

Single top polarization: Lepton η weight systematic

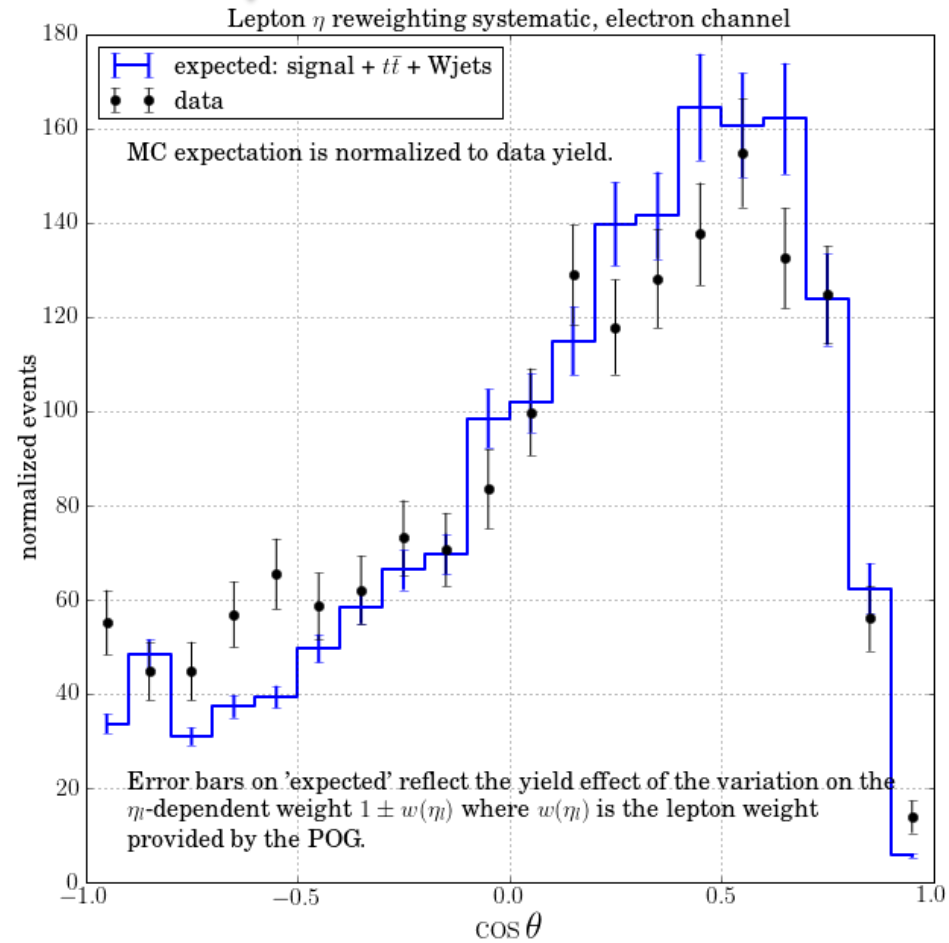
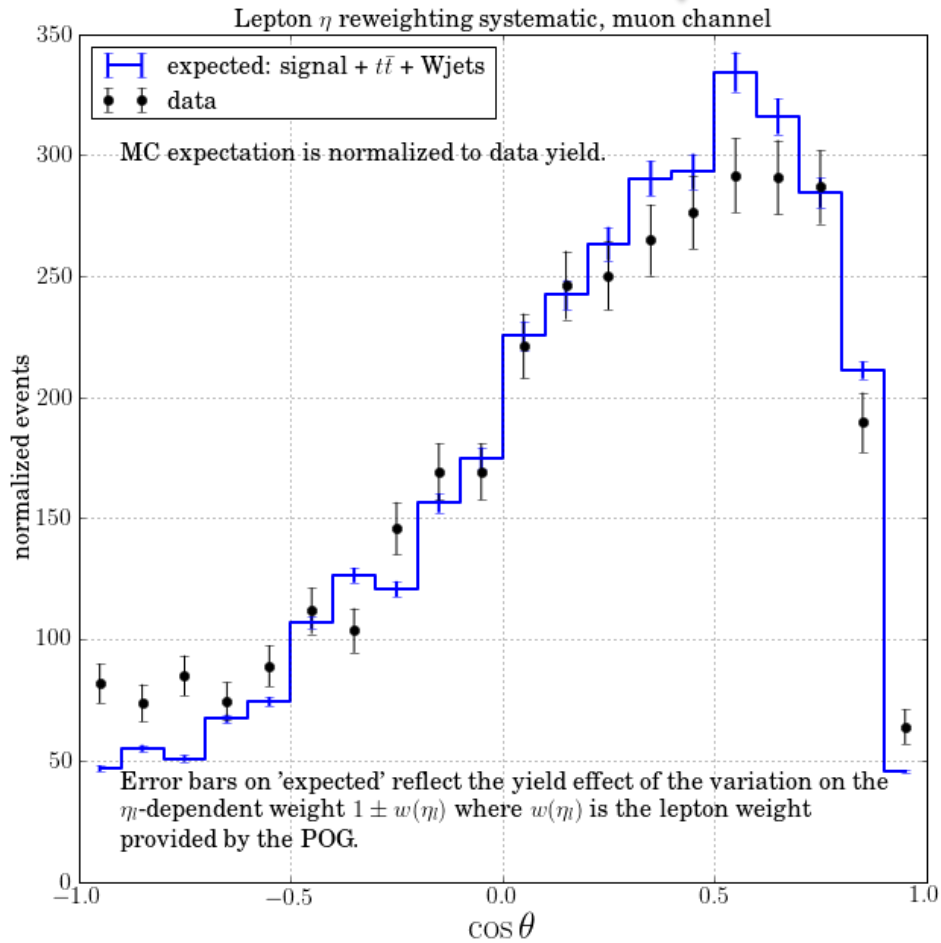
Joosep Pata

02.09.13

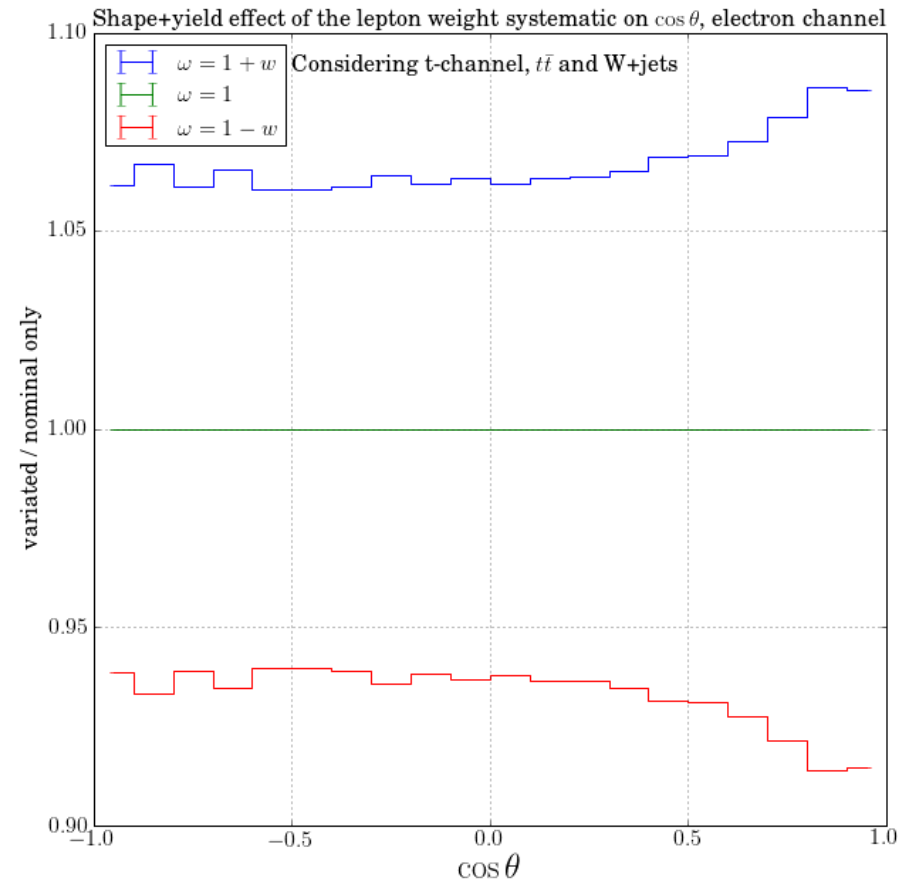
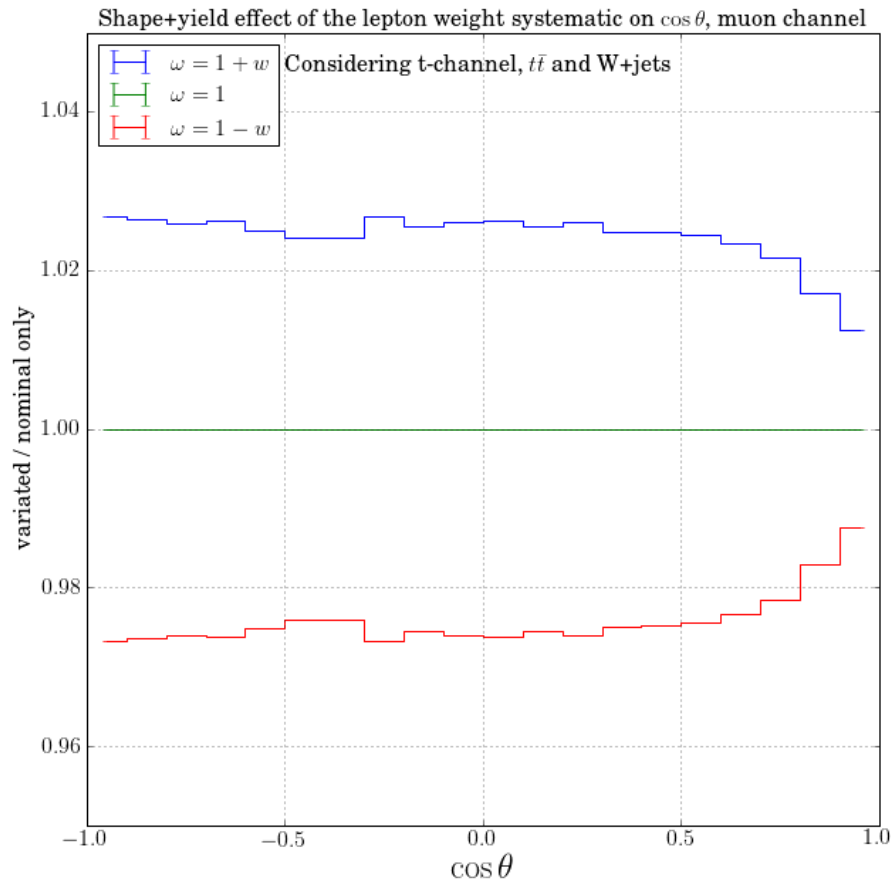
Workflow

- Investigate if there is an effect on varying the POG-provided lepton η -dependent weight around unity
- $W_{\text{syst}} = 1 \pm w(\eta)$, where $w(\eta) = \text{POG weight}$
- Select 2J1T signal enriched region (MVA loose)
- Use $t\bar{t}$, W +jets and t-channel samples, compare with data (normalizing by yield)

Yield effect on $\cos \theta$: muon and electron

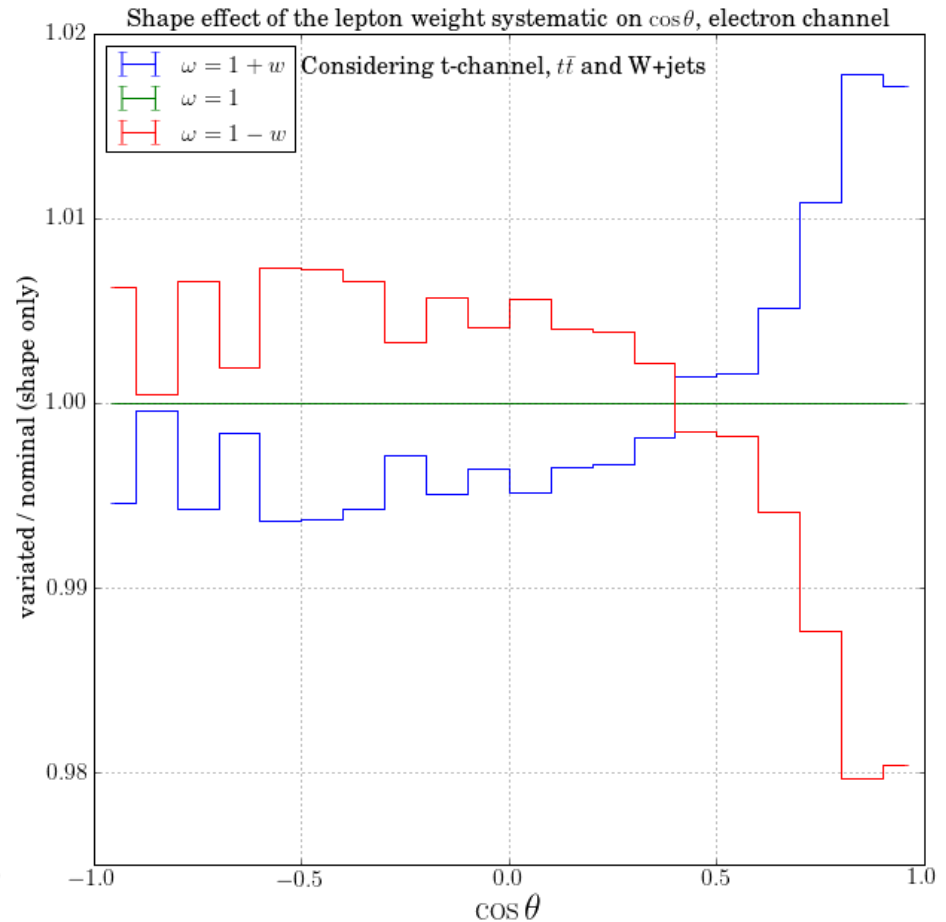
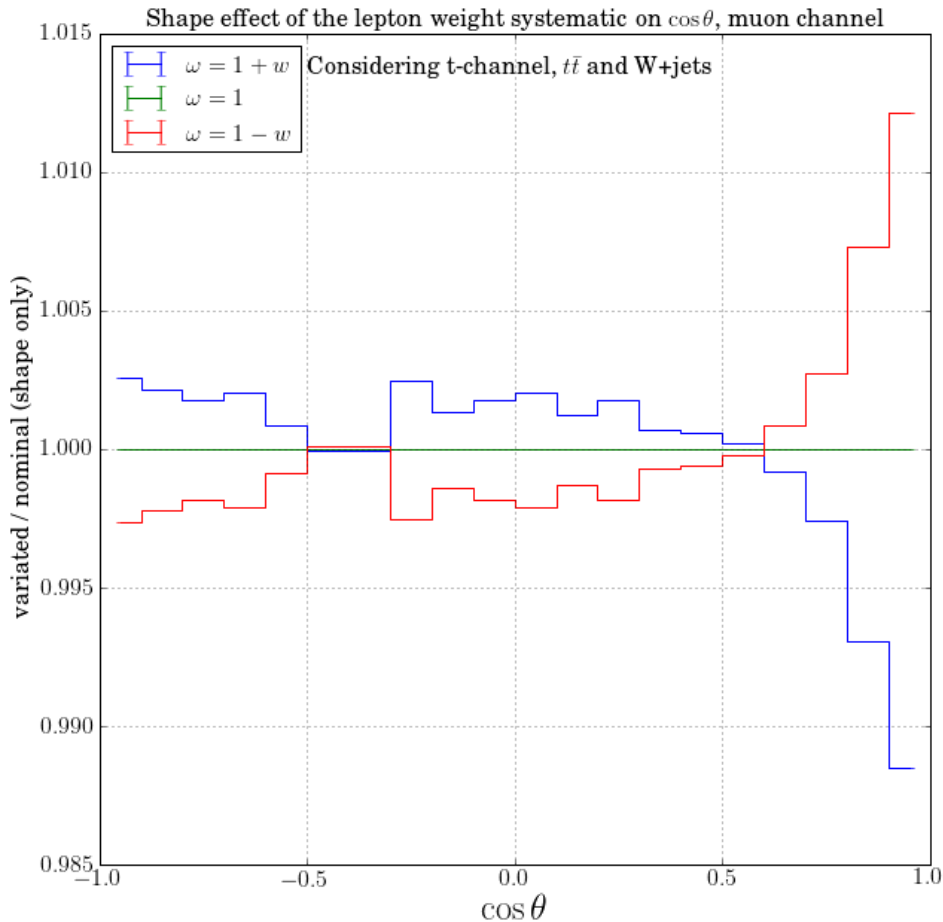


Yield effect on $\cos \theta$



Yield effect is <5% for muons and <10% for electrons.

Shape effect on $\cos \theta$



Shape effect is $< 1\%$ for muons, $< 2\%$ for electrons, but would somewhat modify the asymmetry, and is of opposite direction for muons/electrons.