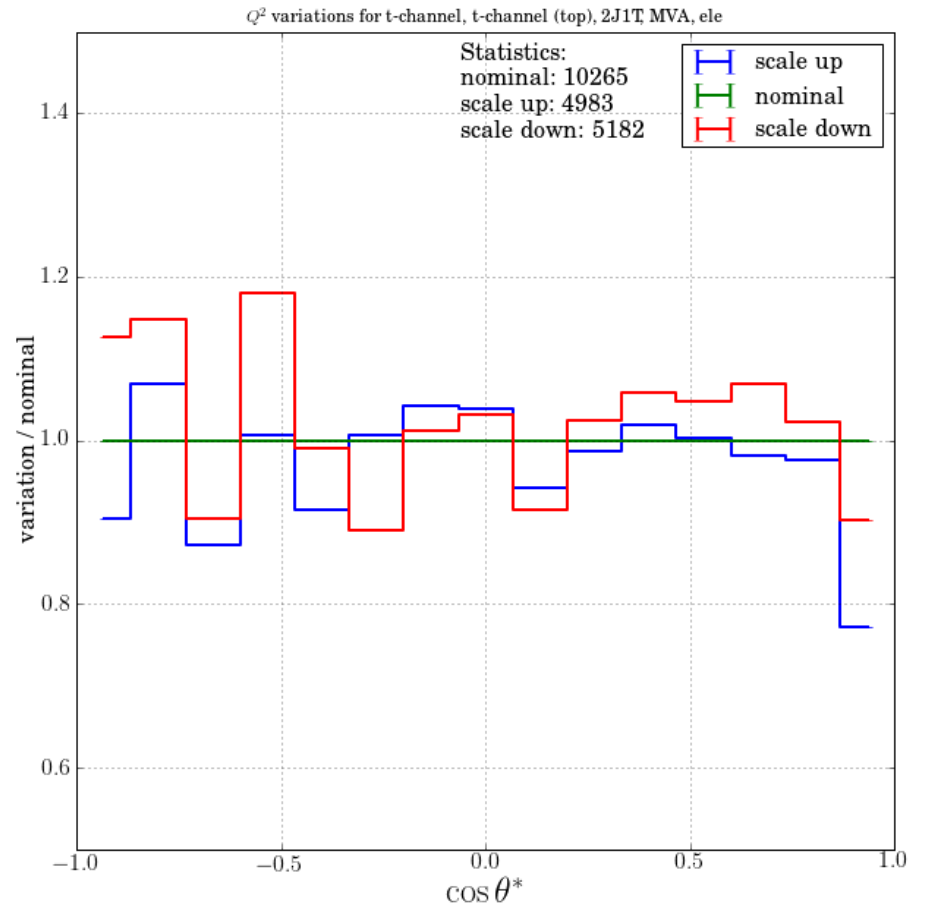
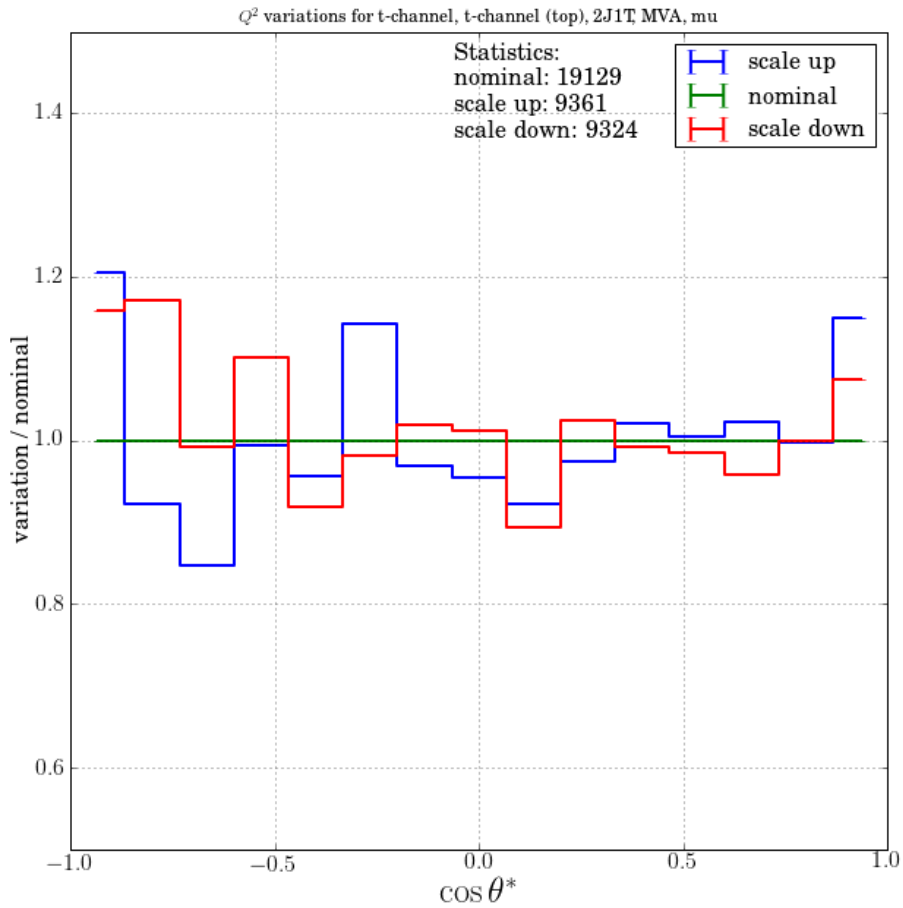


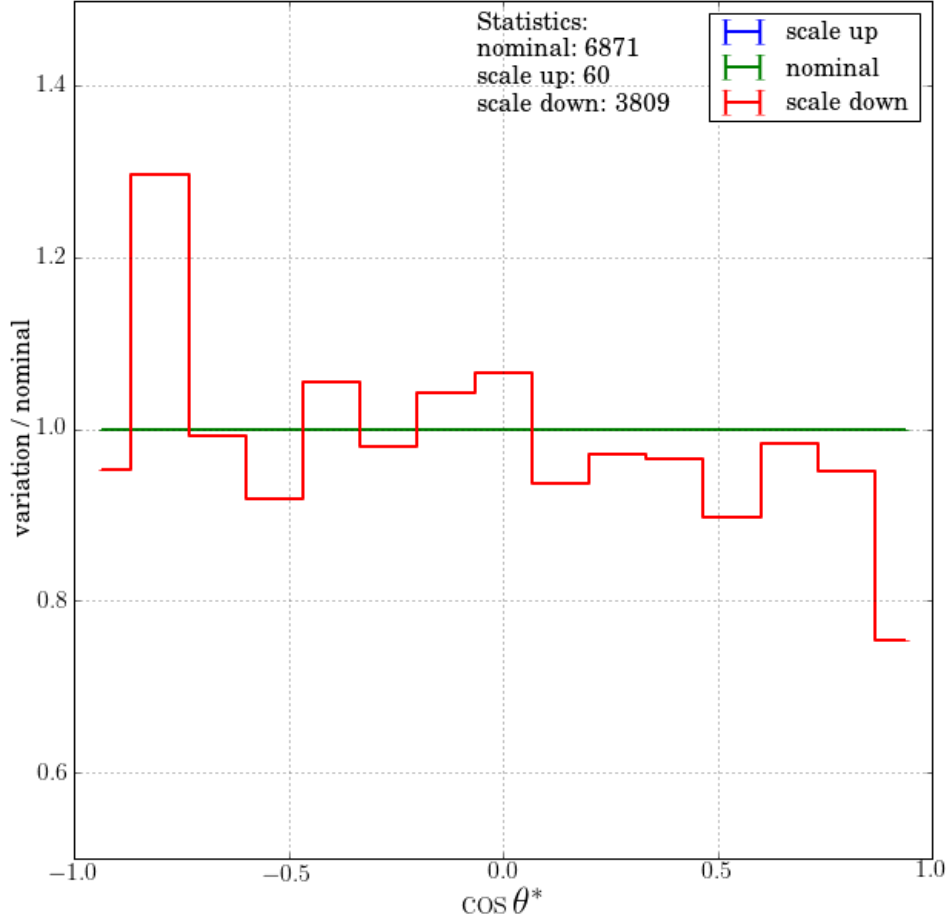
Q^2 variation, t-channel (top)



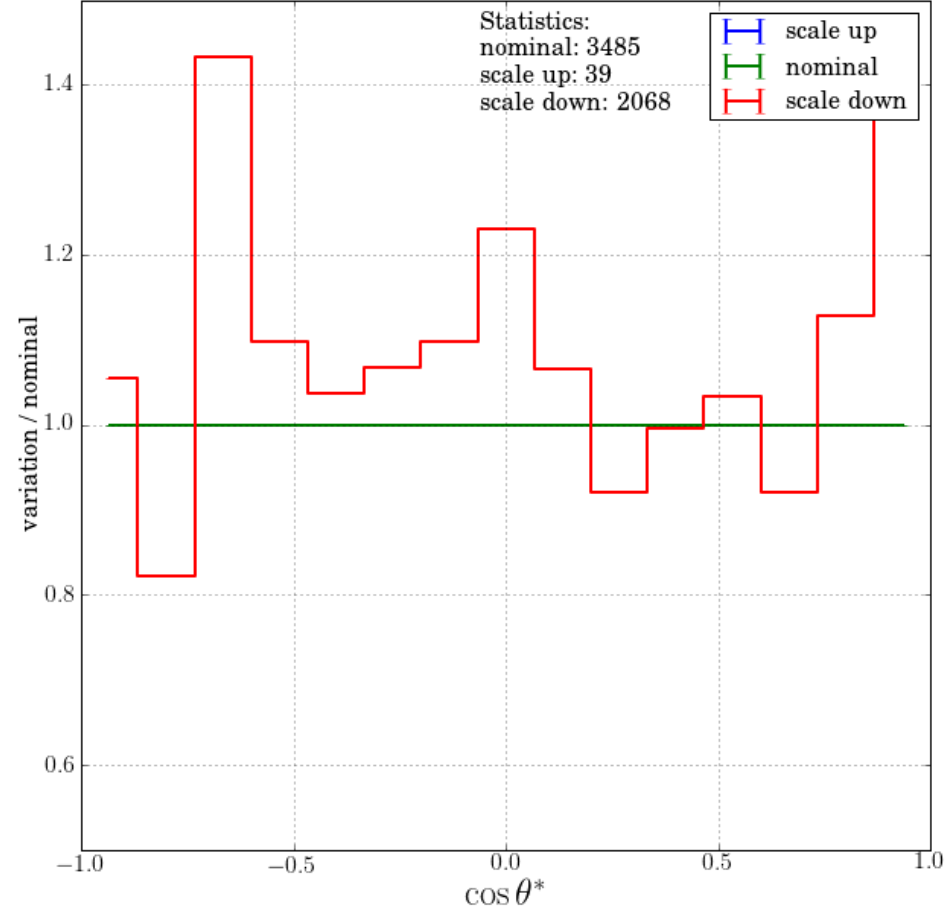
- Applying 2J1T, MVA loose WP selection

Q² variation, t-channel (anti-top)

Q² variations for t-channel, t-channel (antitop), 2J1T, MVA, mu



Q² variations for t-channel, t-channel (antitop), 2J1T, MVA, ele



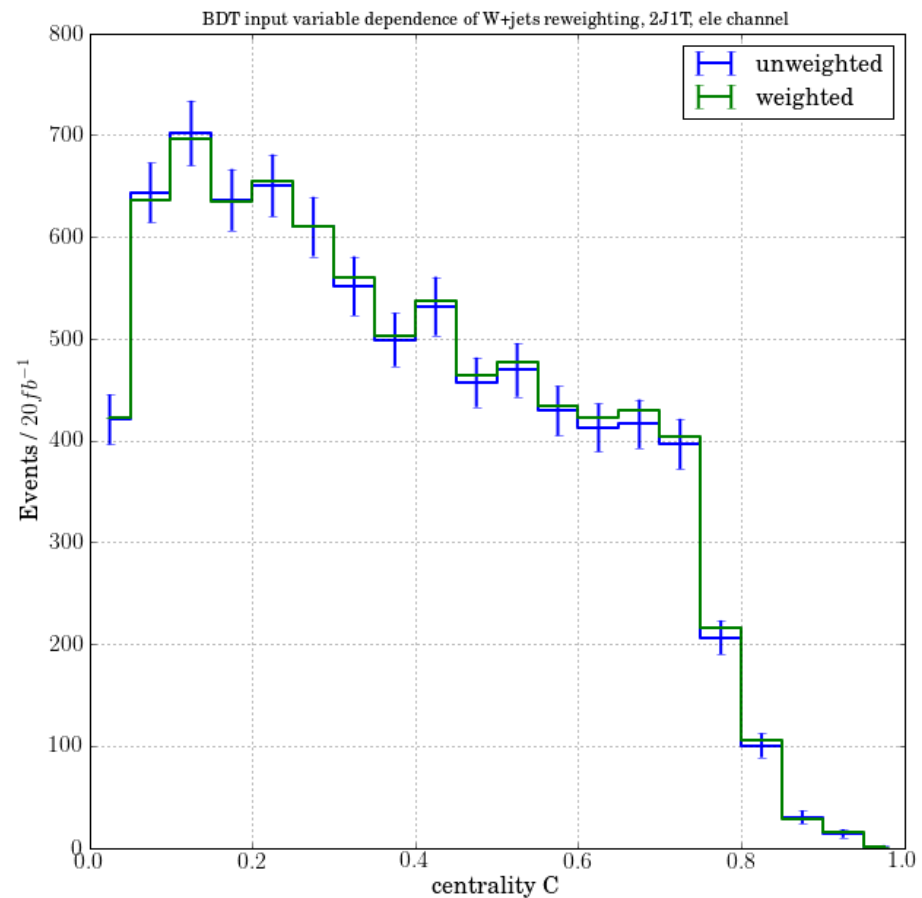
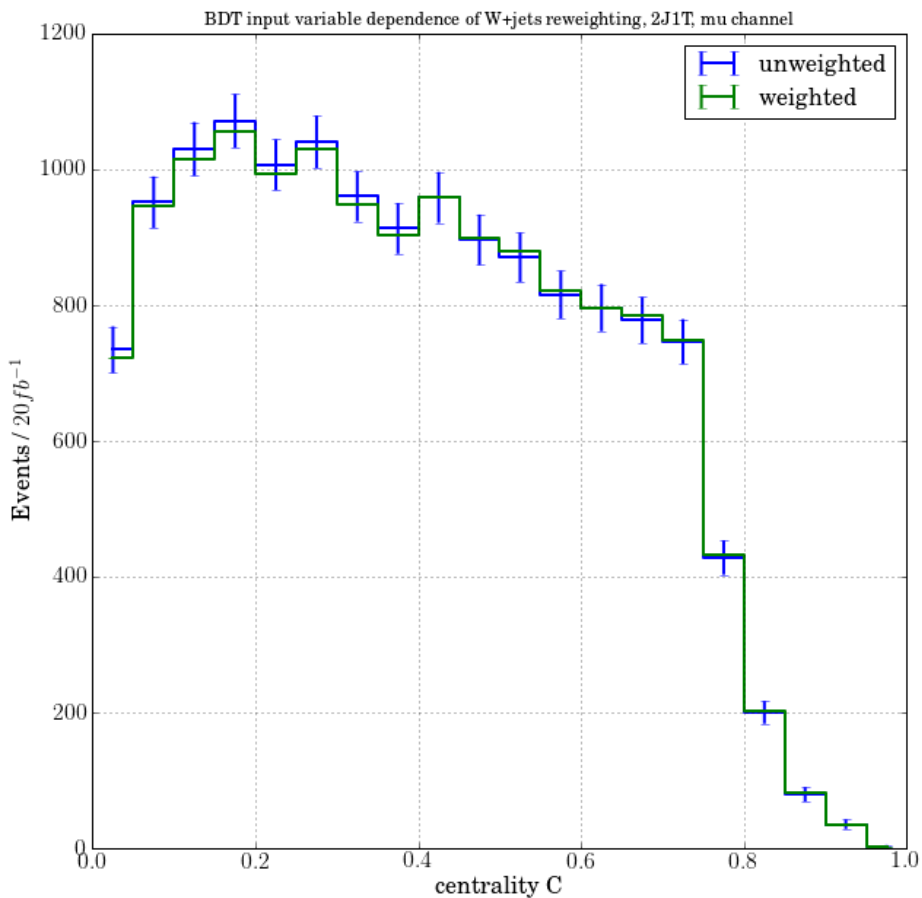
Raw MC event counts after complete selection (2J1T, MVA loose)

| Muon channel | nominal | Q2 up | Q2 down | Electron channel | nominal | Q2 up | Q2 down |
|--------------|---------|-------|---------|------------------|---------|-------|---------|
| top | 19129 | 9361 | 9324 | top | 10265 | 4983 | 5182 |
| anti-top | 6871 | 60 | 3809 | anti-top | 3485 | 39 | 2086 |

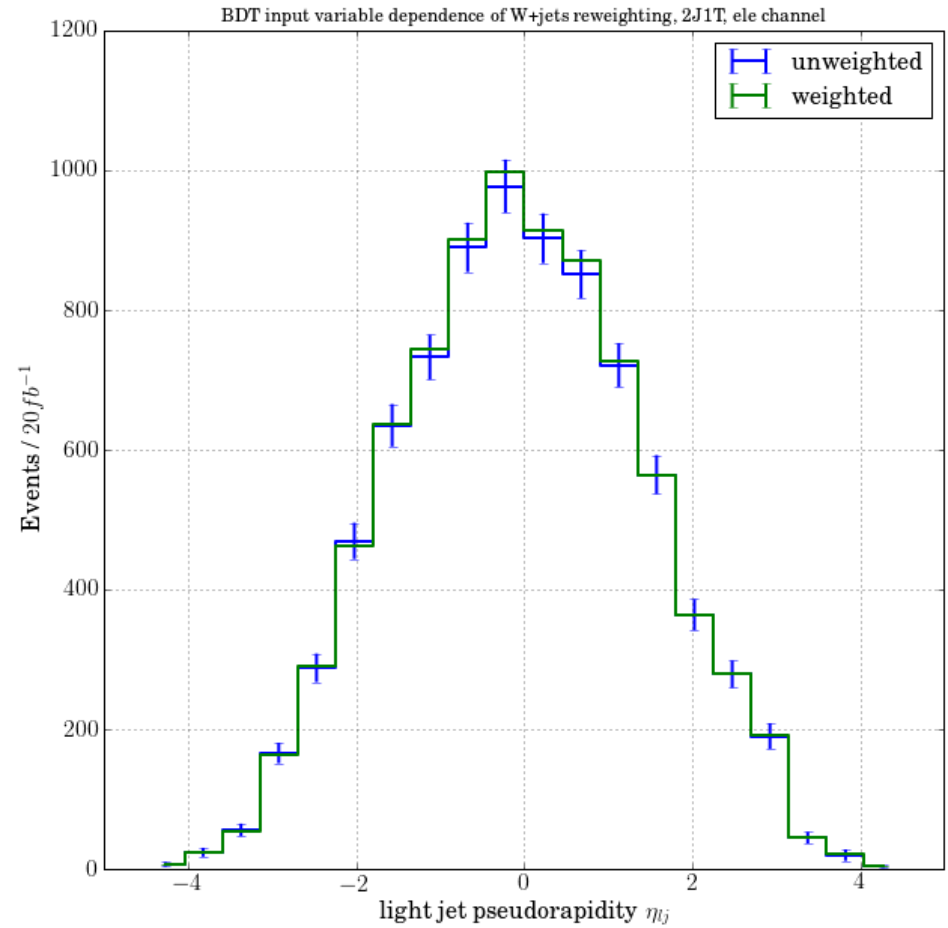
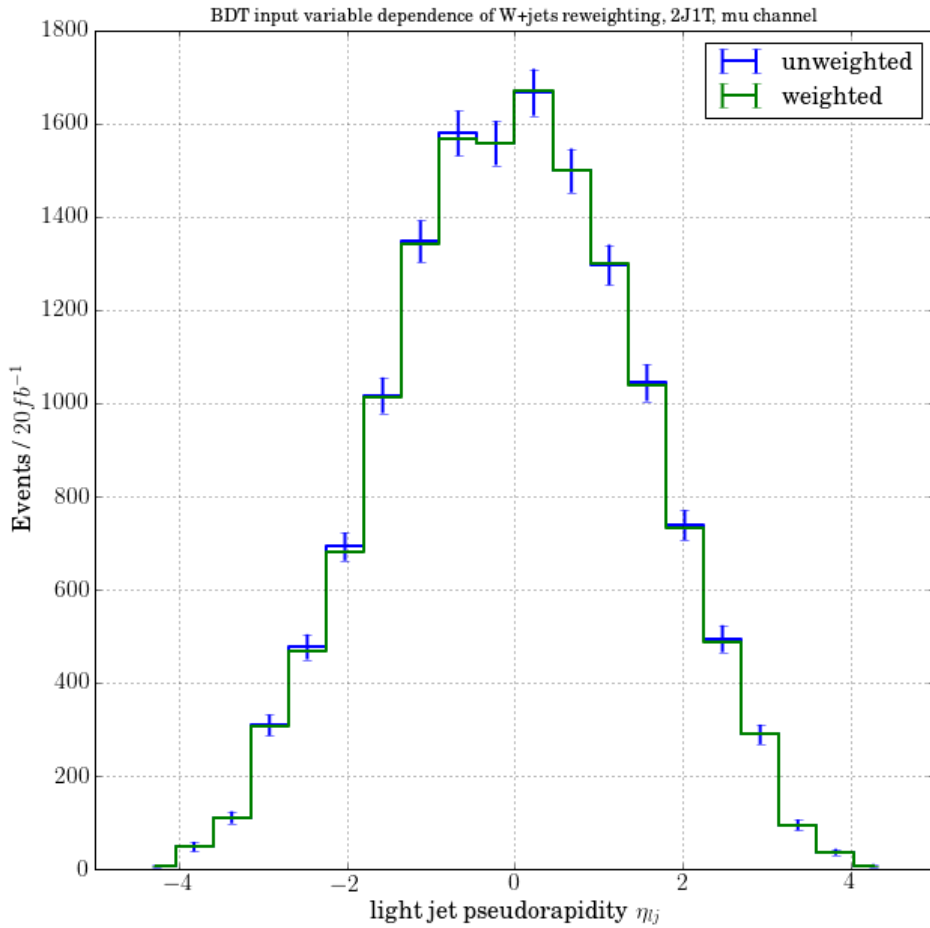
BDT input variable sensitivity to W+jets reweighting

- Checked the effect of the $\cos \theta$ -based MadGraph \rightarrow Sherpa reweighting in the 2J1T region on the following variables
 - Input: reconstructed top mass, centrality, light jet η , lepton p_T
 - BDT output
 - $\cos \theta$
- Input variables are very stable (see the following slides), differences well covered by already stat. uncertainties in the source distribution
- Only the affected samples (W+jets MadGraph exclusive, FullSim) were considered

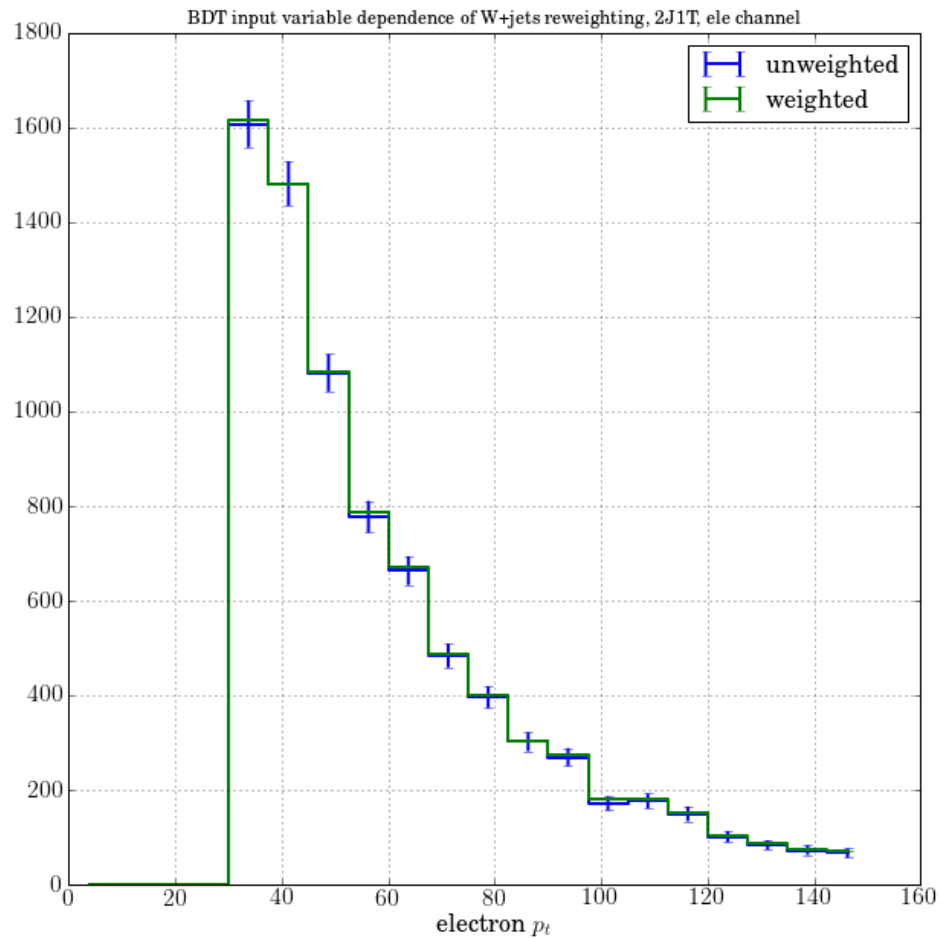
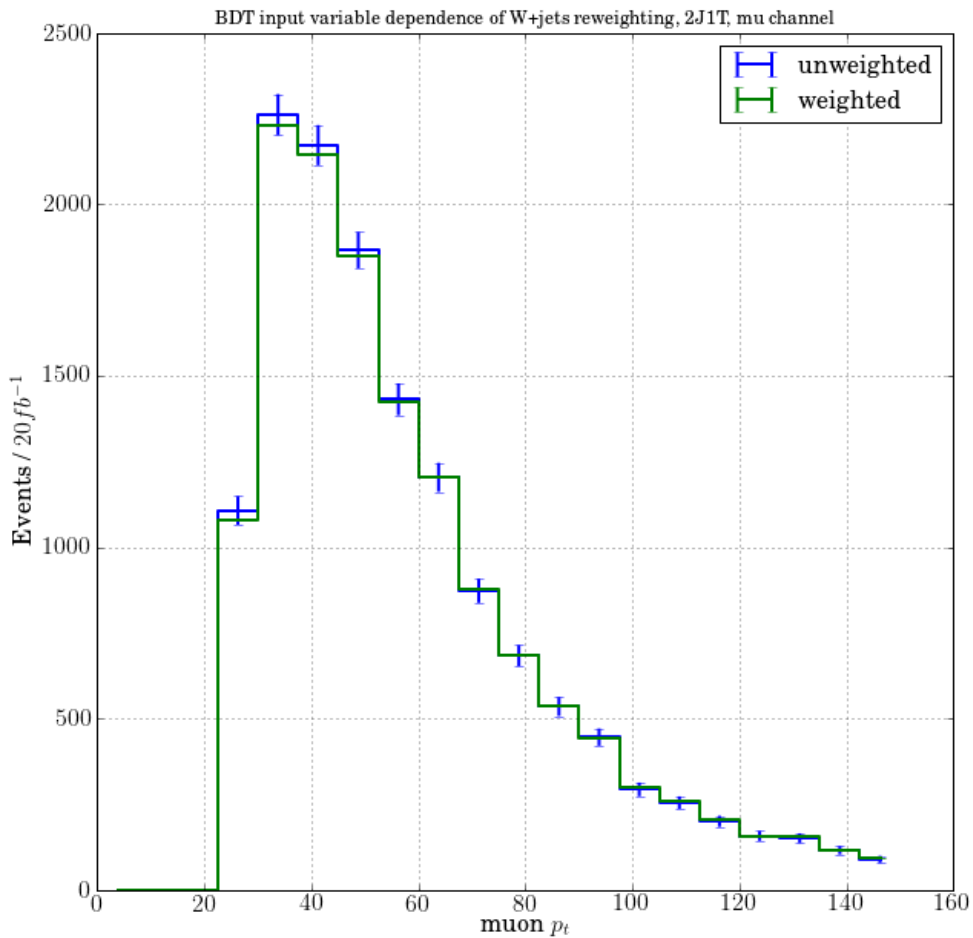
Centrality



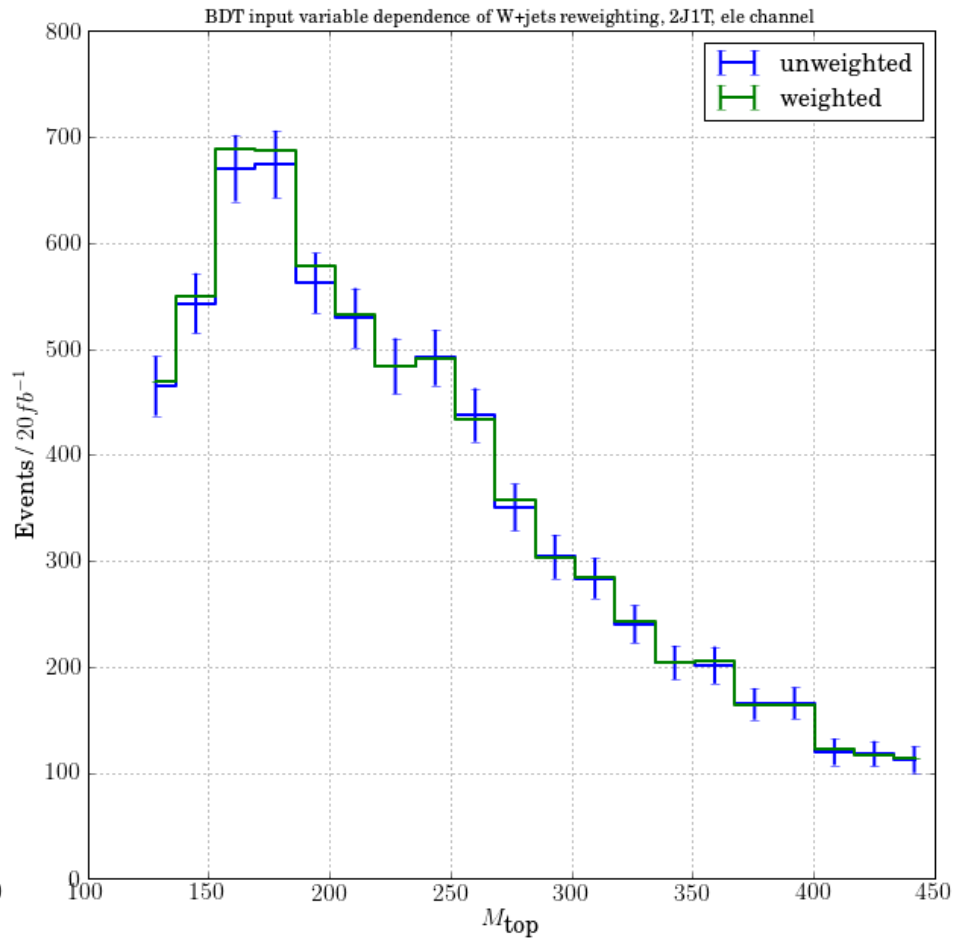
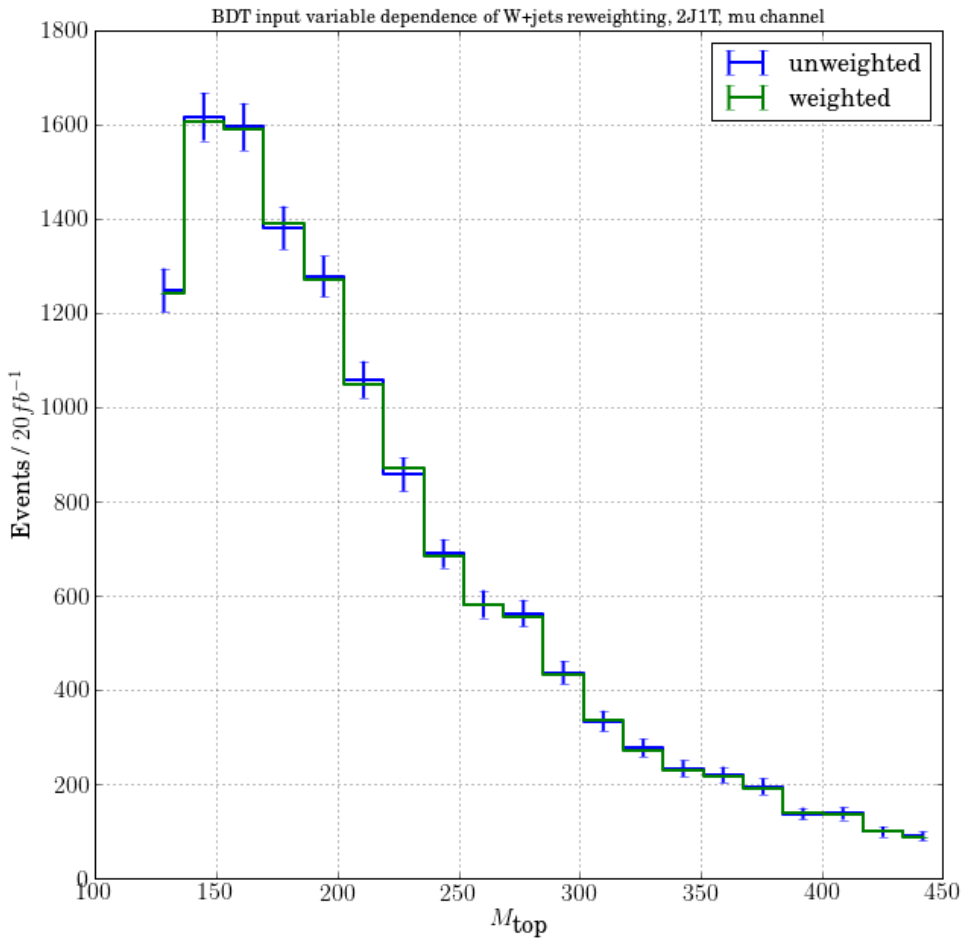
Light jet pseudorapidity



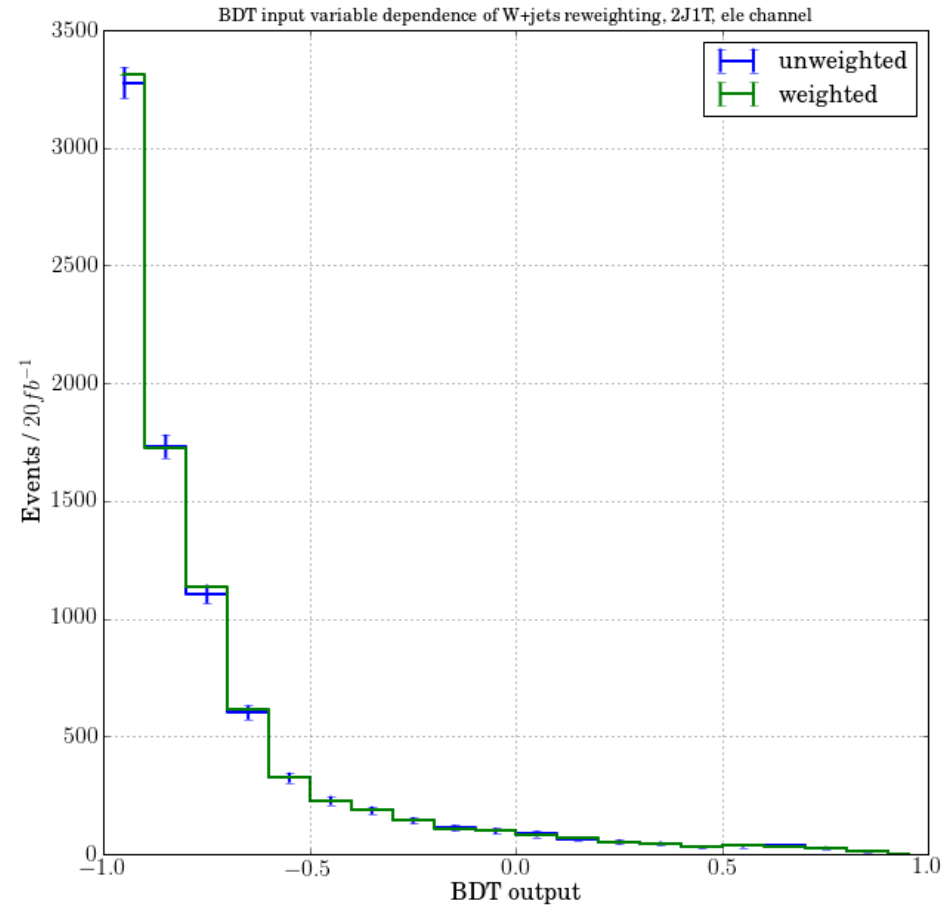
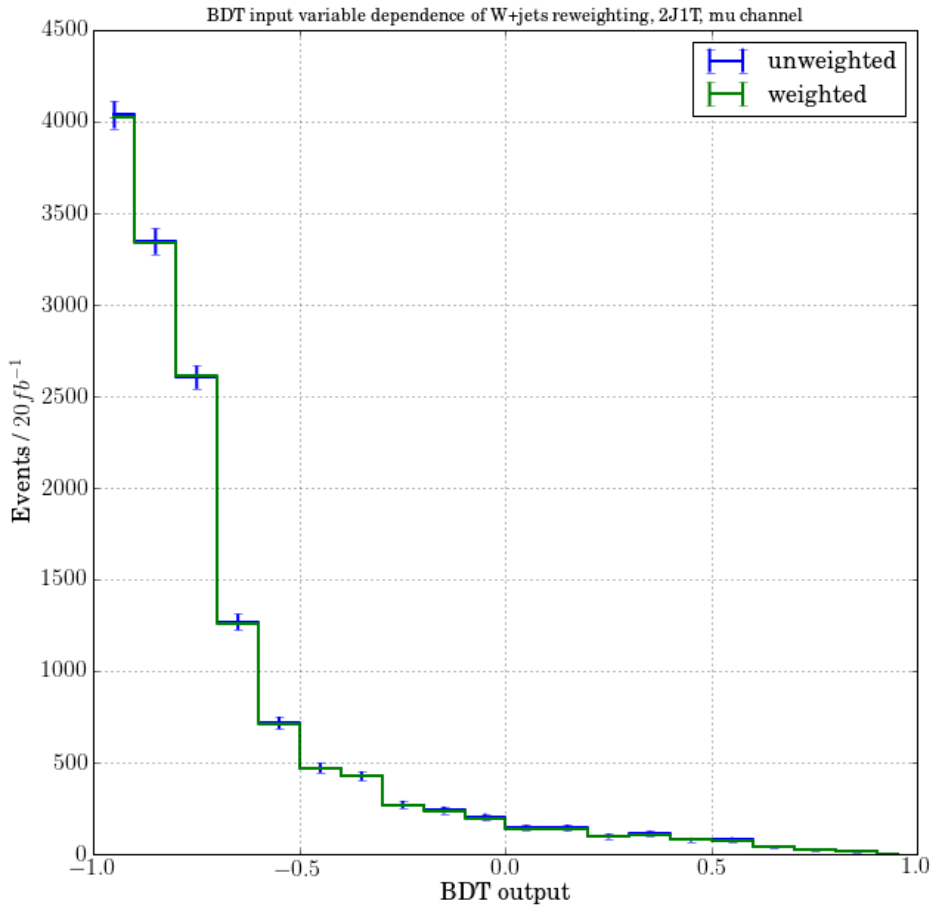
Lepton p_T



Reconstructed top mass



BDT output



Cos θ

