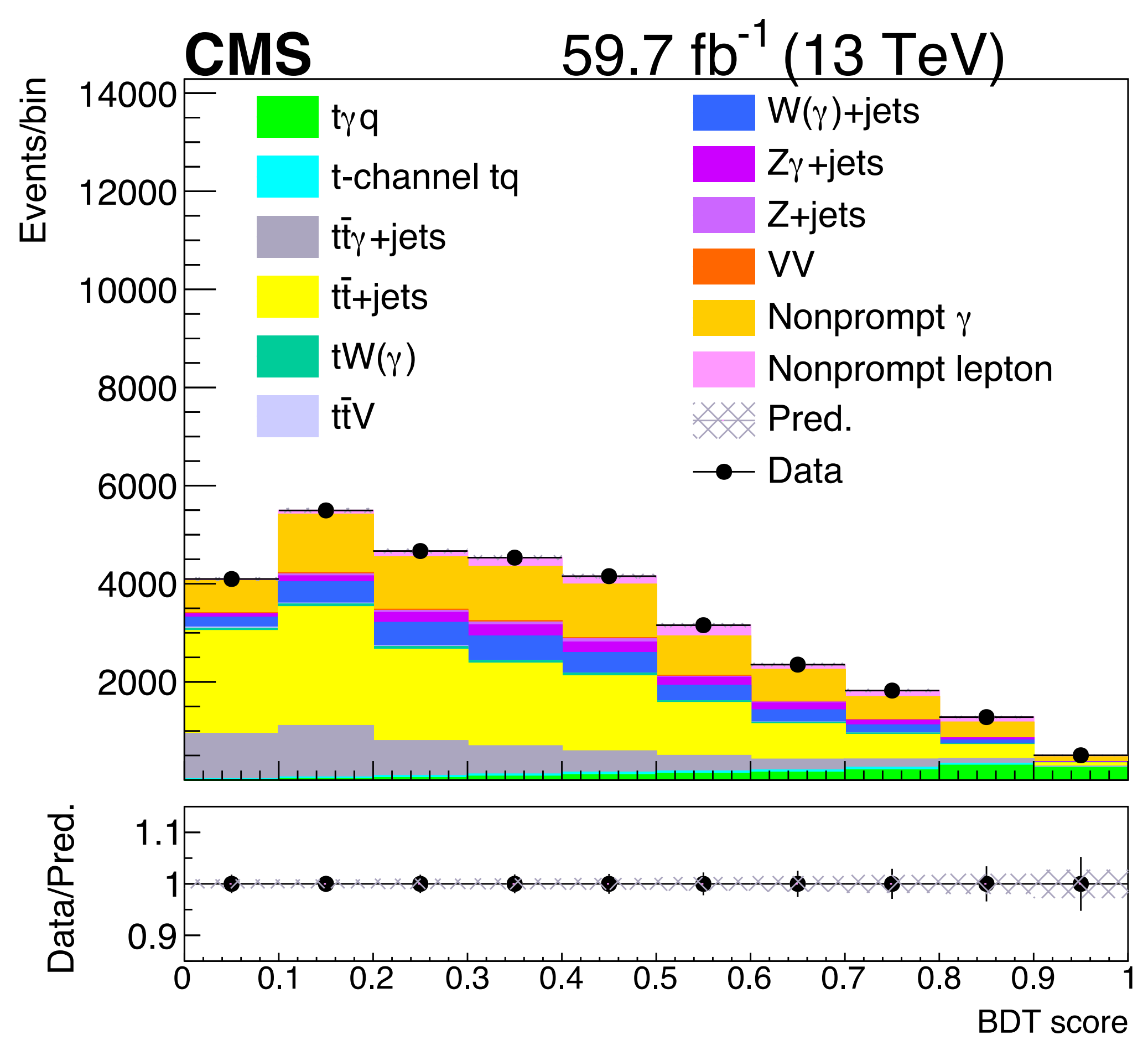
The expected significance: 8.34σ

The expected signal strength (μ): $1.00^{+0.12}_{-0.11}$



ch1/Nonprompt_g	7451.64	+/-	1809.43
ch1/Nonprompt_l	1213.42	+/-	329.2
ch1/VV	178.441	+/-	12.8351
ch1/Wg	2836.42	+/-	189.362
ch1/Zg	1288.91	+/-	98.3949
ch1/tWg	389.309	+/-	49.0447
ch1/tgammaQ	1249.99	+/-	85.0116
ch1/tgammaQ_t	387.039	+/-	29.3986
ch1/ttV	71.1181	+/-	5.09108
ch1/ttg	4520.62	+/-	288.786
ch1/ttjets	12236.7	+/-	845.143
ch1/total	31823.6	+/-	2042.59
ch1/total_signal	1249.99	+/-	85.0116
ch1/total_background	30573.6	+/-	2013.13

BDT distribution



Discussion

- Do we require a slot in tX meeting for next week?
- Show what I showed yesterday plus fit with shape uncertainty?
- Add inclusive fiducial fit results at least, if possible add differential fit