TTH analysis

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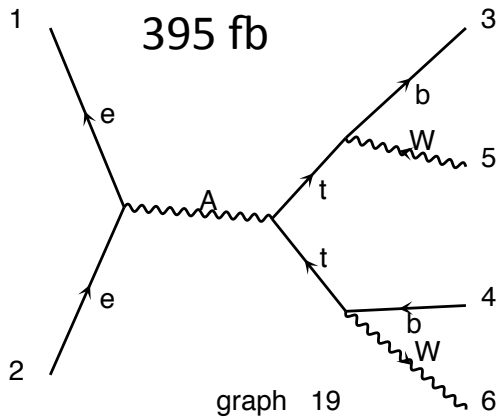
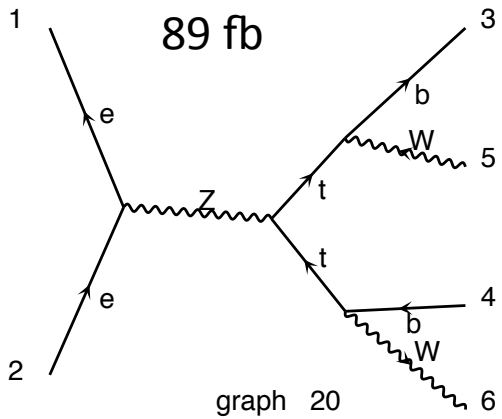
cross section

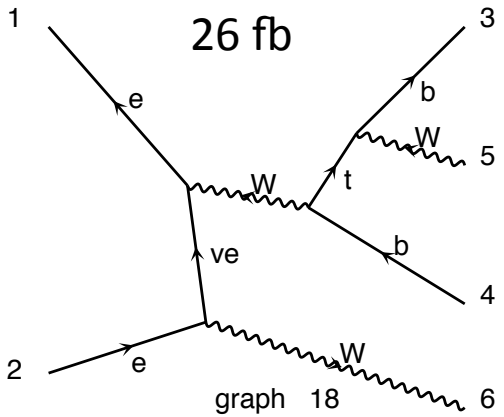
- in the ttH analysis, the ttbar background is the dominant contribution
- important also to estimate the ttbar off-resonance contribution
- MadGraph calculations for e+e- -> bWbW (10k events generated)

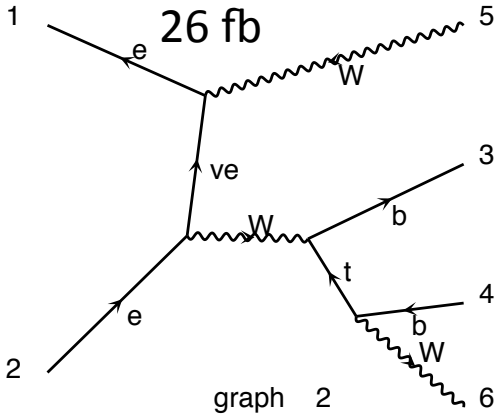
process	xsec @ E_{cm}=500 GeV
e+e- -> tt	484 fb
e+e- -> W*W -> tbW	94 fb
e+e- -> WWZ -> WWbb	9 fb



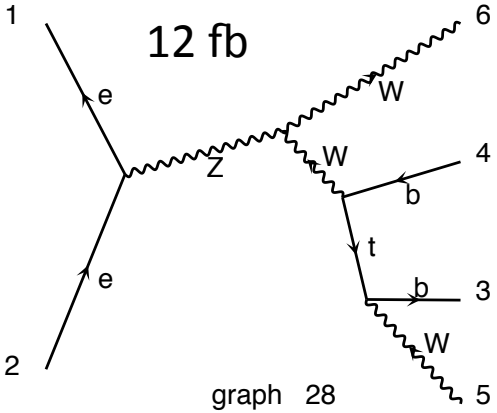


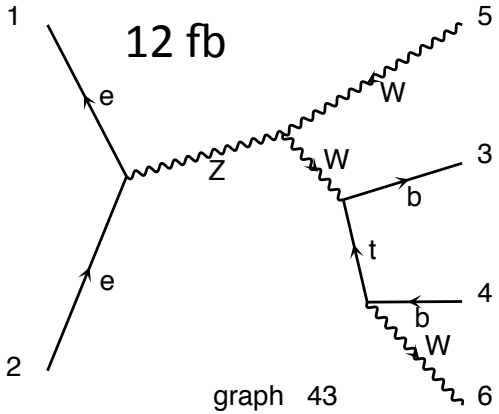
e+e- -> tt -> bWbW
484 fb

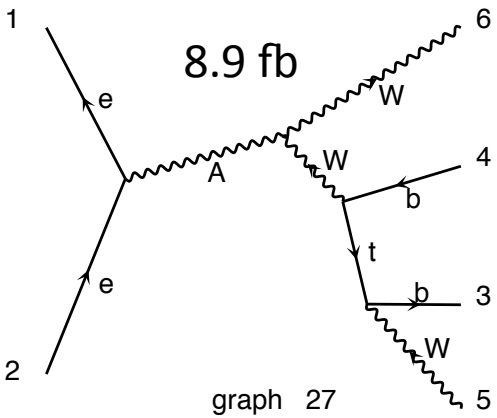


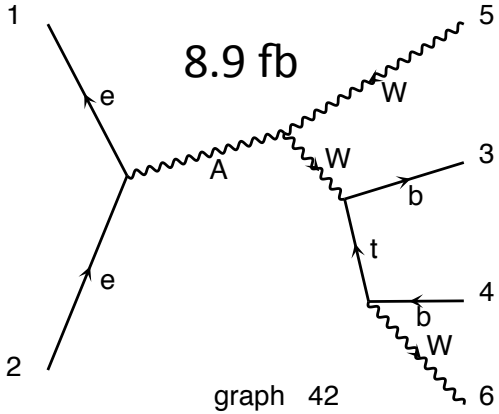


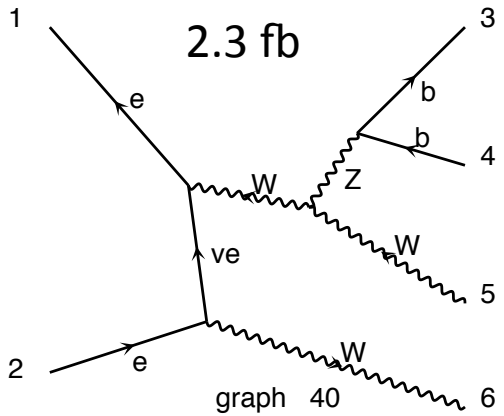
e+e- -> tbW -> bWbW
94 fb

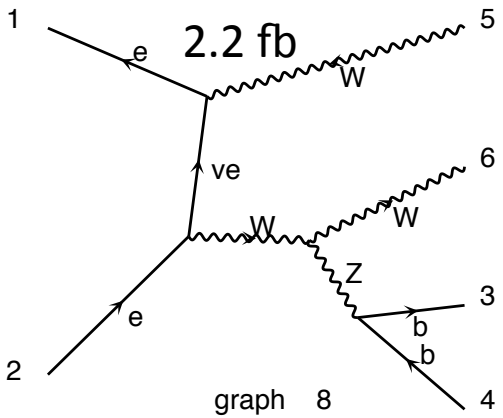




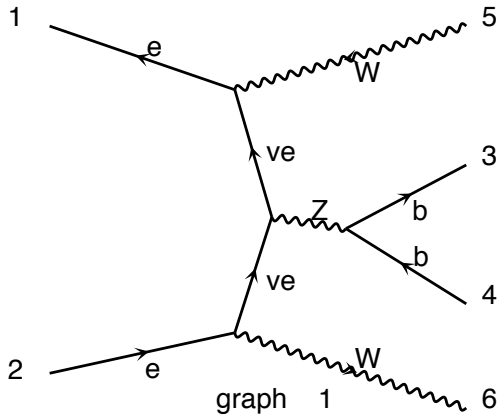




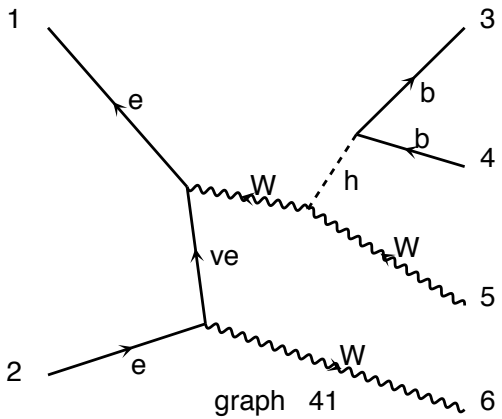




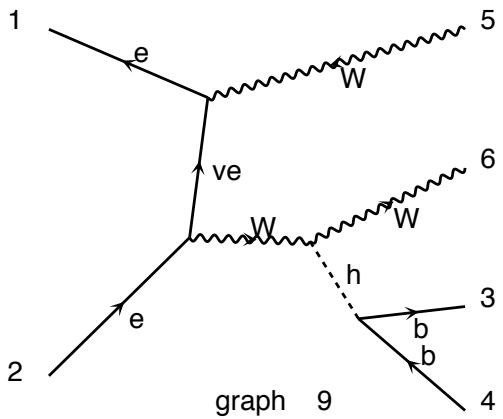
e+e- -> WWZ -> WWbb
9 fb



1.5 fb



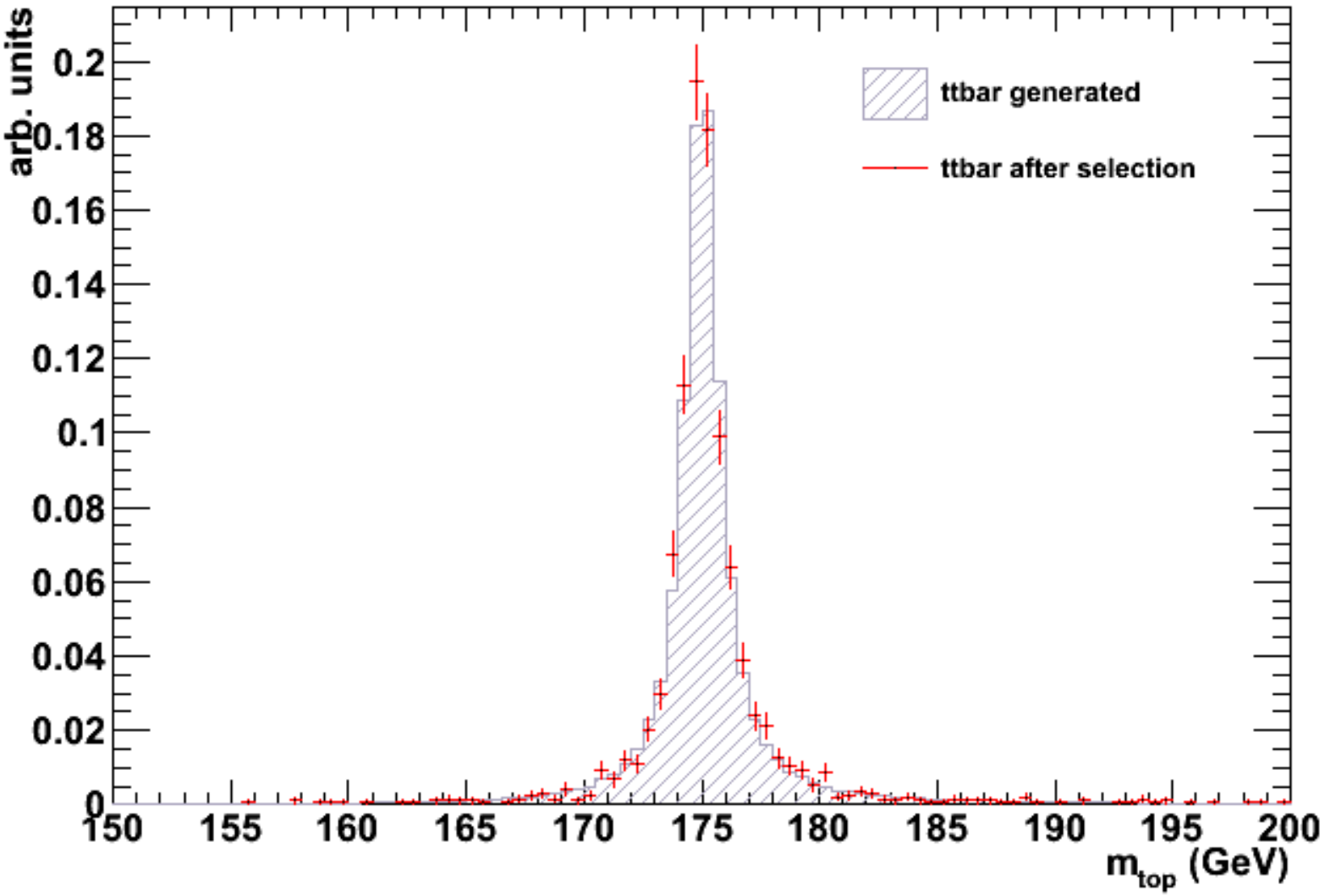
1.4 fb



1.3 fb

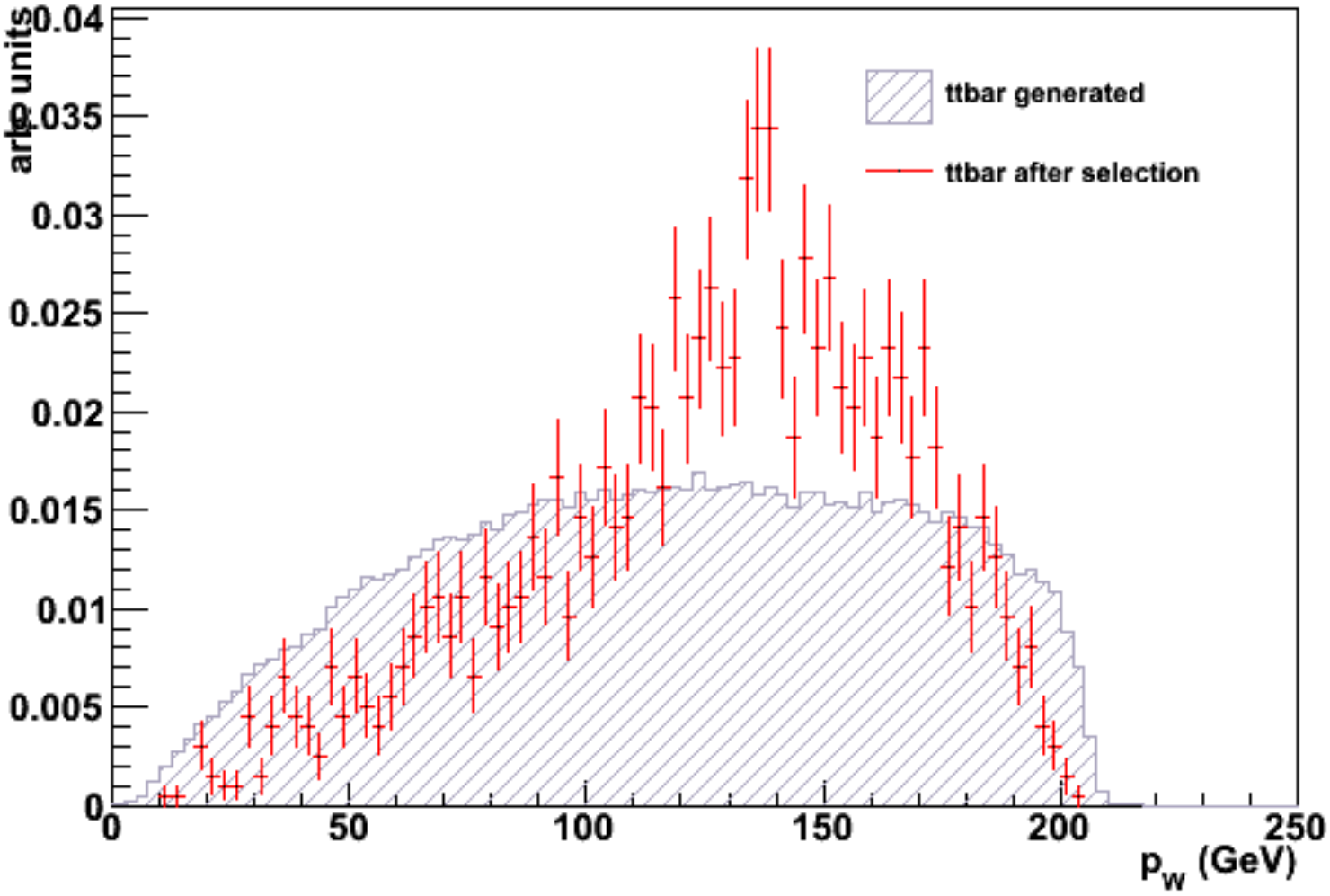
top mass

- generated spectrum before/after event selection



W momentum

- generated spectrum before/after event selection



- there is no selection bias on the top candidate mass
  - background contribution at most +20% (for bWbW)
- it is not immediately clear if the rejection rate for tbW background is actually better…
  - plan to check other distributions e.g. thrust
  - need to generate samples (use MadGraph…?)