

Weekly Report

NTUA

13/3/2020

George Bakas



Status Report

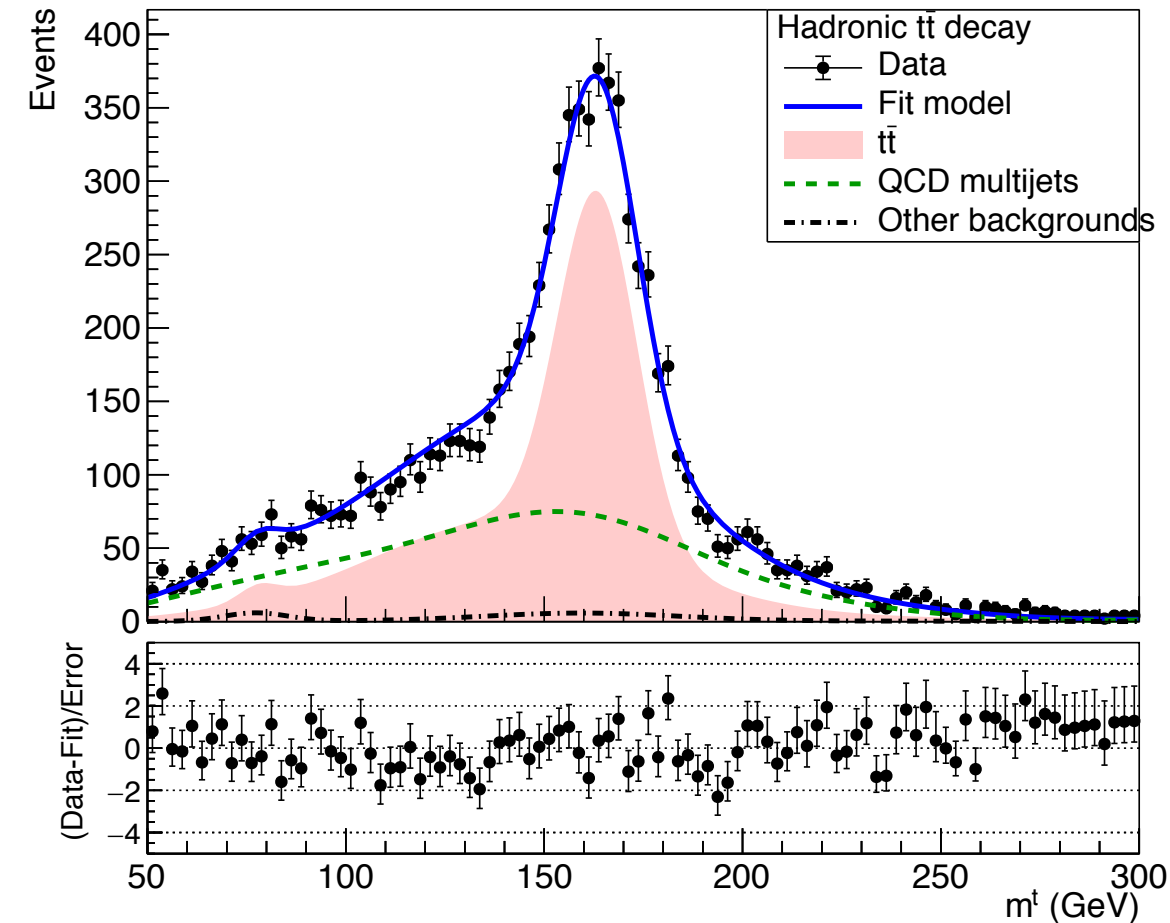
- Analysis:
 - Mass fit
 - Contamination in CR from top
 - Extract the $t\bar{t}$ from CR
 - Giannis has suggested a method that seems to work
 - Simultaneous fit
- NTUA HEP Site
 - <http://modio.physics.ntua.gr/~gbakas/gr/>
 - <http://modio.physics.ntua.gr/~gbakas/en/>
 - Comments/Modifications



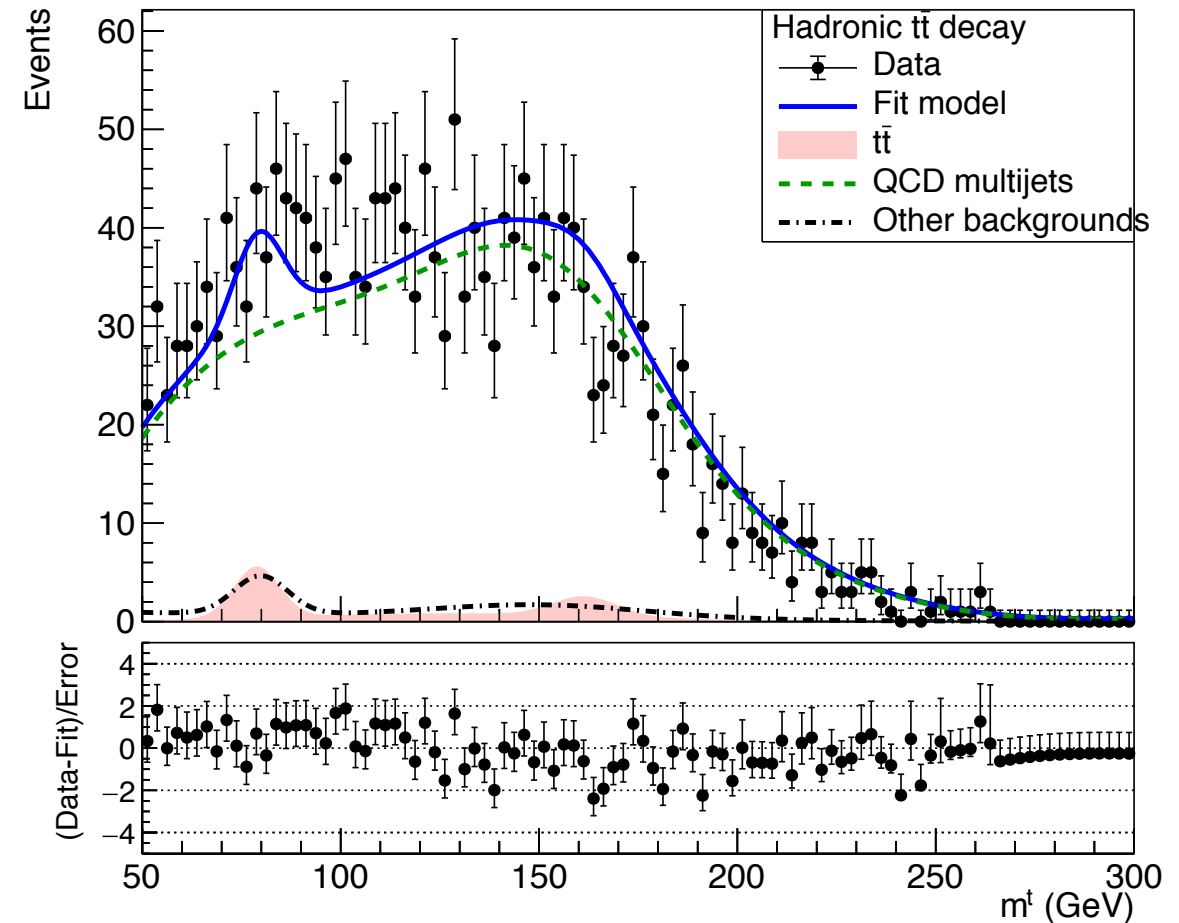
Simultaneous Fit 2016

- I choose to keep qcd params constant in the fit
- What I care for \rightarrow $t\bar{t}$ contamination in the CR

A RooPlot of "mTop"

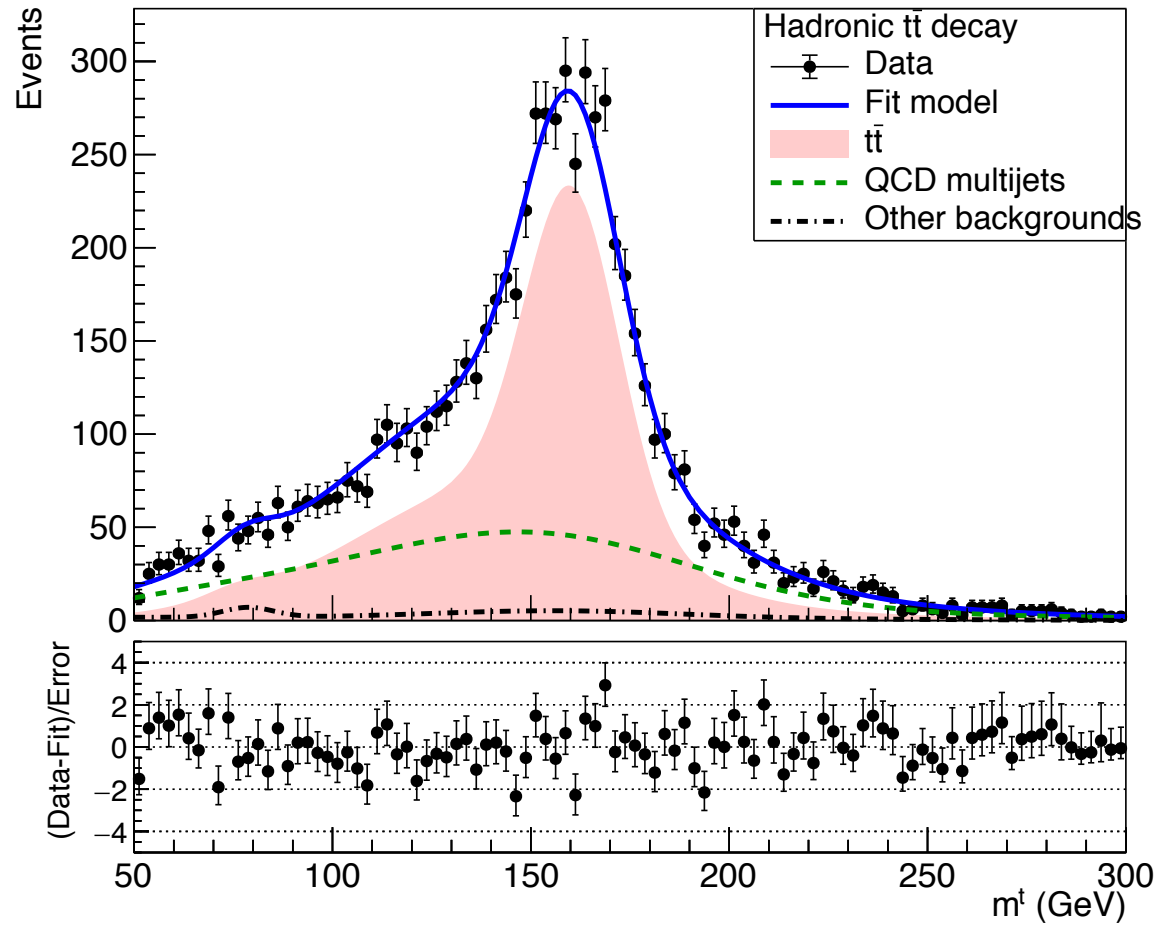


A RooPlot of "mTop"

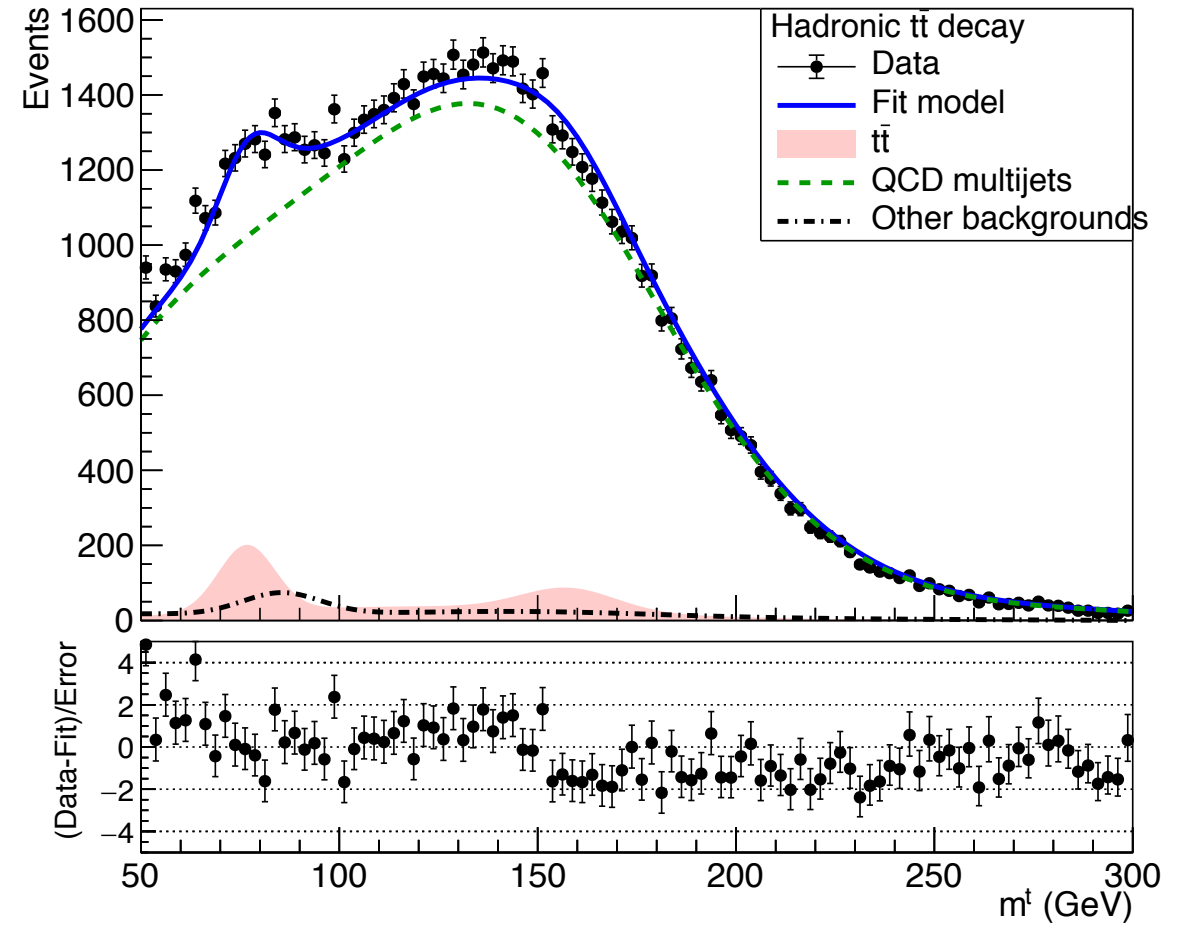


Simultaneous Fit 2017

A RooPlot of "mTop"

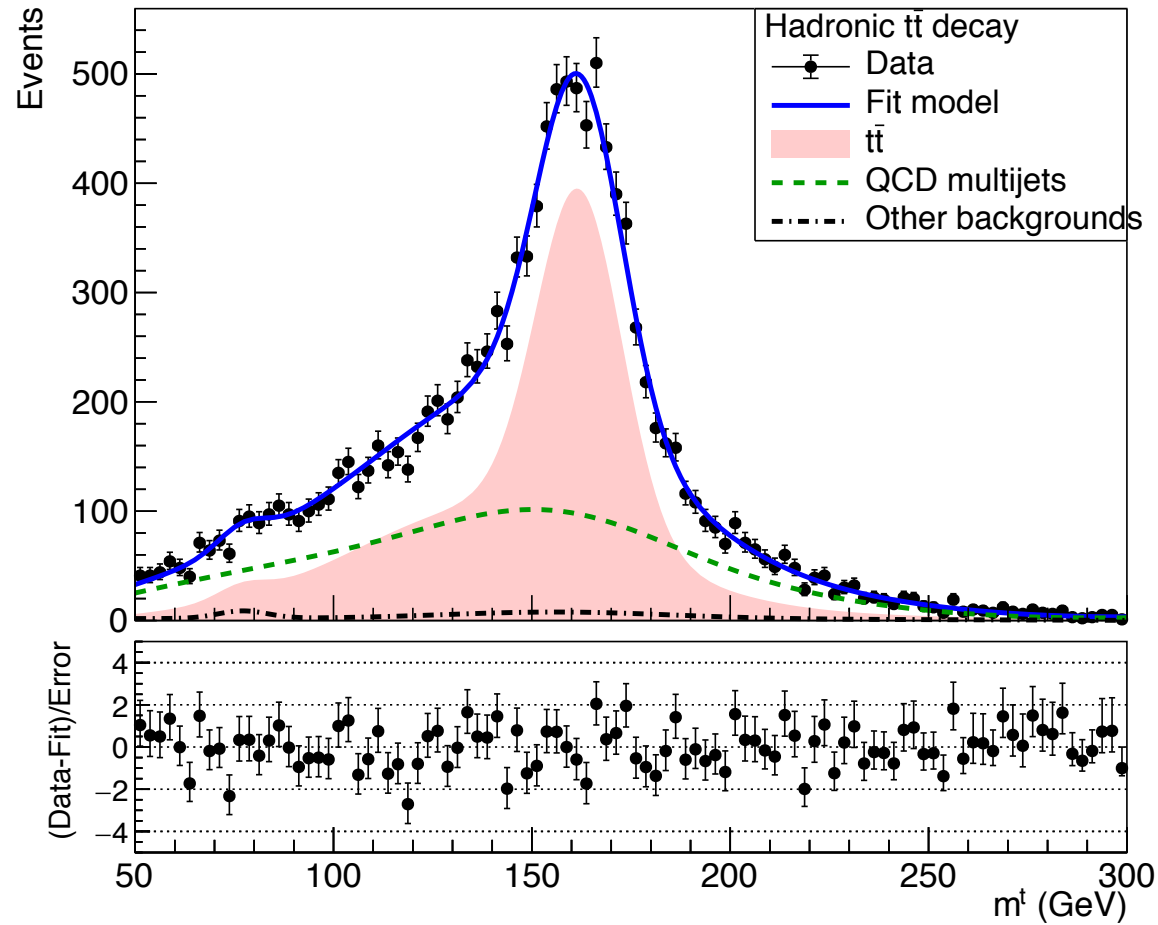


A RooPlot of "mTop"

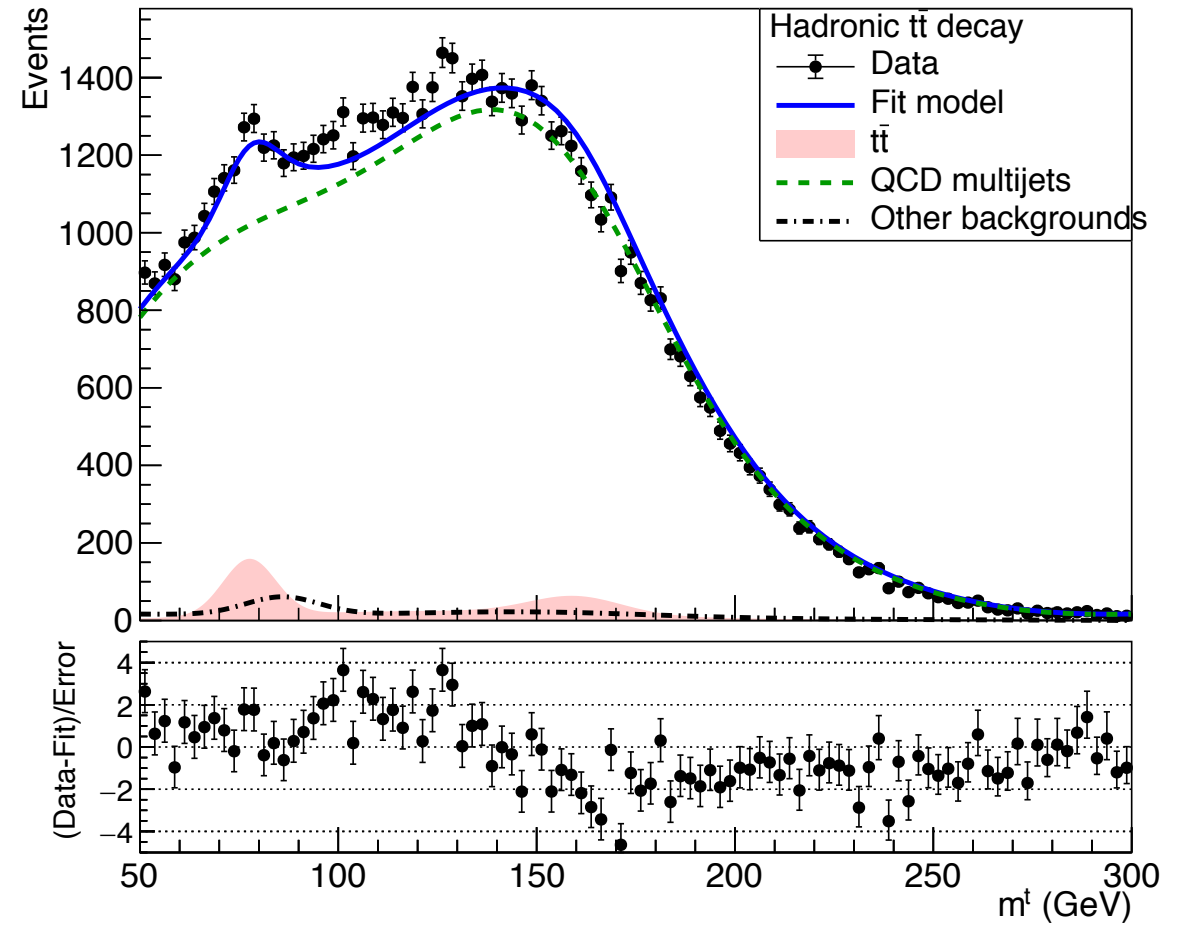


Simultaneous Fit 2018

A RooPlot of "mTop"



A RooPlot of "mTop"



Simultaneous Fit

2016

Floating Parameter	FinalValue +/-	Error
btagEff	8.8780e-01 +/-	3.11e-02
kMassResol	9.0200e-01 +/-	2.81e-02
kMassScale	9.9886e-01 +/-	2.07e-03
kQCD_2b	9.9881e-01 +/-	1.06e+00
nFitBkg_0b	9.5853e+01 +/-	1.62e+01
nFitBkg_2b	2.0658e+02 +/-	3.33e+01
nFitQCD_0b	1.9232e+03 +/-	6.56e+01
nFitQCD_2b	3.3364e+03 +/-	1.93e+02
nFitSig	6.2963e+03 +/-	4.85e+02

N0_observed = 79.259, N2_observed = 4962.72
 Ntt expected: 11917.6
 Ntt observed: 5041.98
 Signal strength r: 0.423069

2017

Floating Parameter	FinalValue +/-	Error
btagEff	5.3057e-01 +/-	1.38e-02
kMassResol	1.1167e+00 +/-	4.04e-02
kMassScale	9.8249e-01 +/-	2.63e-03
kQCD_2b	3.3589e-02 +/-	1.69e-02
nFitBkg_0b	1.8341e+03 +/-	3.26e+02
nFitBkg_2b	2.6049e+02 +/-	4.60e+01
nFitQCD_0b	7.0731e+04 +/-	4.82e+02
nFitQCD_2b	2.3226e+03 +/-	1.45e+02
nFitSig	1.6560e+04 +/-	9.54e+02

N0_observed = 3649.34, N2_observed = 4661.68
 Ntt expected: 17118.9
 Ntt observed: 8311.02
 Signal strength r: 0.485486

2018

Floating Parameter	FinalValue +/-	Error
btagEff	6.2800e-01 +/-	1.55e-02
kMassResol	1.0027e+00 +/-	2.95e-02
kMassScale	9.8978e-01 +/-	1.93e-03
kQCD_2b	5.5556e-02 +/-	2.60e-02
nFitBkg_0b	1.5470e+03 +/-	4.46e+01
nFitBkg_2b	3.4164e+02 +/-	4.59e+01
nFitQCD_0b	6.7663e+04 +/-	4.24e+02
nFitQCD_2b	4.7508e+03 +/-	1.97e+02
nFitSig	1.8335e+04 +/-	1.00e+03

N0_observed = 2537.28, N2_observed = 7231.3
 Ntt expected: 22812.9
 Ntt observed: 9768.58
 Signal strength r: 0.428205

