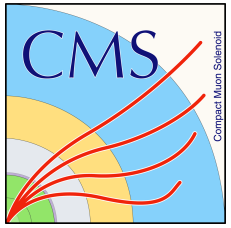
HEP Weekly Report

George Bakas



Weekly Report

- Analysis
  - Background shape extraction
  - Get familiar with RooFit
  - Fit in SR_A region
    - Signal Region (SR): Baseline selection + topTagger + b-tagging (2 b-tag) + Mass Cut [120,220]GeV
    - Control Region (CR): Baseline selection + topTagger + revert b-tagging + Mass Cut [120,220]GeV
    - Signal Region A (SR_A): Extended SR → SR – Mass Cut

    - In SR_A we fit signal from MC, Subdominant Bkg from MC and Data

  - MergeFilesMC.py : piece of code to hadd all root files from production
    - Changes in the eostools.py script → script is throwing errors
    - Avoid functions from eostools.py
    - Script is now using NO eostools.py functions
    - Not working on lxplus7 (looking into this)→ Lisa Found out why, probably a library is not loaded in the new root version leading to inconcistencies

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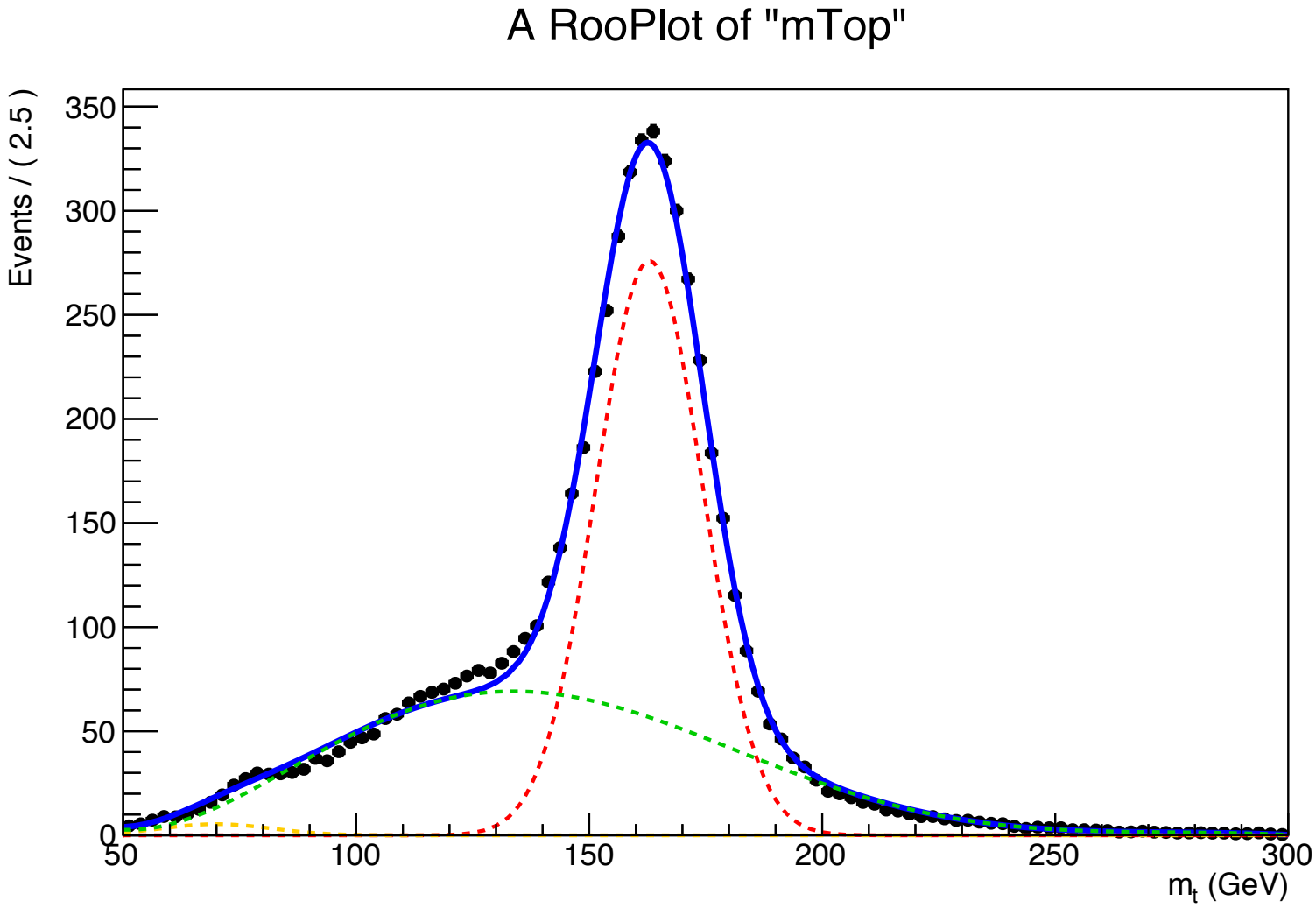
- Template of the tt signal from MC
- The shape consists of:
  - a smooth polynomial
  - two Gaussians (one describes the W resonance from unmerged top decays and the other describes the fully merged top resonance).



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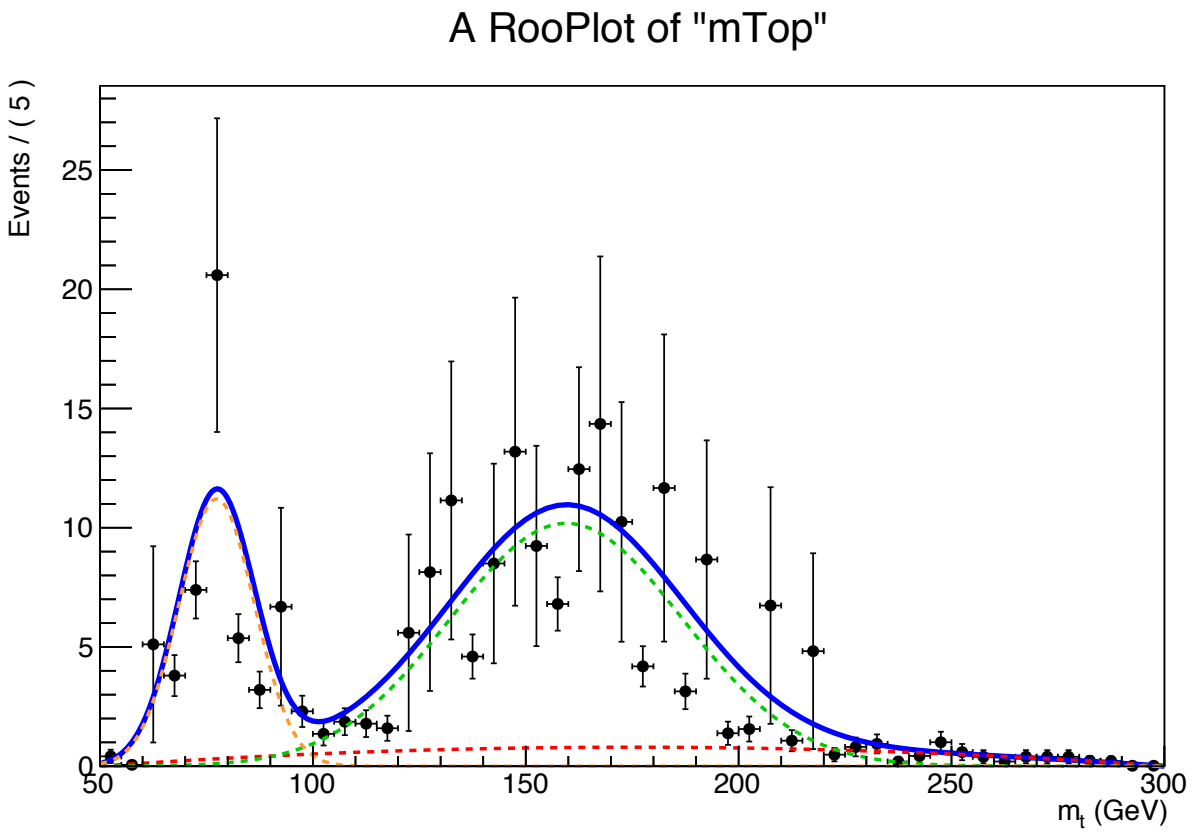

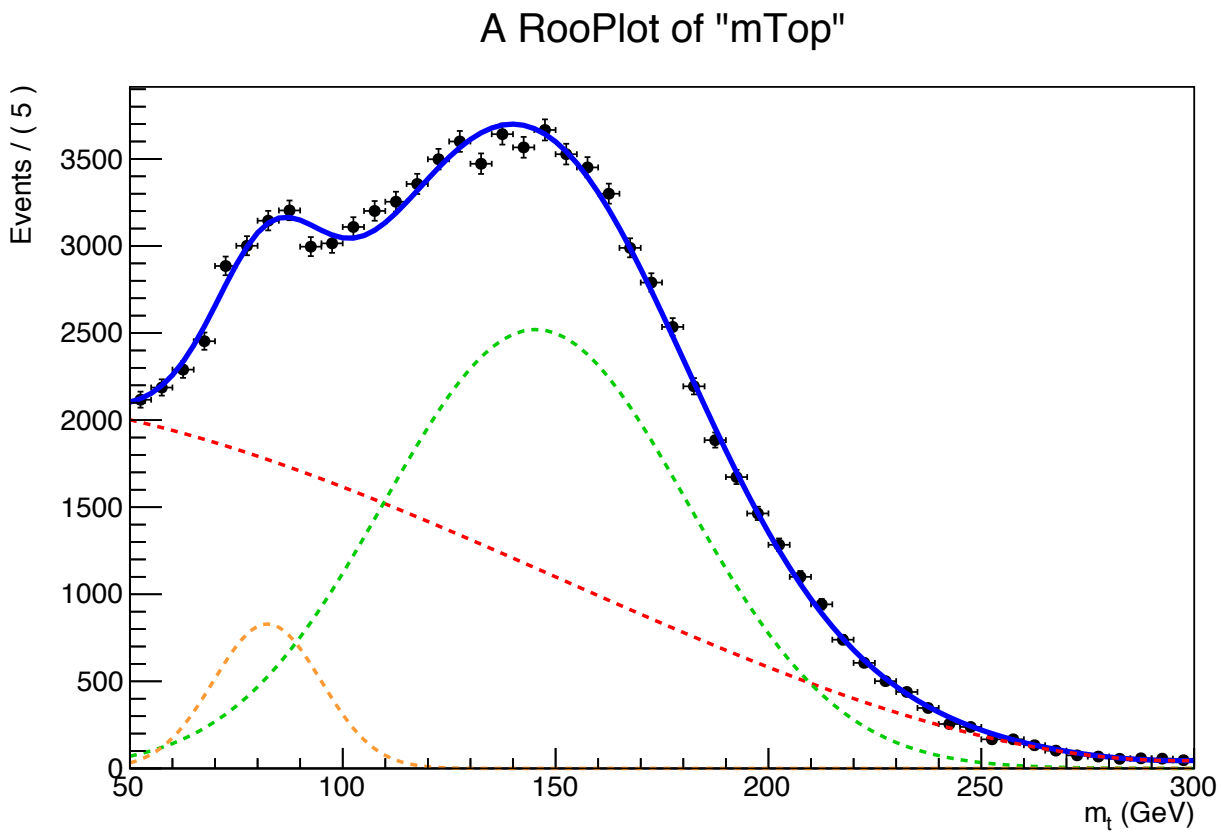

- The shape of the subdominant bkgs is taken from simulation
- The subdominant backgrounds contains a smooth polynomial and two Gaussians

- The QCD shape is taken from data
- The QCD shape is composed of a smooth polynomial and a Gaussian + Gaussian for W resonance.

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