

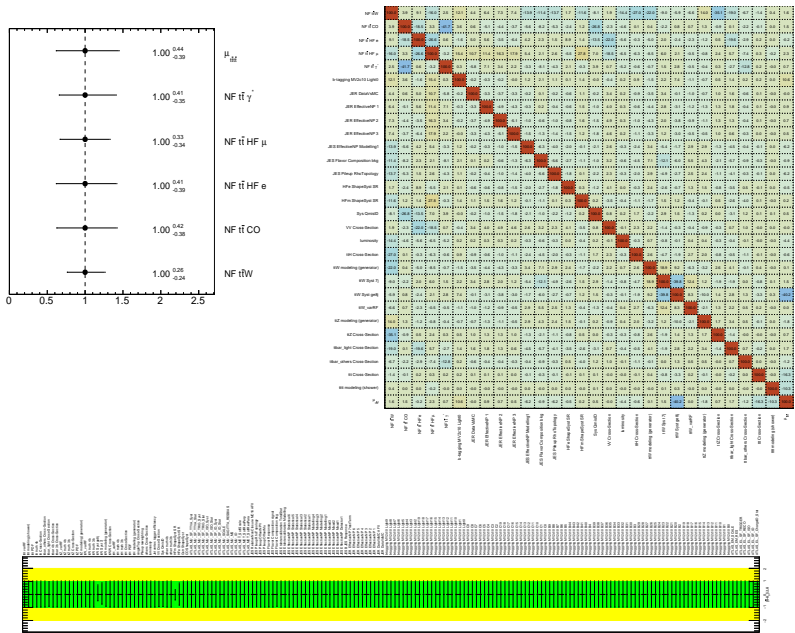
# Recent Work

MENG-JU TSAI, ZHI ZHENG, JIANMING QIAN

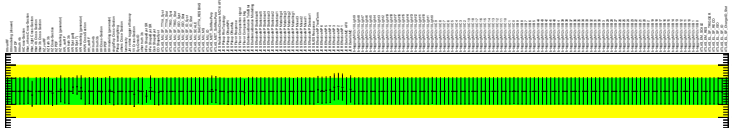
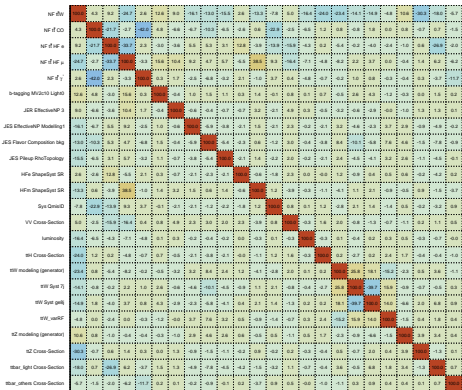
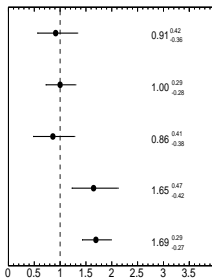
June 9, 2020

## Fit results

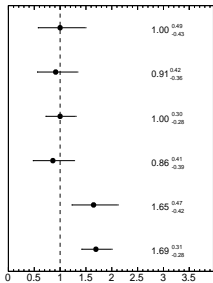
# SM 4tops Plain Asimov Fit



# SM/BSM Real CR-Only Fit

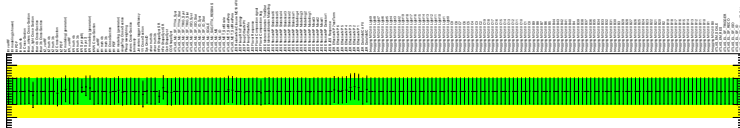
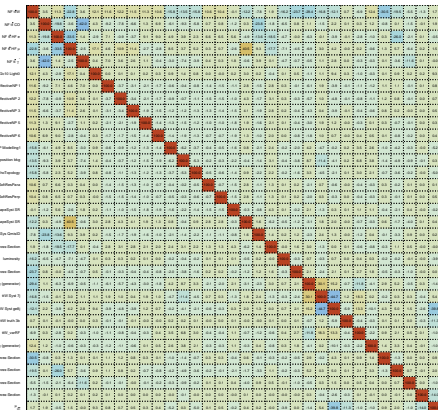


## SM Realistic Asimov Fit

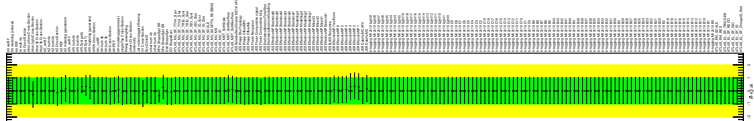
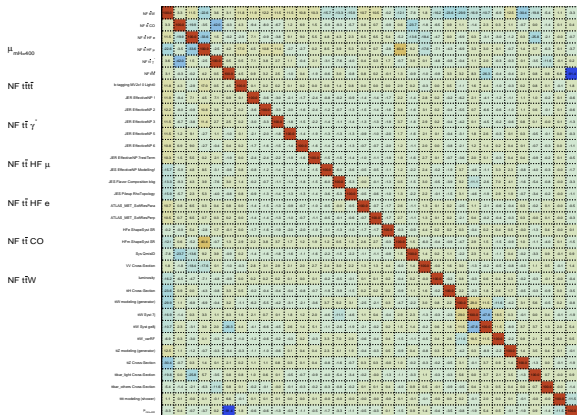
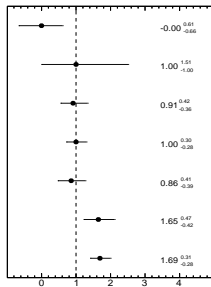
 $NF\ t\bar{t}\ \gamma$ 
$$NF \text{ } t\bar{t} \text{ } HF \text{ } \mu$$
$$NF \bar{t} t HF e$$

NF tĩ CO

NF tEW



## 1

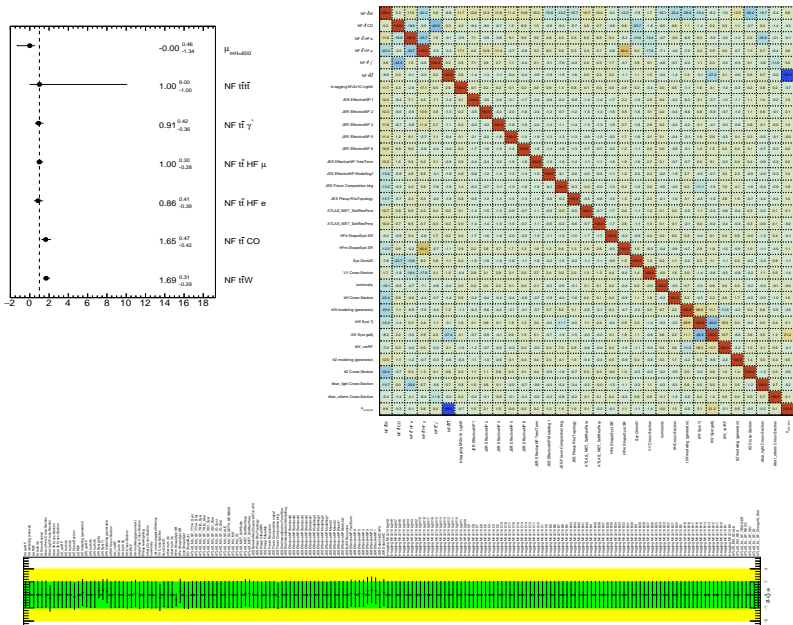


## 1



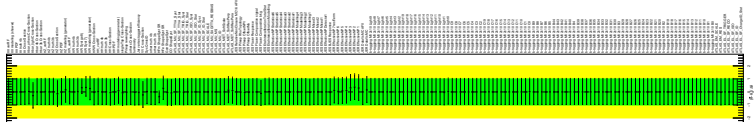
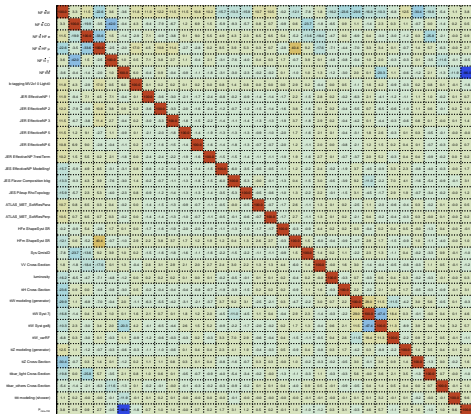
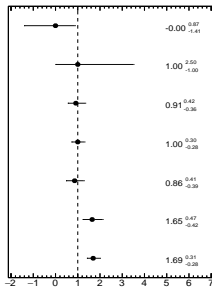
# Realistic Asimov HT Fit - mH600 - Free Float NF\_tttt w/ nominal

1





## 1

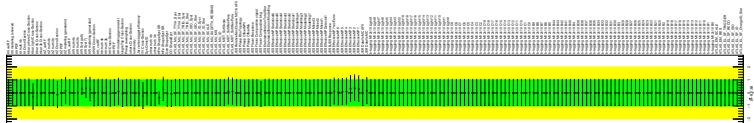
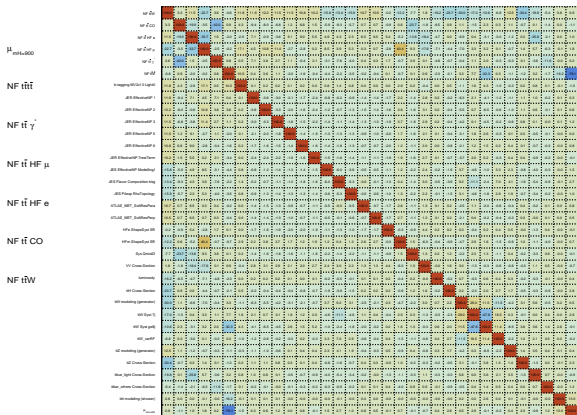
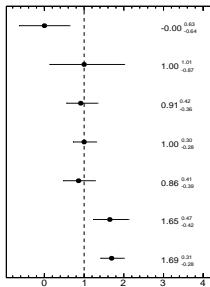


## 1

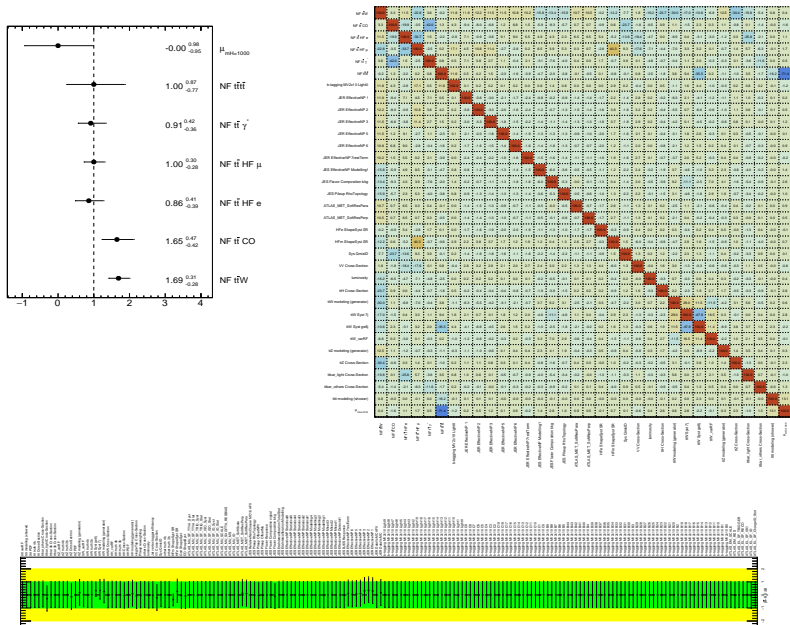


# Realistic Asimov HT Fit - mH900 - Free Float NF\_tttt w/ nominal

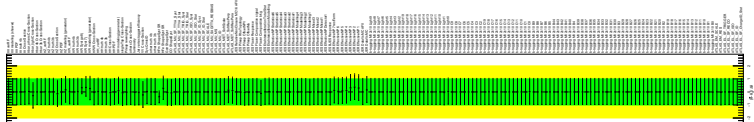
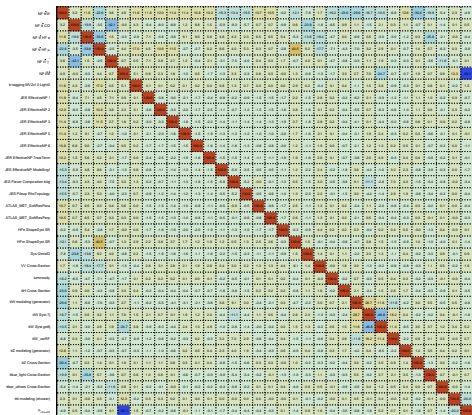
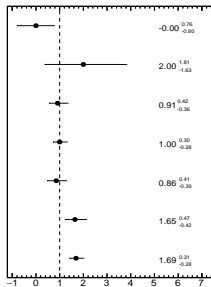
1



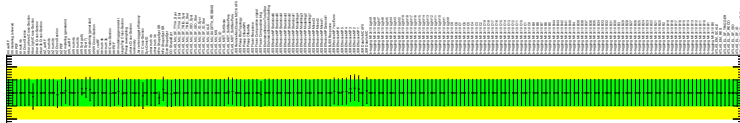
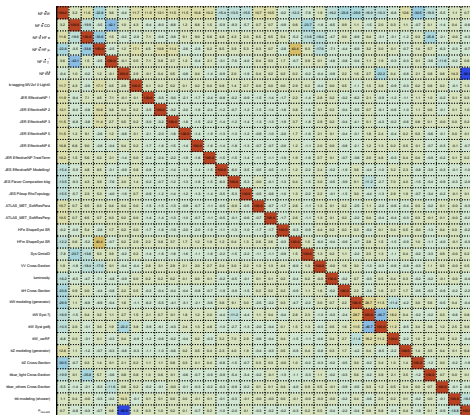
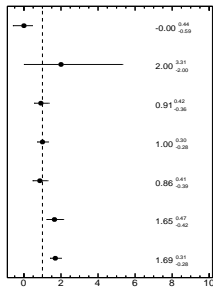
Realistic Asimov HT Fit - mH1000 - Free Float NF\_tttt w/  
nominal 1



## 2



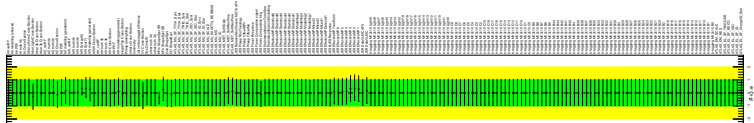
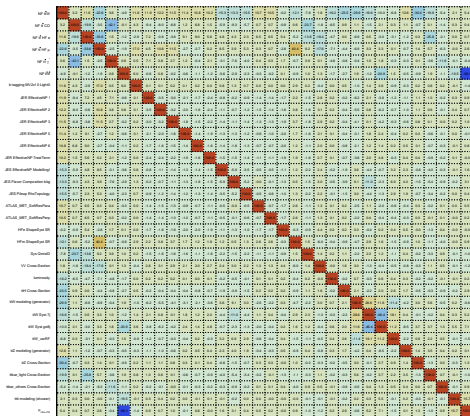
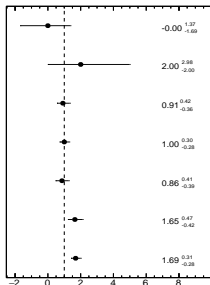
## 2



## 2



## 2

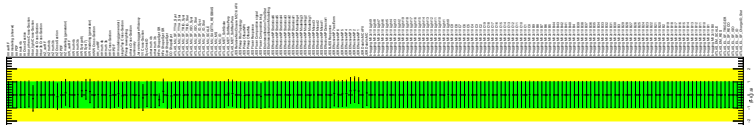
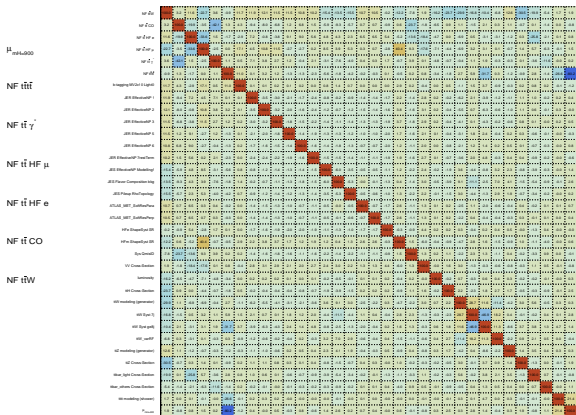
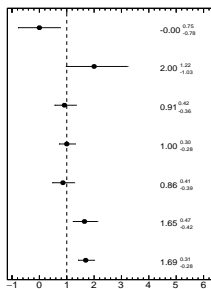




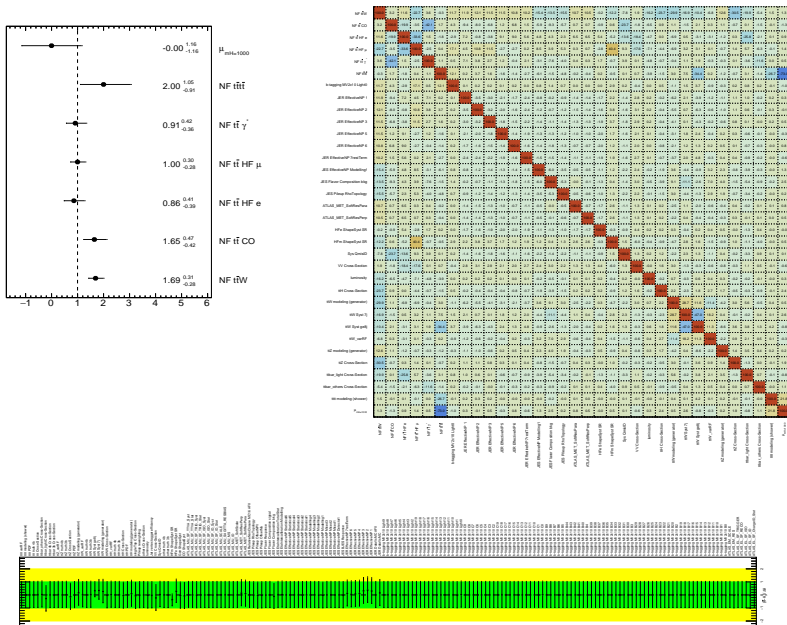
## 2



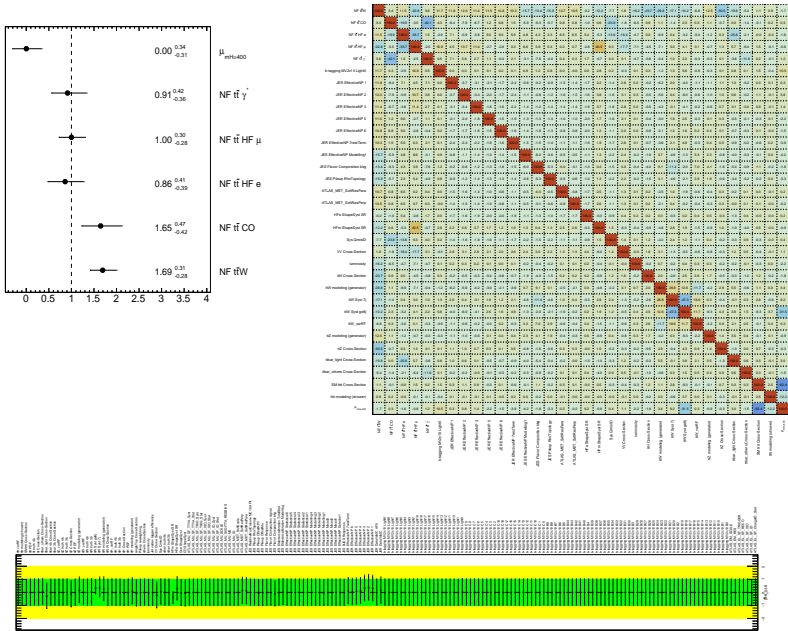
## 2



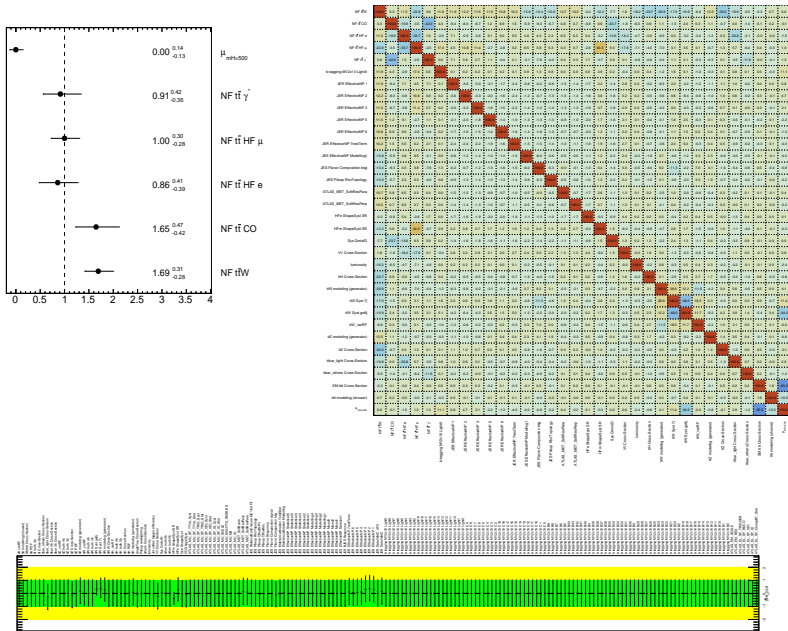
Realistic Asimov HT Fit - mH1000 - Free Float NF\_tttt w/  
nominal 2



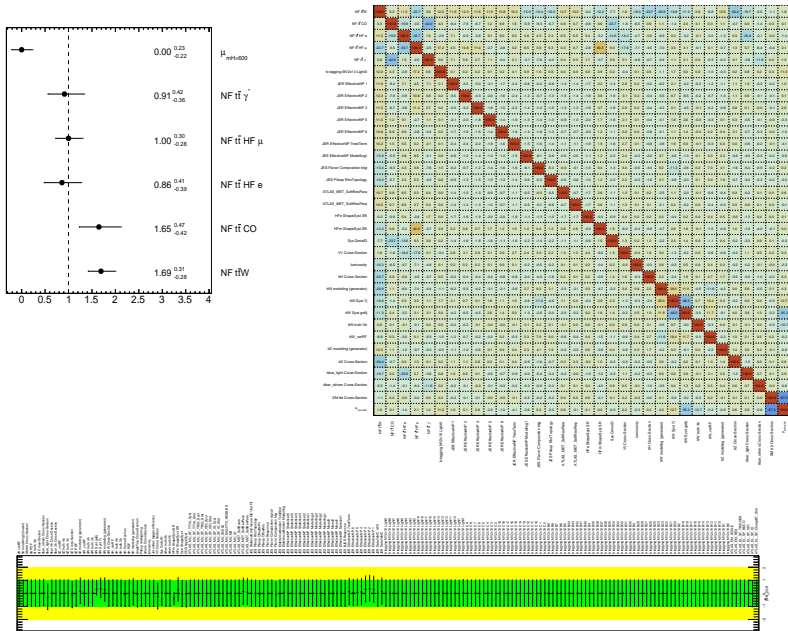
## Realistic Asimov HT Fit - mH400 - 50% tttt\_Xsec, NF\_tttt=1



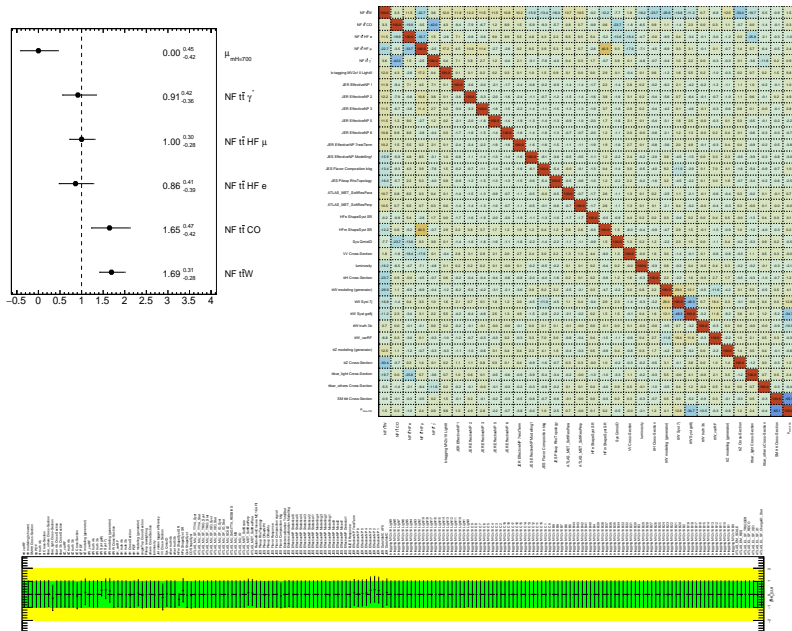
## Realistic Asimov HT Fit - mH500 - 50% tttt\_Xsec, NF\_tttt=1



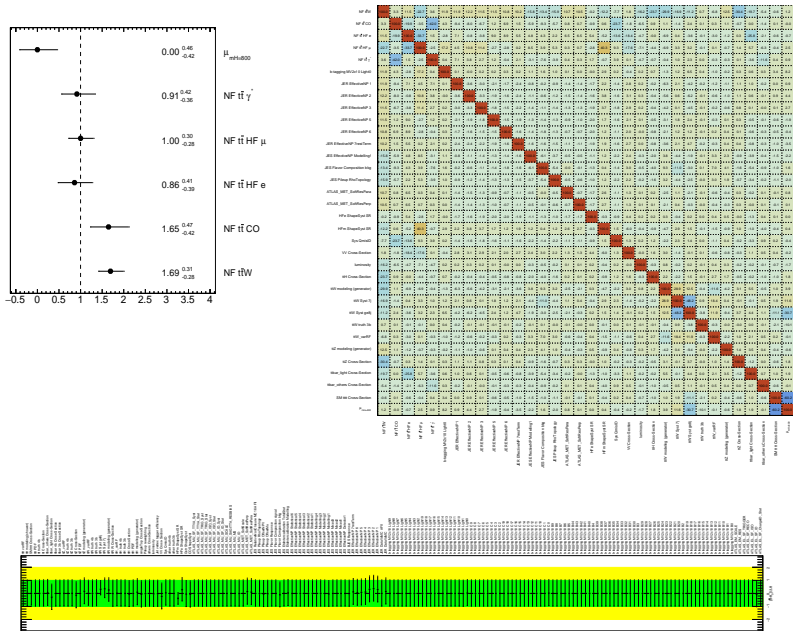
## Realistic Asimov HT Fit - mH600 - 50% tttt\_Xsec, NF\_tttt=1



# Realistic Asimov HT Fit - mH700 - 50% tttt\_Xsec, NF\_tttt=1

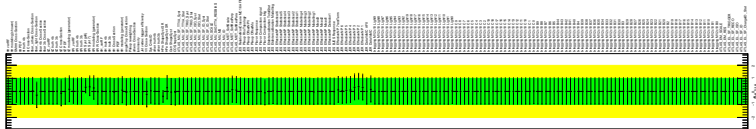
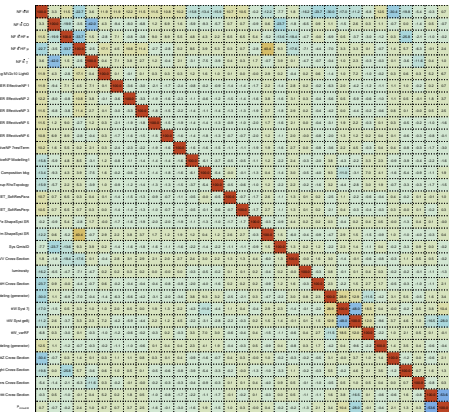
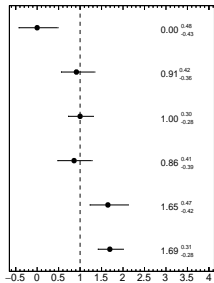


## Realistic Asimov HT Fit - mH800 - 50% tttt\_Xsec, NF\_tttt=1

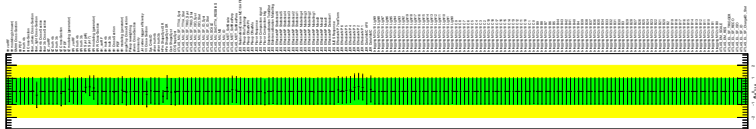
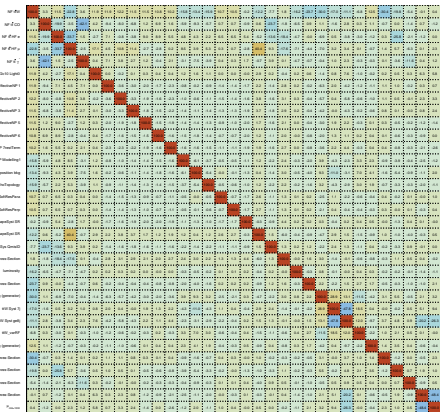
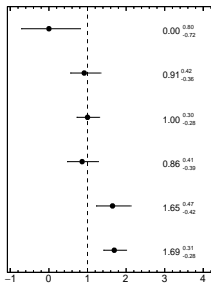




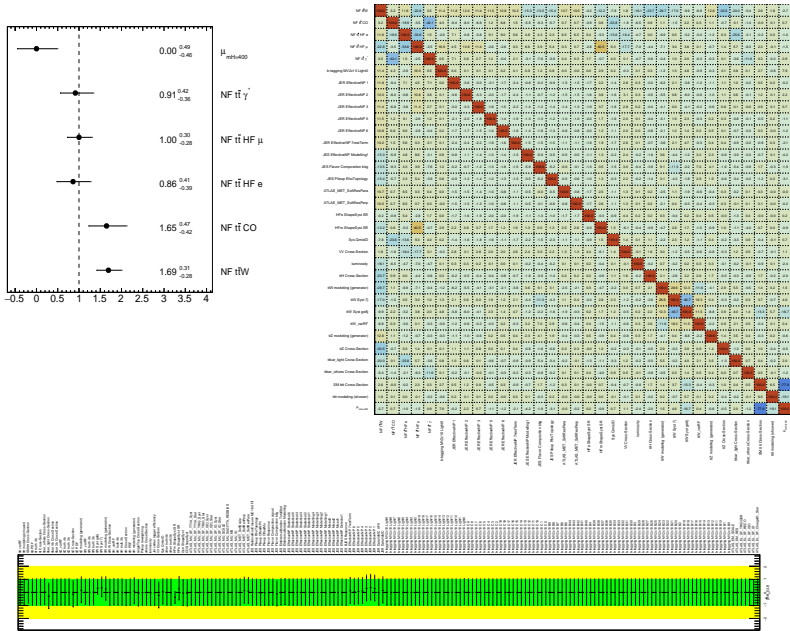
## Realistic Asimov HT Fit - mH900 - 50% tttt\_Xsec, NF\_tttt=1



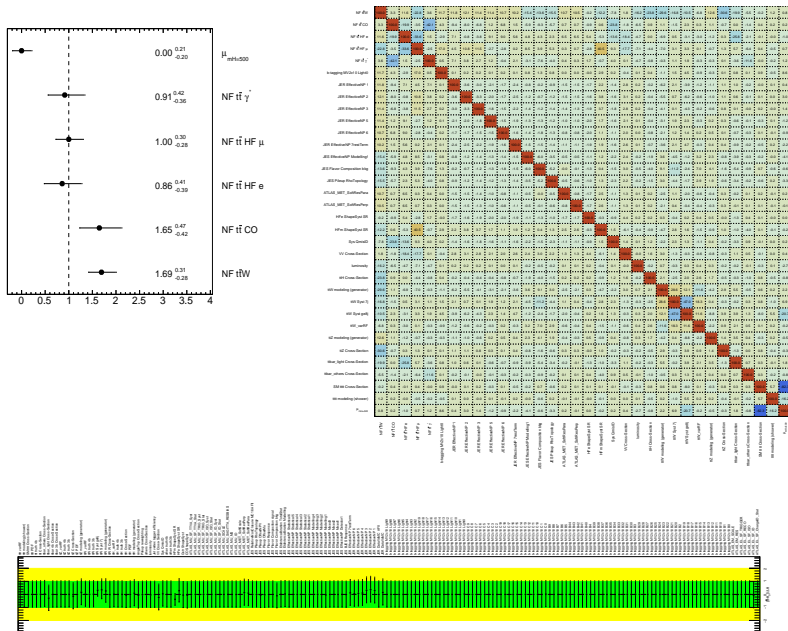
# Realistic Asimov HT Fit - mH1000 - 50% tttt\_Xsec, NF\_tttt=1



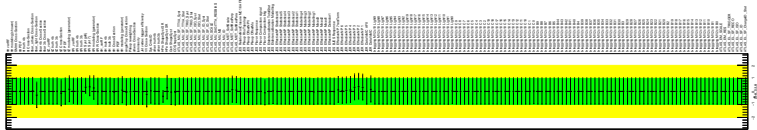
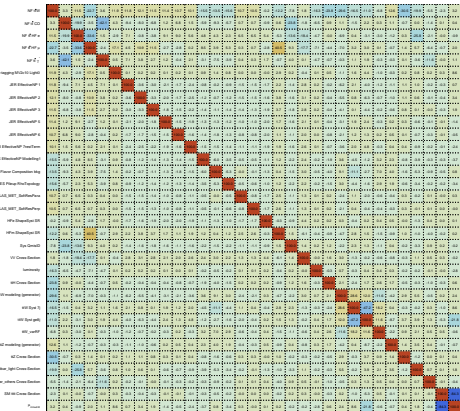
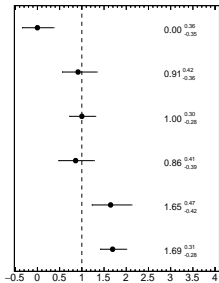
## Realistic Asimov HT Fit - mH400 - 50% tttt\_Xsec, NF\_tttt=2



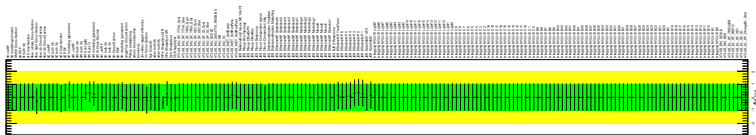
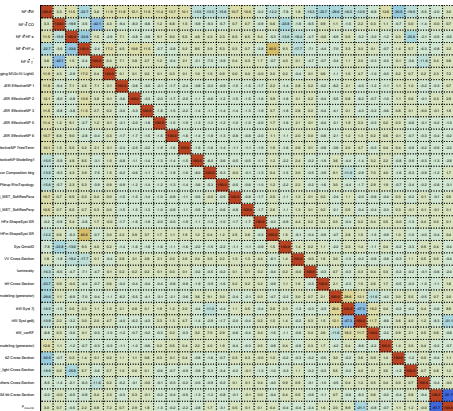
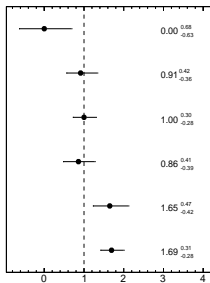
# Realistic Asimov HT Fit - mH500 - 50% tttt\_Xsec, NF\_tttt=2



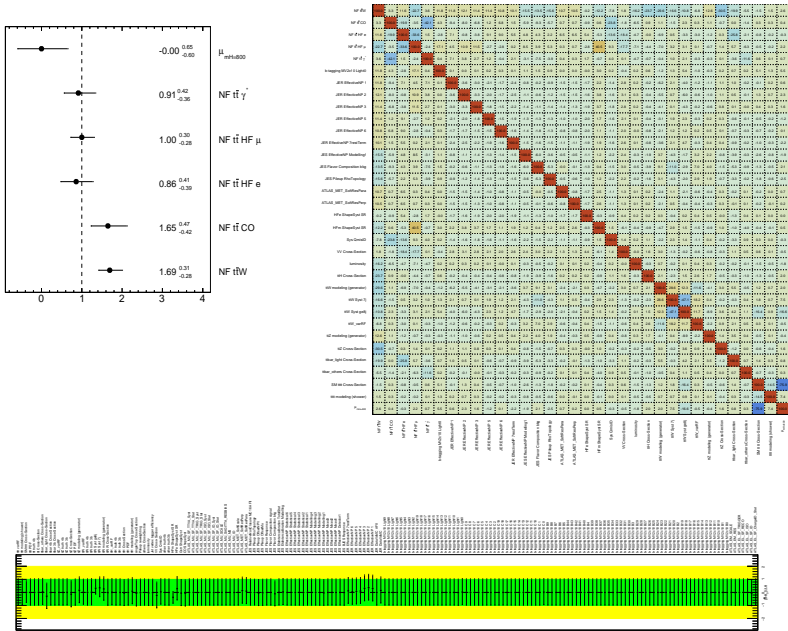
## Realistic Asimov HT Fit - mH600 - 50% tttt\_Xsec, NF\_tttt=2



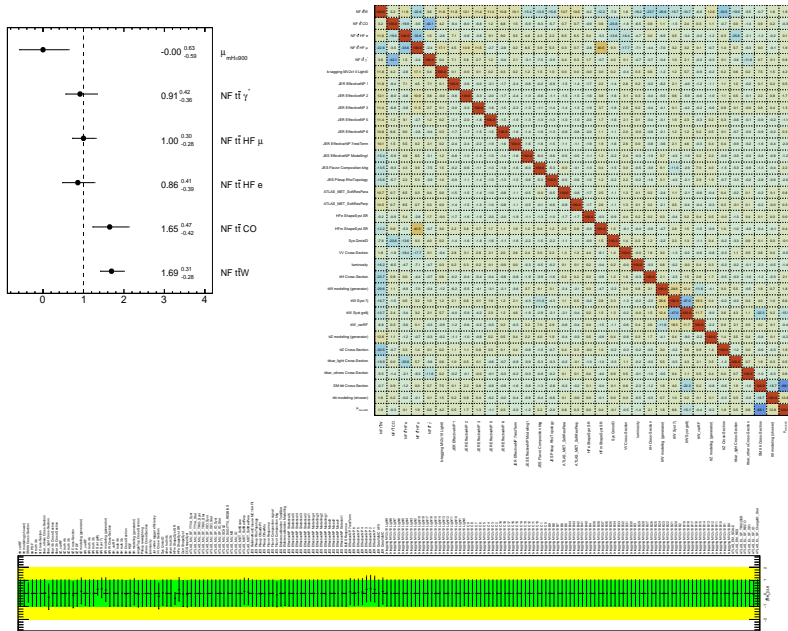
# Realistic Asimov HT Fit - mH700 - 50% tttt\_Xsec, NF\_tttt=2



## Realistic Asimov HT Fit - mH800 - 50% tttt\_Xsec, NF\_tttt=2

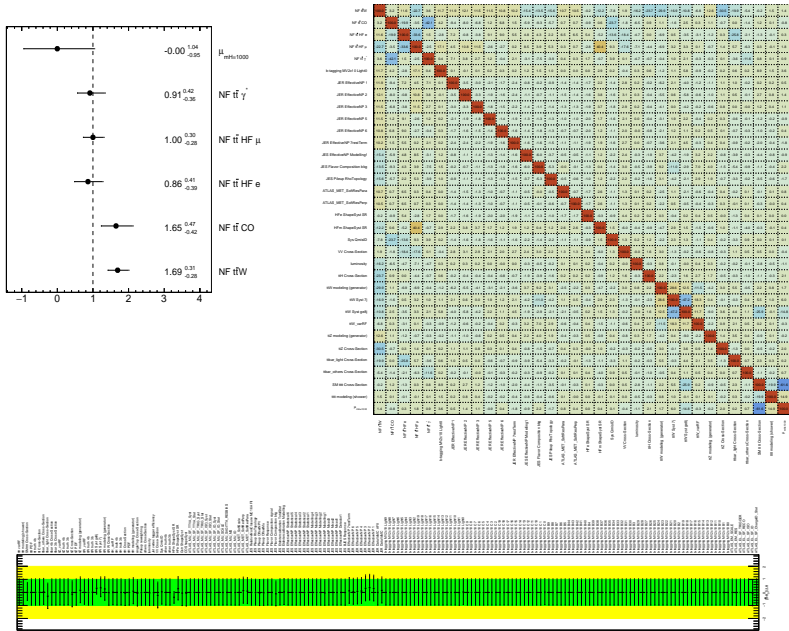


## Realistic Asimov HT Fit - mH900 - 50% tttt\_Xsec, NF\_tttt=2

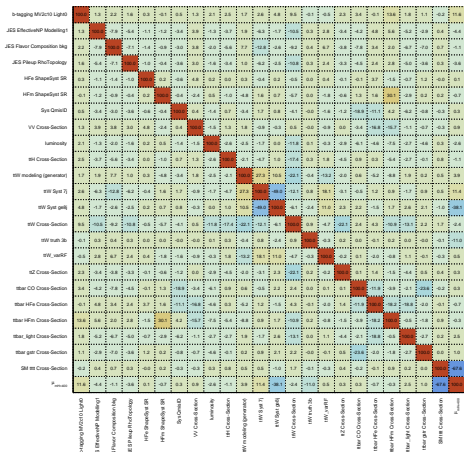
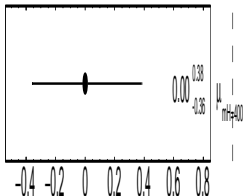




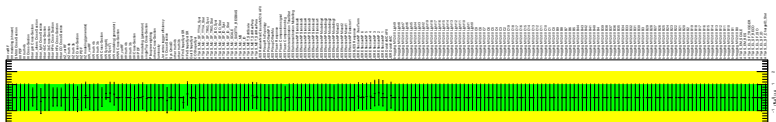
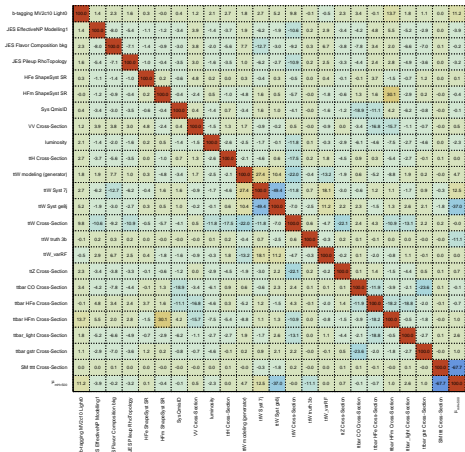
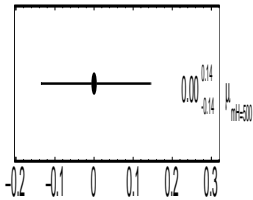
## Realistic Asimov HT Fit - mH1000 - 50% tttt\_Xsec, NF\_tttt=2



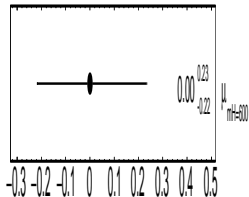
# Realistic Asimov HT Fit - mH400 - CutAndCount,50% tttt\_Xsec, Fix all NFs, Fix NF\_tttt=1



Realistic Asimov HT Fit - mH500 - CutAndCount,50% tttt\_Xsec, Fix  
all NFs, Fix NF\_tttt=1

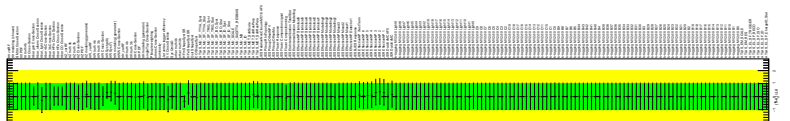
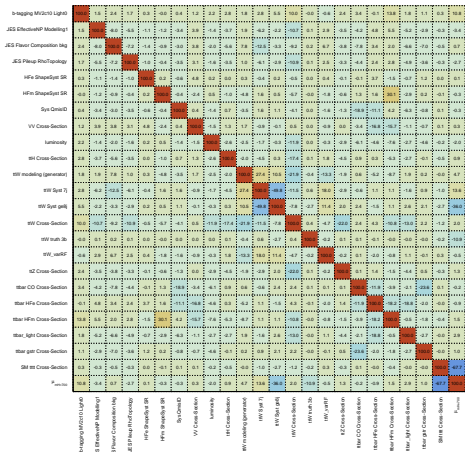
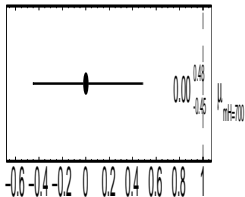


# Realistic Asimov HT Fit - mH600 - CutAndCount, 50% tttt\_Xsec, Fix all NFs, Fix NF\_tttt=1

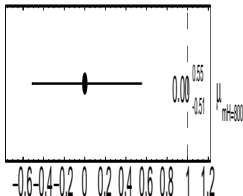


1-bagging M2c10 Light	0.00	1.4	2.4	1.7	0.3	-0.0	0.4	1.2	2.2	2.7	1.8	2.7	5.4	10.0	-0.0	0.5	2.4	3.4	-0.1	1.8	1.1	0.2	10.8
JCS EffectiveNP Modeling	1.4	0.0	-6.0	-6.3	-1.1	-1.3	-0.6	3.9	-1.4	-0.7	1.9	-4.2	-2.1	-10.7	0.3	1.8	-3.3	-4.2	4.8	5.5	-0.2	-0.9	-0.3
JCS Flavor Composition bag	2.4	-6.0	0.0	-7.3	-1.4	-0.9	-0.0	3.8	-0.0	-6.6	7.1	-12.6	-3.2	-8.2	0.7	-0.8	3.4	2.3	-4.6	-7.0	-0.3	0.5	0.5
JCS Flavor RhoTopology	1.7	0.0	-7.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
HFm ShapeSyst SR	0.3	-1.1	-1.4	-1.0	-0.2	0.2	0.6	6.8	0.2	0.0	0.3	-0.4	0.2	0.5	0.0	0.4	-0.1	-0.1	3.7	-1.4	-0.7	1.0	0.0
HFm ShapeSyst SR	-0.0	-1.0	-0.9	-0.4	0.2	0.0	0.6	-0.4	-0.1	-0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Sys GenID	0.4	-0.4	-0.0	-0.3	0.6	-0.4	0.0	0.4	-1.6	0.7	-0.4	1.6	1.0	-6.1	0.0	1.6	-1.3	-0.8	-11.1	4.2	-4.3	-0.4	-0.2
VV Cross-Section	1.2	3.9	3.8	3.1	8.8	-2.4	-0.4	0.0	0.0	1.3	1.7	-0.9	-0.1	0.5	0.0	0.0	0.0	0.4	16.8	-0.7	-1.1	-0.7	0.1
Luminosity	2.2	-1.4	0.0	-1.6	0.2	0.5	1.6	-1.8	0.4	0.4	-1.7	-0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
tt Cross-Section	2.7	-0.3	0.6	-0.0	-0.0	-1.0	-0.7	1.3	-0.6	0.0	0.2	-0.5	0.4	-17.5	0.1	1.8	-4.8	-0.9	0.3	-0.2	-0.7	-0.3	
ttW modeling (generation)	1.8	1.0	1.0	1.0	0.0	-0.4	0.0	1.7	0.0	-0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
ttW Syst 1	2.7	6.2	12.8	-6.1	0.4	1.8	1.6	-0.9	-1.7	-6.5	21.5	-0.0	-0.7	-11.6	0.8	0.0	-0.0	0.6	1.1	1.1	-1.6	0.3	-0.7
ttW Syst 2	8.4	-0.1	-0.2	-0.3	0.2	0.5	1.0	-0.1	-0.3	0.4	10.4	-0.0	-0.7	7.8	-2.7	11.3	2.1	3.4	-1.5	1.1	2.3	2.1	-0.7
ttW Cross-Section	10.0	-0.0	-0.2	-0.0	-0.0	-0.7	-0.1	0.5	-11.9	17.3	-29.5	-11.6	-7.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
ttW mult 1b	-0.0	0.2	0.2	0.2	0.0	-0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
ttW mult 2b	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
ttZ Cross-Section	2.4	-0.3	0.8	-0.1	-0.1	-0.8	-0.3	0.0	0.9	-0.5	-1.3	-3.0	2.1	-22.0	0.1	-0.2	0.0	0.1	1.4	-1.1	-4.4	0.0	-0.2
ttar CO Cross-Section	3.4	-4.2	-7.8	-4.4	-0.1	1.3	1.8	-1.8	-0.4	0.1	0.0	-0.8	2.4	0.0	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	
ttar HFm Cross-Section	-0.1	0.0	0.4	0.3	0.7	1.8	-11.1	-0.8	0.0	0.3	-0.3	1.1	-1.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
ttar HFm Cross-Section	13.8	8.5	2.0	2.8	-1.5	0.0	0.2	-0.7	0.6	-0.3	-0.7	1.1	1.1	-10.8	-0.8	-1.8	-0.9	18.2	-0.0	-0.5	-0.4	1.3	
ttar_tight Cross-Section	1.8	0.7	0.6	0.8	-0.7	0.7	-1.7	-0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
ttar_gen Cross-Section	1.1	-0.1	-7.0	-0.4	1.2	0.2	-0.9	-0.7	-0.6	-0.1	0.0	0.9	2.1	2.2	-0.0	-0.1	0.0	-0.8	-0.0	-1.1	-2.7	0.0	
ttar_m Cross-Section	0.0	-0.1	-0.3	-0.3	0.0	0.0	-0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	
ttar_m Cross-Section	10.0	-0.3	0.5	-0.3	-0.1	-0.3	-0.3	0.3	-0.0	0.6	0.1	13.0	-0.6	1.5	-11.0	0.2	1.1	-0.2	-0.9	1.1	2.9	1.4	
$r_{\text{cross-section}}$																							
1-bagging M2c10 Light	0.00	1.4	2.4	1.7	0.3	-0.0	0.4	1.2	2.2	2.7	1.8	2.7	5.4	10.0	-0.0	0.5	2.4	3.4	-0.1	1.8	1.1	0.2	10.8
JCS EffectiveNP Modeling	1.4	0.0	-6.0	-6.3	-1.1	-1.3	-0.6	3.9	-1.4	-0.7	1.9	-4.2	-2.1	-10.7	0.3	1.8	-3.3	-4.2	4.8	5.5	-0.2	-0.9	-0.3
JCS Flavor Composition bag	2.4	-6.0	0.0	-7.3	-1.4	-0.9	-0.0	3.8	-0.0	-6.6	7.1	-12.6	-3.2	-8.2	0.7	-0.8	3.4	2.3	-4.6	-7.0	-0.3	0.5	0.5
JCS Flavor RhoTopology	1.7	0.0	-7.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
HFm ShapeSyst SR	0.3	-1.1	-1.4	-1.0	-0.2	0.2	0.6	6.8	0.2	0.0	0.3	-0.4	0.2	0.5	0.0	0.4	-0.1	-0.1	3.7	-1.4	-0.7	1.0	0.0
HFm ShapeSyst SR	-0.0	-1.0	-0.9	-0.4	0.2	0.0	0.6	-0.4	-0.1	-0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Sys GenID	0.4	-0.4	-0.0	-0.3	0.6	-0.4	0.0	0.4	-1.6	0.7	-0.4	1.6	1.0	-6.1	0.0	1.6	-1.3	-0.8	-11.1	4.2	-4.3	-0.4	-0.2
VV Cross-Section	1.2	3.9	3.8	3.1	8.8	-2.4	-0.4	0.0	0.0	1.3	1.7	-0.9	-0.1	0.5	0.0	0.0	0.0	0.4	16.8	-0.7	-1.1	-0.7	0.1
Luminosity	2.2	-1.4	0.0	-1.6	0.2	0.5	1.6	-1.8	0.4	0.4	-1.7	-0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
tt Cross-Section	2.7	-0.3	0.6	-0.0	-0.0	-1.0	-0.7	1.3	-0.6	0.0	0.2	-0.5	0.4	-17.5	0.1	1.8	-4.8	-0.9	0.3	-0.2	-0.7	-0.3	
ttW modeling (generation)	1.8	1.0	1.0	1.0	0.0	-0.4	0.0	1.7	0.0	-0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
ttW Syst 1	2.7	6.2	12.8	-6.1	0.4	1.8	1.6	-0.9	-1.7	-6.5	21.5	-0.0	-0.7	-11.6	0.8	0.0	-0.0	0.6	1.1	1.1	-1.6	0.3	-0.7
ttW Syst 2	8.4	-0.1	-0.2	-0.3	0.2	0.5	1.0	-0.1	-0.3	0.4	10.4	-0.0	-0.7	7.8	-2.7	11.3	2.1	3.4	-1.5	1.1	2.3	2.1	-0.7
ttW Cross-Section	10.0	-0.0	-0.2	-0.0	-0.0	-0.7	-0.1	0.5	-11.9	17.3	-29.5	-11.6	-7.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
ttW mult 1b	-0.0	0.2	0.2	0.2	0.0	-0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
ttW mult 2b	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
ttZ Cross-Section	2.4	-0.3	0.8	-0.1	-0.1	-0.8	-0.3	0.0	0.9	-0.5	-1.3	-3.0	2.1	-22.0	0.1	-0.2	0.0	0.1	1.4	-1.1	-4.4	0.0	-0.2
ttar CO Cross-Section	3.4	-4.2	-7.8	-4.4	-0.1	1.3	1.8	-1.8	-0.4	0.1	0.0	-0.8	2.4	0.0	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	
ttar HFm Cross-Section	-0.1	0.0	0.4	0.3	0.7	1.8	-11.1	-0.8	0.0	0.3	-0.3	1.1	-1.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
ttar HFm Cross-Section	13.8	8.5	2.0	2.8	-1.5	0.0	0.2	-0.7	0.6	-0.3	-0.7	1.1	1.1	-10.8	-0.8	-1.8	-0.9	18.2	-0.0	-0.5	-0.4	1.3	
ttar_tight Cross-Section	1.8	0.7	0.6	0.8	-0.7	0.7	-1.7	-0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
ttar_gen Cross-Section	1.1	-0.1	-7.0	-0.4	1.2	0.2	-0.9	-0.7	-0.6	-0.1	0.0	0.9	2.1	2.2	-0.0	-0.1	0.0	-0.8	-0.0	-1.1	-2.7	0.0	
ttar_m Cross-Section	0.0	-0.1	-0.3	-0.3	0.0	0.0	-0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	
ttar_m Cross-Section	10.0	-0.3	0.5	-0.3	-0.1	-0.3	-0.3	0.3	-0.0	0.6	0.1	13.0	-0.6	1.5	-11.0	0.2	1.1	-0.2	-0.9	1.1	2.9	1.4	
$r_{\text{cross-section}}$																							

Realistic Asimov HT Fit - mH700 - CutAndCount,50% tttt\_Xsec, Fix  
all NFs, Fix NF\_tttt=1

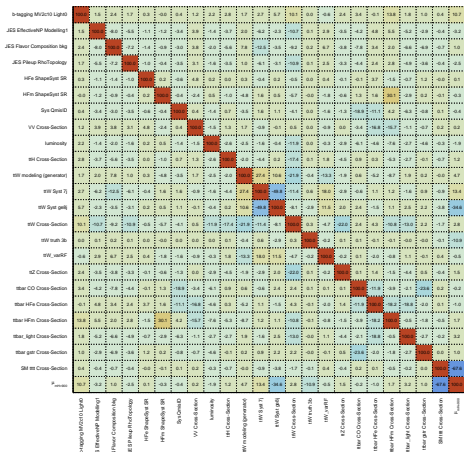
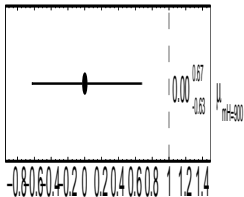


# Realistic Asimov HT Fit - mH800 - CutAndCount,50% tttt\_Xsec, Fix all NFs, Fix NF\_tttt=1

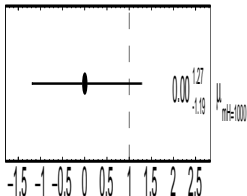


1-looping M2c10 Light	0.00	1.6	2.4	1.7	0.3	-0.0	0.4	1.2	3.2	2.8	1.8	2.7	5.8	10.1	0.0	0.8	2.4	3.6	-0.1	1.8	1.1	0.4	10.7
JCS EffectiveNP Modeling	1.5	0.0	4.0	-6.3	-1.1	-1.3	-0.6	3.9	-1.4	-0.7	1.9	-4.2	-2.3	-10.7	0.1	1.8	-3.3	-4.2	4.8	5.5	-0.2	-0.9	-0.3
JCS Flavor Composition tag	2.4	-4.0	0.0	-7.3	-1.4	-0.9	-0.0	3.8	-0.0	-6.6	7.3	-12.5	-0.4	-8.2	0.2	0.7	-0.8	3.8	3.4	2.0	-4.6	-0.6	0.5
JCS Flavor RhoTopology	1.7	6.3	7.3	0.0	5.5	3.1	1.7	-0.8	0.5	-6.1	-0.7	10.5	0.1	1.5	0.0	0.0	-0.3	-0.3	0.0	0.0	0.0	0.0	0.0
HFm ShapeSyst SR	0.3	-1.1	-1.4	-1.0	-0.2	0.2	0.6	6.8	0.3	0.0	0.4	0.2	0.5	0.0	0.4	-0.1	-0.1	3.7	-1.4	-0.7	1.3	0.0	0.1
HFm ShapeSyst SR	-0.0	-1.0	-0.9	-0.4	0.2	0.0	-0.4	-0.4	-0.1	0.0	-0.8	1.6	0.3	0.0	-0.8	-0.4	-1.6	-1.6	-2.8	0.2	-0.1	-0.3	
Sys GenID	0.4	-0.4	-0.0	-0.3	0.6	-0.4	0.0	0.4	-1.8	0.7	-0.8	1.6	1.1	-6.1	0.0	1.6	-1.3	-16.9	-11.1	4.2	-4.3	-0.4	-0.3
VV Cross-Section	1.2	3.3	3.8	3.1	8.8	-2.4	-0.4	0.0	0.0	1.3	1.7	-0.9	-0.1	0.5	0.0	0.0	0.0	0.4	16.8	-0.7	-1.1	-0.7	0.2
Luminosity	2.3	-1.4	0.0	-1.6	0.2	0.5	1.6	-1.8	0.4	0.4	-1.6	-0.6	-11.5	0.0	0.5	0.8	-0.7	-4.6	-1.6	-0.7	-4.6	-0.2	-1.6
tt Cross-Section	2.8	-0.3	6.6	-0.0	-1.0	-1.0	-0.7	1.3	-0.6	0.0	-0.2	-4.4	0.3	-17.4	0.1	1.8	-4.8	-0.9	0.3	-0.2	-0.7	-0.6	1.1
ttW modeling (generation)	1.8	1.1	1.1	1.0	1.0	-0.4	0.0	1.7	0.5	-0.0	0.0	0.0	27.5	1.0	0.0	-0.4	-0.4	0.0	-0.3	0.0	0.0	0.0	0.0
ttW Syst T	2.7	6.2	12.5	-6.1	-0.4	1.8	1.6	-0.9	-1.6	-4.4	27.5	0.0	-0.4	-11.5	0.8	0.0	-0.9	0.6	1.1	1.1	-1.6	0.8	13.3
ttW Syst g23	8.8	-2.4	-0.4	-0.1	0.2	0.5	1.1	-0.1	-0.4	0.3	10.8	0.0	-0.8	-0.8	-2.8	-1.5	2.0	0.4	-1.8	2.8	2.3	-0.1	-0.2
ttW Cross-Section	10.1	-10.2	-6.2	-10.9	-0.6	-0.7	-0.1	0.5	-11.9	-17.4	-27.5	-11.5	-8.3	0.0	0.4	4.7	-22.0	-1.6	4.3	-10.9	-13.0	3.2	-1.5
ttW mult 3s	0.0	0.1	0.2	0.1	0.0	-0.0	0.0	0.0	0.0	0.1	-0.6	0.8	-2.8	0.4	1.0	0.2	0.1	-0.1	-0.1	-0.0	-0.0	-1.0	
ttW_sark	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
ttZ Cross-Section	2.4	-0.3	3.8	-0.3	-0.1	-0.8	-0.3	1.8	-0.3	10.8	11.9	-4.7	-0.2	-1.0	-0.2	-0.2	0.0	-2.0	-0.8	1.1	-0.1	-0.3	0.4
tttau CO Cross-Section	3.4	-4.2	-7.8	-4.4	-0.1	1.3	1.8	-1.8	-0.4	-4.1	2.1	8.9	-0.8	2.4	0.1	0.1	0.1	0.1	-11.8	-9.1	-2.0	-0.1	-0.3
tttau HFm Cross-Section	-0.1	0.0	0.4	2.8	0.7	1.8	-11.1	-16.8	-0.6	0.3	-6.1	-1.1	-1.3	4.3	-0.1	0.0	1.4	-11.9	-8.0	-16.8	-0.2	0.1	
tttau HFm Cross-Section	13.8	6.2	2.0	2.8	-1.5	20.1	4.2	-15.7	-7.6	-0.3	-6.7	1.2	1.1	-10.8	-0.1	-0.8	-1.8	-8.9	-18.2	-0.5	-0.5	-1.8	
tttau_light Cross-Section	1.8	0.7	4.6	0.8	-0.7	0.7	-0.8	0.5	-1.7	0.7	1.4	-1.6	2.4	0.0	-0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	
tttau_g2 Cross-Section	1.1	-0.3	-0.9	-0.4	1.2	0.2	0.8	-0.7	-0.6	-0.1	0.0	0.9	2.2	-0.0	-0.1	0.8	-0.9	-0.0	-1.1	-2.7	0.0	1.0	
tttau_g2 Cross-Section	0.0	-0.1	-0.8	-0.4	0.0	-0.1	0.1	0.3	0.0	-0.1	0.0	-1.1	-1.3	-0.1	-0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	
tttau_g2 Cross-Section	10.7	-0.2	0.8	-0.4	0.1	-0.3	-0.3	0.3	-1.9	1.1	4.3	13.3	-0.4	2.6	-10.8	-0.4	1.4	-0.2	-1.0	1.7	3.0	1.4	
$\mu_{\text{statistical}}$	1.1	0.2	0.8	0.5	0.1	-0.3	-0.3	0.3	-1.9	1.1	4.3	13.3	-0.4	2.6	-10.8	-0.4	1.4	-0.2	-1.0	1.7	3.0	1.4	

# Realistic Asimov HT Fit - mH900 - CutAndCount,50% tttt\_Xsec, Fix all NFs, Fix NF\_tttt=1



# Realistic Asimov HT Fit - mH1000 - CutAndCount, 50% tttt\_Xsec, Fix all NFs, Fix NF\_tttt=1

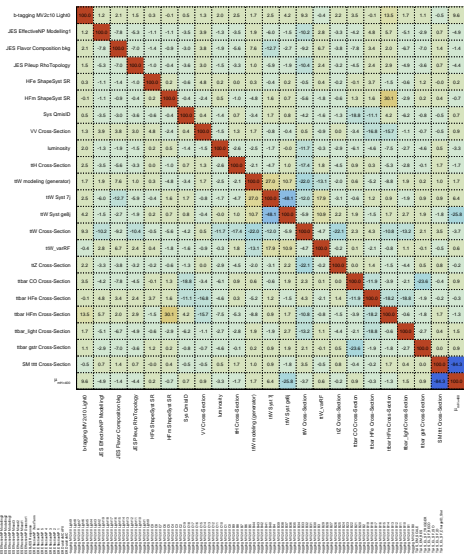
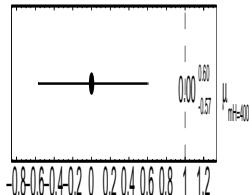


1-looping M1000 Light	0.00	1.0	2.5	1.7	0.3	-0.0	0.4	1.2	3.2	2.8	1.7	2.7	5.6	10.1	0.0	0.8	2.4	0.6	-0.1	1.8	1.1	0.4	10.7
JCS EffectiveNP Modeling	1.5	0.0	4.0	-0.3	-1.1	-1.3	-0.6	3.9	-1.6	-0.7	3.0	-4.2	-2.3	-10.7	0.1	1.8	-3.3	-4.2	4.8	5.5	-0.2	-0.9	-0.3
JCS Flavor Composition tag	2.5	-4.0	-0.0	-7.2	-1.4	-0.9	-0.0	3.8	-0.0	-6.6	7.3	-12.5	-0.3	-8.2	0.7	-0.8	3.8	2.3	-2.0	-4.6	-0.8	1.1	
JCS Flavor RhoTopology	1.7	0.0	4.0	-0.3	-1.1	-1.3	-0.6	3.9	-1.6	-0.7	3.0	-4.2	-2.3	-10.7	0.1	1.8	-3.3	-4.2	4.8	5.5	-0.2	-0.9	-0.3
HFm ShapeSyst SR	0.3	-1.1	-1.4	-1.0	-0.6	0.2	0.6	6.8	0.3	0.0	0.3	0.4	0.2	0.5	0.0	0.4	-0.1	-1.7	3.7	-1.1	-0.7	1.3	0.0
HFm ShapeSyst SR	-0.0	-1.7	-0.9	-0.4	0.3	0.0	0.6	-0.4	-0.1	-0.5	-0.8	-1.6	0.3	0.7	-0.0	-0.8	-0.4	-1.6	1.8	2.0	0.2	-0.1	-0.3
Sys GenID	0.6	-0.4	-0.0	-0.3	0.6	-0.4	0.0	0.6	-1.6	0.7	-0.8	1.6	1.1	-6.1	0.0	1.6	-1.3	-16.9	-11.1	4.2	-4.3	-0.8	0.2
VV Cross-Section	1.2	3.3	3.8	3.1	8.8	-2.4	-0.4	10.0	0.6	1.3	1.7	-0.9	-0.1	0.5	0.0	0.0	0.0	-6.4	-16.8	-0.7	-1.1	-0.7	0.2
Luminosity	2.3	-1.6	-0.2	-1.6	0.2	0.5	1.6	-1.8	0.4	0.4	-1.6	-0.6	-11.6	0.0	0.0	0.0	0.0	-6.4	-16.8	-0.7	-1.1	-0.7	0.2
tt Cross-Section	2.8	-0.3	6.6	-0.0	-0.0	-1.0	-0.7	1.3	-0.6	10.0	-0.2	-4.4	0.3	-17.4	0.1	1.8	-4.8	-0.9	0.3	-0.2	-0.7	-0.1	-0.7
ttW modeling (generation)	1.7	0.0	4.0	-0.3	-1.1	-1.3	-0.6	3.9	-1.6	-0.7	3.0	-4.2	-2.3	-10.7	0.1	1.8	-3.3	-4.2	4.8	5.5	-0.2	-0.9	-0.3
ttW Syst 1	2.7	6.2	12.5	-6.1	0.4	1.8	1.6	-0.9	-1.6	-4.4	21.5	-10.9	-16.9	-11.4	0.8	0.0	0.0	0.0	1.1	1.1	-1.6	0.3	0.9
ttW Syst 2	8.6	-4.3	-5.8	-0.2	0.5	1.1	-0.1	-0.4	0.2	10.8	-4.8	-6.1	-2.8	-11.8	1.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ttW Cross-Section	10.1	-10.2	-4.2	-10.9	-0.6	-0.7	-0.1	0.5	-11.9	-17.4	-21.9	-11.6	-8.3	-0.7	0.3	0.7	-22.0	-1.6	4.3	-10.9	-13.0	2.2	-1.7
ttW mult 1b	0.0	0.1	0.2	0.1	0.0	-0.0	0.0	0.0	0.0	0.1	-0.1	0.6	0.8	-0.3	0.0	0.2	0.1	-0.1	-0.1	-0.0	-0.0	-0.2	
ttW mult 2b	0.0	0.1	0.2	0.1	0.0	-0.0	0.0	0.0	0.0	0.1	-0.1	0.6	0.8	-0.3	0.0	0.2	0.1	-0.1	-0.1	-0.0	-0.0	-0.2	
ttZ Cross-Section	2.4	-0.3	6.6	-0.0	-0.0	-1.0	-0.7	1.3	-0.6	10.0	-0.2	-4.4	0.3	-17.4	0.1	1.8	-4.8	-0.9	0.3	-0.2	-0.7	-0.1	-0.7
ttar CO Cross-Section	3.4	-4.2	-7.8	-4.4	-0.1	1.3	1.8	-0.4	-1.2	8.9	-1.6	-0.8	2.4	-4.1	0.1	0.1	0.1	-11.8	-11.8	-11.8	-11.8	-11.8	-11.8
ttar HFm Cross-Section	-0.1	0.6	3.4	2.8	0.7	1.8	-11.1	-16.8	-1.6	0.3	-6.2	1.1	-1.3	4.3	-0.1	0.0	1.4	-11.9	-16.8	-16.8	-16.8	-16.8	-16.8
ttar HFm Cross-Section	13.8	6.3	2.0	2.8	-1.5	20.1	4.2	-15.7	-7.6	-0.3	4.7	1.2	1.0	-10.8	-0.1	-0.8	-1.8	-8.9	-18.2	-1.8	-0.5	-1.8	0.8
ttar light Cross-Section	1.8	-0.7	6.6	-0.0	-0.0	-1.0	-0.7	1.3	-0.6	10.0	-0.2	-4.4	0.3	-17.4	0.1	1.8	-4.8	-0.9	0.3	-0.2	-0.7	-0.1	-0.7
ttar gen Cross-Section	1.1	-0.3	6.6	-0.0	-0.0	-1.0	-0.7	1.3	-0.6	10.0	-0.2	-4.4	0.3	-17.4	0.1	1.8	-4.8	-0.9	0.3	-0.2	-0.7	-0.1	-0.7
SM tt Cross-Section	0.4	-0.3	-0.8	-0.4	-0.0	0.1	0.2	0.2	-0.3	-0.7	0.0	-0.8	-1.1	-1.7	-0.2	0.4	-0.8	0.1	0.1	-0.1	-0.3	-0.0	-0.7
$\mu\mu_{1000}$	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	

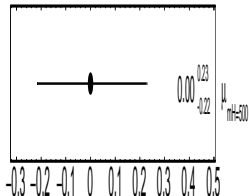
1-looping M1000 Light	0.00	1.0	2.5	1.7	0.3	-0.0	0.4	1.2	3.2	2.8	1.7	2.7	5.6	10.1	0.0	0.8	2.4	0.6	-0.1	1.8	1.1	0.4	10.7
JCS EffectiveNP Modeling	1.5	0.0	4.0	-0.3	-1.1	-1.3	-0.6	3.9	-1.6	-0.7	3.0	-4.2	-2.3	-10.7	0.1	1.8	-3.3	-4.2	4.8	5.5	-0.2	-0.9	-0.3
JCS Flavor Composition tag	2.5	-4.0	-0.0	-7.2	-1.4	-0.9	-0.0	3.8	-0.0	-6.6	7.3	-12.5	-0.3	-8.2	0.7	-0.8	3.8	2.3	-2.0	-4.6	-0.8	1.1	
JCS Flavor RhoTopology	1.7	0.0	4.0	-0.3	-1.1	-1.3	-0.6	3.9	-1.6	-0.7	3.0	-4.2	-2.3	-10.7	0.1	1.8	-3.3	-4.2	4.8	5.5	-0.2	-0.9	-0.3
HFm ShapeSyst SR	0.3	-1.1	-1.4	-1.0	-0.6	0.2	0.6	6.8	0.3	0.0	0.3	0.4	0.2	0.5	0.0	0.4	-0.1	-1.7	3.7	-1.1	-0.7	1.3	0.0
HFm ShapeSyst SR	-0.0	-1.7	-0.9	-0.4	0.3	0.0	0.6	-0.4	-0.1	-0.5	-0.8	-1.6	0.3	0.7	-0.0	-0.8	-0.4	-1.6	1.8	2.0	0.2	-0.1	-0.3
Sys GenID	0.6	-0.4	-0.0	-0.3	0.6	-0.4	0.0	0.6	-1.6	0.7	-0.8	1.6	1.1	-6.1	0.0	1.6	-1.3	-16.9	-11.1	4.2	-4.3	-0.8	0.2
VV Cross-Section	1.2	3.3	3.8	3.1	8.8	-2.4	-0.4	10.0	0.6	1.3	1.7	-0.9	-0.1	0.5	0.0	0.0	0.0	-6.4	-16.8	-0.7	-1.1	-0.7	0.2
Luminosity	2.3	-1.6	-0.2	-1.6	0.2	0.5	1.6	-1.8	0.4	0.4	-1.6	-0.6	-11.6	0.0	0.0	0.0	0.0	-6.4	-16.8	-0.7	-1.1	-0.7	0.2
tt Cross-Section	2.8	-0.3	6.6	-0.0	-0.0	-1.0	-0.7	1.3	-0.6	10.0	-0.2	-4.4	0.3	-17.4	0.1	1.8	-4.8	-0.9	0.3	-0.2	-0.7	-0.1	-0.7
ttW modeling (generation)	1.7	0.0	4.0	-0.3	-1.1	-1.3	-0.6	3.9	-1.6	-0.7	3.0	-4.2	-2.3	-10.7	0.1	1.8	-3.3	-4.2	4.8	5.5	-0.2	-0.9	-0.3
ttW Syst 1	2.7	6.2	12.5	-6.1	0.4	1.8	1.6	-0.9	-1.6	-4.4	21.5	-10.9	-16.9	-11.4	0.8	0.0	0.0	0.0	1.1	1.1	-1.6	0.3	0.9
ttW Syst 2	8.6	-4.3	-5.8	-0.2	0.5	1.1	-0.1	-0.4	0.2	10.8	-4.8	-6.1	-2.8	-11.8	1.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ttW Cross-Section	10.1	-10.2	-4.2	-10.9	-0.6	-0.7	-0.1	0.5	-11.9	-17.4	-21.9	-11.6	-8.3	-0.7	0.3	0.7	-22.0	-1.6	4.3	-10.9	-13.0	2.2	-1.7
ttW mult 1b	0.0	0.1	0.2	0.1	0.0	-0.0	0.0	0.0	0.0	0.1	-0.1	0.6	0.8	-0.3	0.0	0.2	0.1	-0.1	-0.1	-0.0	-0.0	-0.2	
ttW mult 2b	0.0	0.1	0.2	0.1	0.0	-0.0	0.0	0.0	0.0	0.1	-0.1	0.6	0.8	-0.3	0.0	0.2	0.1	-0.1	-0.1	-0.0	-0.0	-0.2	
ttZ Cross-Section	2.4	-0.3	6.6	-0.0	-0.0	-1.0	-0.7	1.3	-0.6	10.0	-0.2	-4.4	0.3	-17.4	0.1	1.8	-4.8	-0.9	0.3	-0.2	-0.7	-0.1	-0.7
ttar CO Cross-Section	3.4	-4.2	-7.8	-4.4	-0.1	1.3	1.8	-0.4	-1.2	8.9	-1.6	-0.8	2.4	-4.1	0.1	0.1	0.1	-11.8	-11.8	-11.8	-11.8	-11.8	-11.8
ttar HFm Cross-Section	-0.1	0.6	3.4	2.8	0.7	1.8	-11.1	-16.8	-1.6	0.3	-6.2	1.1	-1.3	4.3	-0.1	0.0	1.4	-11.9	-16.8	-16.8	-16.8	-16.8	-16.8
ttar HFm Cross-Section	13.8	6.3	2.0	2.8	-1.5	20.1	4.2	-15.7	-7.6	-0.3	4.7	1.2	1.0	-10.8	-0.1	-0.8	-1.8	-8.9	-18.2	-1.8	-0.5	-1.8	0.8
ttar light Cross-Section	1.8	-0.7	6.6	-0.0	-0.0	-1.0	-0.7	1.3	-0.6	10.0	-0.2	-4.4	0.3	-17.4	0.1	1.8	-4.8	-0.9	0.3	-0.2	-0.7	-0.1	-0.7
ttar gen Cross-Section	1.1	-0.3	6.6	-0.0	-0.0	-1.0	-0.7	1.3	-0.6	10.0	-0.2	-4.4	0.3	-17.4	0.1	1.8	-4.8	-0.9	0.3	-0.2	-0.7	-0.1	-0.7
SM tt Cross-Section	0.4	-0.3	-0.8	-0.4	-0.0	0.1	0.2	0.2	-0.3	-0.7	0.0	-0.8	-1.1	-1.7	-0.2	0.4	-0.8	0.1	0.1	-0.1	-0.3	-0.0	-0.7
$\mu\mu_{1000}$	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	



# Realistic Asimov HT Fit - mH400 - CutAndCount,50% tttt\_Xsec, Fix all NFs, Fix NF\_tttt=2

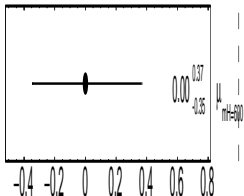


# Realistic Asimov HT Fit - mH500 - CutAndCount,50% tttt\_Xsec, Fix all NFs, Fix NF\_tttt=2



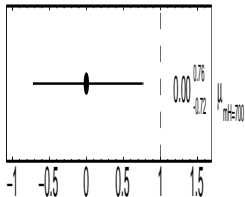
b-tagging MV2c10 Light	0.00	1.3	2.3	1.6	0.3	0.0	0.4	1.2	2.1	2.6	1.9	2.6	4.5	6.7	-0.5	2.3	3.4	-0.1	13.7	1.7	1.1	0.1	8.9
JES EffectiveNP Modeling1	1.3	-0.3	-7.9	6.3	-1.1	1.2	-3.4	3.9	-1.3	8.6	1.9	6.0	-1.8	-10.4	2.8	8.4	-4.3	-4.8	5.8	6.1	-2.9	0.1	-4.1
JES Flavor Composition bag	2.3	-7.9	106.2	-7.1	-1.4	-0.9	-3.0	3.9	-2.0	-6.6	7.6	-12.6	-3.1	-63.3	6.7	8.8	-7.8	8.4	2.0	-4.6	-7.0	0.2	0.1
JES Pileup Rho Topology	1.6	-6.3	-7.1	6.3	-1.0	0.4	-3.4	3.0	-1.8	8.4	1.9	-6.9	-2.3	-10.6	2.4	8.2	-4.3	-2.6	2.8	-4.9	-8.6	10.0	-8.6
HF's ShapeSyst SR	0.3	-1.1	-1.4	-1.0	0.0	0.2	-0.4	0.8	0.3	0.0	0.3	-0.4	0.3	-0.5	0.4	-0.2	-0.1	3.7	-1.1	-0.6	1.3	0.1	0.0
HF'm ShapeSyst SR	0.3	-1.1	-1.4	-1.0	0.0	0.2	-0.4	0.8	0.3	0.0	0.3	-0.4	0.3	-0.5	0.4	-0.2	-0.1	3.7	-1.1	-0.6	1.3	0.1	0.0
Sys OniaID	0.4	-3.4	-3.0	3.6	-0.4	0.4	-0.4	-0.4	1.4	0.7	-3.4	1.6	0.9	-4.2	-1.8	-13.8	-11.1	4.3	-4.2	-0.8	-0.0	0.3	
VV Cross-Section	1.9	3.9	3.9	3.0	1.8	0.4	0.4	0.4	1.2	1.3	1.7	0.9	-0.5	0.5	0.0	3.4	-16.8	-18.7	-1.1	-0.1	-0.0	0.0	
luminosity	2.1	-1.3	-0.0	1.6	0.2	0.5	-1.4	1.5	-1.0	2.6	-0.5	1.7	-0.1	-11.8	-0.1	0.9	-6.1	-4.6	-7.0	-2.7	-4.6	0.1	-0.8
WH Cross-Section	1.8	1.9	7.8	1.0	0.3	-4.8	-0.4	1.7	-0.0	0.1	-1.0	-0.7	27.1	10.9	-13.1	1.9	0.8	-6.2	-6.7	1.9	0.2	0.0	2.8
WW modeling (generator)	1.8	1.9	7.8	1.0	0.3	-4.8	-0.4	1.7	-0.0	0.1	-1.0	-0.7	27.1	10.9	-13.1	1.9	0.8	-6.2	-6.7	1.9	0.2	0.0	2.8
WW Syst T)	0.6	-4.0	-15.6	4.9	-0.4	1.6	1.8	0.8	-1.7	4.6	27.8	-16.5	-11.8	17.6	-4.6	-0.4	-0.4	1.5	1.5	1.8	0.0	0.0	
WW Syst goli)	4.3	-1.8	-0.1	0.2	0.3	0.5	0.9	0.2	-0.2	0.5	10.0	-48.5	-10.9	6.9	11.1	2.1	2.1	1.5	1.3	2.7	1.9	0.4	-23.8
WW Cross-Section	9.7	-10.4	-4.3	-10.6	-0.5	-5.7	-4.1	0.5	-11.8	-27.5	21.9	-11.8	-4.6	-0.7	-22.1	2.4	4.3	-15.9	-13.2	2.3	0.4	0.0	0.0
WW_vastF	-0.9	2.8	6.3	2.4	0.4	1.8	-1.4	0.9	-0.3	1.8	-13.1	17.8	11.1	-4.7	-10.1	-0.2	0.1	2.1	-0.8	1.1	-0.1	0.1	-0.1
tt Cross-Section	2.3	-3.4	-3.4	3.2	-0.2	-0.4	-1.1	1.0	-0.9	-4.6	-1.8	3.0	2.1	-0.7	-10.1	-0.1	-0.1	0.0	1.4	-1.4	-4.4	0.0	0.4
ttbar CO Cross-Section	5.4	-4.2	-7.8	-4.5	-0.1	1.3	-18.8	3.4	-6.1	19.6	0.6	0.6	2.1	2.6	0.1	0.0	-10.1	-11.9	-9.9	-0.1	-23.8	0.2	0.3
ttbar HF's Cross-Section	-0.1	-8.8	3.4	2.4	3.7	1.6	-11.8	-16.8	-4.6	-0.3	-0.2	1.2	-1.8	4.3	-2.1	1.4	-11.9	-16.8	-16.8	-1.8	-0.2	-0.3	
ttbar HF'm Cross-Section	18.7	1.8	2.0	2.8	-1.0	1.3	-18.7	3.4	-6.1	19.6	0.6	0.6	2.1	2.6	0.1	0.0	-10.1	-11.9	-9.9	-0.1	-23.8	0.2	0.3
ttbar_light Cross-Section	1.7	-6.1	-4.6	-4.9	-0.8	-0.9	-2.3	-1.1	-2.7	0.1	1.9	1.8	2.7	-10.2	1.1	4.4	-2.1	-18.8	-0.1	-0.1	0.3	1.6	
ttbar_gat Cross-Section	1.1	0.9	-1.8	0.6	1.1	0.2	1.1	-0.7	0.7	-1.1	0.2	1.1	1.2	1.1	0.5	0.0	0.0	-1.1	-1.1	-1.1	-0.1	0.1	
SM tt Cross-Section	0.1	0.1	0.2	0.0	0.1	0.1	-0.0	0.0	0.1	0.2	-0.0	0.6	-3.4	0.4	0.1	0.3	0.2	-0.2	-0.0	0.3	-0.0	-0.0	-0.0
SM tt OniaID	0.8	-4.1	0.1	0.6	0.5	0.2	0.2	0.3	-0.8	10.0	2.8	8.7	23.8	0.0	0.1	0.6	0.3	0.3	0.8	1.6	1.5	0.1	0.1

# Realistic Asimov HT Fit - mH600 - CutAndCount,50% tttt\_Xsec, Fix all NFs, Fix NF\_tttt=2



b-tagging M210 Light	1.6	1.4	2.4	1.6	0.3	-0.0	0.4	1.2	2.2	2.7	1.9	2.6	4.8	8.9	-0.5	2.4	3.4	-0.1	13.8	1.8	1.1	0.4	8.4
JES EffectiveNP Modeling1	1.4	-0.3	-7.9	6.4	-1.1	-1.2	-3.4	3.9	-1.4	3.7	1.9	-6.0	-2.9	-18.4	2.8	8.4	-4.3	-4.8	5.8	-5.1	-2.9	-0.4	-3.8
JES Flavor Composition bkg	2.4	7.9	106.2	-7.1	-1.4	-0.9	-3.0	3.9	-2.0	-6.6	7.7	-22.5	-3.3	-62	6.7	8.8	-7.8	8.4	2.0	-4.6	-7.0	-0.6	1.1
JES Pileup RhoTopology	1.8	-6.4	-7.1	-0.3	-1.0	-0.4	-3.0	3.0	-1.8	0.4	1.9	-6.9	-2.4	-10.6	2.4	3.2	-4.3	-2.6	2.8	-4.9	-8.6	-0.4	-3.1
HF's ShapeSyst SR	0.3	-1.1	-1.4	-1.0	106.2	0.2	-0.4	4.8	0.3	0.0	0.3	-0.4	0.3	-0.5	0.4	-0.1	-0.1	3.7	-1.1	-0.6	1.3	0.0	0.1
HF'm ShapeSyst SR	-0.4	0.2	1.2	-0.8	0.4	-0.2	-0.4	-0.4	0.4	0.0	0.4	0.0	1.8	0.8	0.7	-1.4	-0.5	1.9	1.1	0.2	0.2	-0.1	
Sys OniaID	0.4	-3.4	-0.3	-3.5	-0.4	-0.4	-0.4	-0.4	-1.4	0.7	-3.4	1.6	1.0	-4.2	-1.4	-1.3	-18.8	-11.1	4.3	-4.3	-0.8	0.1	
VV Cross-Section	1.9	3.9	3.9	3.0	1.8	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	
Luminosity	2.3	1.4	-0.3	-1.6	0.2	0.5	-1.4	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	
WH Cross-Section	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	
WH modeling (generator)	1.8	1.9	7.7	1.0	0.3	-4.8	-0.4	-1.7	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	
WH Syst T)	4.8	-4.0	-15.2	-4.9	-0.4	-1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	
WH Syst gsf)	4.8	-4.0	-3.3	-0.4	0.2	0.5	1.0	-0.1	-0.4	0.3	10.8	-8.9	-10.8	-7.5	11.2	1.9	2.3	1.5	1.1	2.7	2.0	-0.1	
WH Cross-Section	4.9	-10.4	-4.2	-10.6	-0.3	-3.7	-4.3	0.5	-11.9	-17.5	21.8	-11.5	-7.8	-10.8	-4.7	-22.0	-2.4	4.3	-19.8	-13.1	2.7	1.7	
WH_vadP	-0.3	2.8	6.3	2.4	0.4	-1.8	-1.8	-0.9	-0.3	1.8	-13.1	17.8	11.3	-4.7	-10.3	0.2	0.1	2.1	-0.8	1.1	-0.1	0.4	
1Z Cross-Section	2.4	3.4	-3.4	-3.2	-0.1	-0.4	-1.1	3.0	-2.8	-4.6	-1.4	3.0	1.9	-1.0	-0.3	0.0	1.4	-1.4	-4.4	0.5	0.3	1.1	
Star CO Cross-Section	3.4	-4.2	-7.8	-4.5	-0.1	1.3	-18.8	3.4	-6.1	19.8	6.6	2.2	2.4	0.1	0.0	-10.3	-11.9	-3.9	-2.1	-0.8	0.3	0.1	
Star HF's Cross-Section	-0.1	-8.8	3.4	2.4	3.7	1.6	-11.1	-18.8	-4.8	0.3	-6.2	1.2	-1.4	4.3	-2.1	1.4	-11.9	-10.3	-18.8	-1.8	-0.0	-0.8	
Star HF'm Cross-Section	13.8	1.8	2.0	2.8	-1.0	1.2	4.2	18.7	-7.8	-4.3	-4.0	1.1	1.1	-10.3	-4.4	4.5	-3.0	-18.3	-4.0	-0.5	-1.8	-1.7	
Star Light Cross-Section	1.8	-1.1	-4.8	-4.9	-0.8	-2.9	-4.3	-1.1	-2.7	2.7	1.9	1.8	2.7	-13.1	1.1	4.4	-2.1	-18.8	-0.3	-0.3	-0.1	2.1	
Star gsf Cross-Section	1.1	0.3	-1.1	0.8	1.1	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	
SM int Cross-Section	0.4	0.4	-0.4	-0.4	0.0	0.2	0.1	0.2	-0.3	-0.7	-0.3	-1.4	-5.1	-1.7	0.4	0.3	0.3	-0.7	-0.1	-0.1	-0.3	-0.3	
$\mu_{\text{hadronic}}$	8.4	8.4	1.1	0.1	0.1	0.1	-0.1	-0.1	-0.1	-0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	

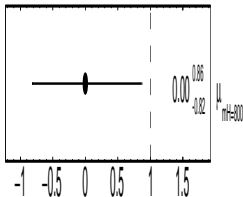
# Realistic Asimov HT Fit - mH700 - CutAndCount,50% tttt\_Xsec, Fix all NFs, Fix NF\_tttt=2



b-tagging M2c10 Light	1.6	2.4	1.6	0.3	-0.3	0.4	1.2	2.2	2.7	1.8	2.7	4.8	10.0	-0.5	2.4	3.4	-0.1	13.8	1.8	1.1	0.5	8.3	
JES EffectiveNP Modeling1	1.4	-0.3	-7.9	6.4	-1.1	-1.2	-3.4	3.9	-1.4	3.7	1.9	-6.0	-2.1	-10.5	2.8	8.4	-4.3	4.8	5.8	6.1	-2.9	-6.6	-3.9
JES Flavor Composition tag	2.4	7.9	10.0	-7.1	-1.4	-0.9	-3.0	3.9	-2.0	6.6	7.7	-12.4	-3.4	-6.2	6.7	8.8	-7.8	8.4	2.0	4.6	4.9	-1.0	1.5
JES Pileup RhoTopology	1.8	-6.4	-7.1	-6.4	-1.0	-0.4	-3.0	3.0	-1.4	3.4	1.0	-6.9	-2.4	-10.7	2.4	3.2	-4.3	2.4	2.8	-4.9	-8.6	-6.6	-2.9
HF's ShapeSyst SR	0.3	-1.1	-1.4	-1.0	10.0	0.2	-0.4	4.8	0.3	0.0	0.3	-0.4	0.3	-0.5	0.4	-0.1	-0.1	3.7	-1.1	-0.6	1.3	0.0	0.1
HF'm ShapeSyst SR	0.4	-0.4	-0.2	-0.4	0.2	10.0	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
Sys OniaID	0.4	3.4	-0.3	-3.5	-0.4	-0.4	10.0	0.4	-1.4	0.7	-3.4	1.6	1.0	-4.2	-1.4	-18.8	-11.1	4.3	-4.3	-0.4	0.2	-0.2	-0.2
VV Cross-Section	1.2	3.9	3.9	3.0	1.8	-0.4	-0.4	10.0	1.2	1.3	1.7	-0.9	-0.1	0.5	0.9	0.0	-3.4	-16.8	-18.7	-0.1	-0.7	0.3	-0.1
luminosity	2.3	1.4	-0.3	-1.6	0.2	0.5	-1.4	-1.5	10.0	2.7	-0.1	-1.7	-0.4	-11.9	-0.1	0.9	-4.1	-4.6	-7.6	2.7	-4.6	-0.4	-0.3
WH Cross-Section	2.7	3.7	3.6	3.4	0.6	0.7	1.8	-2.1	2.7	10.0	0.0	0.0	4.4	0.0	1.8	-4.6	0.9	0.3	-0.2	0.7	-0.1	1.4	1.4
WH modeling (generator)	1.8	1.9	7.7	1.0	0.3	-4.8	-0.4	1.7	-0.3	0.0	10.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
WH Syst T)	3.7	4.0	-15.4	6.9	-0.4	1.8	1.8	0.8	-1.2	4.4	27.8	10.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
WH Syst gail)	4.8	-2.1	-3.4	0.4	0.2	0.5	1.0	-0.1	-0.4	0.2	10.0	-18.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
WH Cross-Section	10.5	-10.5	-4.2	-10.7	-0.3	-5.7	-4.3	0.5	-11.9	-17.4	21.8	11.4	-17.7	0.0	-4.7	-22.0	-2.4	-15.9	-15.1	2.3	2.4	5.3	5.3
WH_vxvF	-0.9	2.8	6.7	2.4	0.4	1.8	-1.8	-0.9	-0.3	1.8	-13.2	-17.7	11.3	-4.7	-10.1	0.2	0.1	0.1	-0.8	1.1	-0.1	0.7	-0.9
tt Cross-Section	2.4	3.4	-3.4	-3.2	-0.1	-0.4	-1.1	3.0	-2.4	-4.5	-1.4	3.9	1.9	10.0	-0.1	0.0	0.0	1.4	-1.4	-4.4	0.5	-0.4	1.4
ttbar CO Cross-Section	5.4	-4.2	-7.8	-4.5	-0.1	1.3	-18.8	3.4	-6.1	0.9	0.6	-0.6	2.2	2.4	0.1	0.0	0.0	-11.9	-9.9	-0.1	-0.8	0.2	0.3
ttbar HF's Cross-Section	-0.1	-8.8	3.4	2.4	3.7	1.6	-11.1	-16.8	-4.8	0.3	-6.2	1.2	-1.4	4.3	-2.1	1.4	-11.9	-16.8	-18.8	-1.8	0.0	-0.5	-0.5
ttbar HF'm Cross-Section	18.8	1.8	2.0	2.8	-10.1	4.2	-18.7	-7.4	-6.3	-4.0	1.1	1.0	-10.8	-4.4	-4.5	-0.1	-16.8	-4.4	-0.5	-1.8	0.0	1.7	1.7
ttbar Light Cross-Section	1.8	-6.1	-4.4	-4.9	-0.4	-2.9	-4.3	-1.1	-2.7	2.7	1.9	1.8	2.7	13.1	1.1	4.4	-2.1	-18.8	-0.1	-0.5	-2.7	0.0	2.0
ttbar gen Cross-Section	1.1	0.9	0.4	0.6	1.2	0.2	-1.2	-0.7	0.7	-0.1	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
SM tt Cross-Section	0.5	0.6	-1.0	-0.6	0.0	0.1	0.2	0.3	-0.4	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1
$\mu_{\text{renorm}}$	8.3	8.3	1.5	1.5	0.1	0.1	-0.1	-0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1

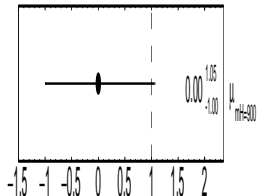
b-tagging M2c10 Light	JES EffectiveNP Modeling1	JES Flavor Composition tag	JES Pileup RhoTopology	HF's ShapeSyst SR	HF'm ShapeSyst SR	Sys OniaID	VV Cross-Section	luminosity	WH Cross-Section	WH modeling (generator)	WH Syst T)	WH Syst gail)	WH Cross-Section	WH_vxvF	tt Cross-Section	ttbar CO Cross-Section	ttbar HF's Cross-Section	ttbar HF'm Cross-Section	ttbar Light Cross-Section	ttbar gen Cross-Section	SM tt Cross-Section	$\mu_{\text{renorm}}$	
b-tagging M2c10 Light	1.6	2.4	1.6	0.3	-0.3	0.4	1.2	2.2	2.7	1.8	2.7	4.8	10.0	-0.5	2.4	3.4	-0.1	13.8	1.8	1.1	0.5	8.3	
JES EffectiveNP Modeling1	1.4	-0.3	-7.9	6.4	-1.1	-1.2	-3.4	3.9	-1.4	3.7	1.9	-6.0	-2.1	-10.5	2.8	8.4	-4.3	4.8	5.8	6.1	-2.9	-6.6	-3.9
JES Flavor Composition tag	2.4	7.9	10.0	-7.1	-1.4	-0.9	-3.0	3.9	-2.0	6.6	7.7	-12.4	-3.4	-6.2	6.7	8.8	-7.8	8.4	2.0	4.6	4.9	-1.0	1.5
JES Pileup RhoTopology	1.8	-6.4	-7.1	-6.4	-1.0	-0.4	-3.0	3.0	-1.4	3.4	1.0	-6.9	-2.4	-10.7	2.4	3.2	-4.3	2.4	2.8	-4.9	-8.6	-6.6	-2.9
HF's ShapeSyst SR	0.3	-1.1	-1.4	-1.0	10.0	0.2	-0.4	4.8	0.3	0.0	0.3	-0.4	0.3	-0.5	0.4	-0.1	-0.1	3.7	-1.1	-0.6	1.3	0.0	0.1
HF'm ShapeSyst SR	0.4	-0.4	-0.2	-0.4	0.2	10.0	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
Sys OniaID	0.4	3.4	-0.3	-3.5	-0.4	-0.4	10.0	0.4	-1.4	0.7	-3.4	1.6	1.0	-4.2	-1.4	-18.8	-11.1	4.3	-4.3	-0.4	0.2	-0.2	-0.2
VV Cross-Section	1.2	3.9	3.9	3.0	1.8	-0.4	-0.4	10.0	1.2	1.3	1.7	-0.9	-0.1	0.5	0.9	0.0	-3.4	-16.8	-18.7	-0.1	-0.7	0.3	-0.1
luminosity	2.3	1.4	-0.3	-1.6	0.2	0.5	-1.4	-1.5	10.0	2.7	-0.1	-1.7	-0.4	-11.9	-0.1	0.9	-4.1	-4.6	-7.6	2.7	-4.6	-0.4	-0.3
WH Cross-Section	2.7	3.7	3.6	3.4	0.6	0.7	1.8	-2.1	2.7	10.0	0.0	0.0	4.4	0.0	1.8	-4.6	0.9	0.3	-0.2	0.7	-0.1	1.4	1.4
WH modeling (generator)	1.8	1.9	7.7	1.0	0.3	-4.8	-0.4	1.7	-0.3	0.0	10.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
WH Syst T)	3.7	4.0	-15.4	6.9	-0.4	1.8	1.8	0.8	-1.2	4.4	27.8	10.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
WH Syst gail)	4.8	-2.1	-3.4	0.4	0.2	0.5	1.0	-0.1	-0.4	0.2	10.0	-18.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
WH Cross-Section	10.5	-10.5	-4.2	-10.7	-0.3	-5.7	-4.3	0.5	-11.9	-17.4	21.8	11.4	-17.7	0.0	-4.7	-22.0	-2.4	-15.9	-15.1	2.3	2.4	5.3	5.3
WH_vxvF	-0.9	2.8	6.7	2.4	0.4	1.8	-1.8	-0.9	-0.3	1.8	-13.2	-17.7	11.3	-4.7	-10.1	0.2	0.1	0.1	-0.8	1.1	-0.1	0.7	-0.9
tt Cross-Section	2.4	3.4	-3.4	-3.2	-0.1	-0.4	-1.1	3.0	-2.4	-4.5	-1.4	3.9	1.9	10.0	-0.1	0.0	0.0	1.4	-1.4	-4.4	0.5	-0.4	1.4
ttbar CO Cross-Section	5.4	-4.2	-7.8	-4.5	-0.1	1.3	-18.8	3.4	-6.1	0.9	0.6	-0.6	2.2	2.4	0.1	0.0	0.0	-11.9	-9.9	-0.1	-0.8	0.2	0.3
ttbar HF's Cross-Section	-0.1	-8.8	3.4	2.4	3.7	1.6	-11.1	-16.8	-4.8	0.3	-6.2	1.2	-1.4	4.3	-2.1	1.4	-11.9	-16.8	-18.8	-1.8	0.0	-0.5	-0.5
ttbar HF'm Cross-Section	18.8	1.8	2.0	2.8	-10.1	4.2	-18.7	-7.4	-6.3	-4.0	1.1	1.0	-10.8	-4.4	-4.5	-0.1	-16.8	-4.4	-0.5	-1.8	0.0	1.7	1.7
ttbar Light Cross-Section	1.8	-6.1	-4.4	-4.9	-0.4	-2.9	-4.3	-1.1	-2.7	2.7	1.9	1.8	2.7	13.1	1.1	4.4	-2.1	-18.8	-0.1	-0.5	-2.7	0.0	2.0
ttbar gen Cross-Section	1.1	0.9	0.4	0.6	1.2	0.2	-1.2	-0.7	0.7	-0.1	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
SM tt Cross-Section	0.5	0.6	-1.0	-0.6	0.0	0.1	0.2	0.3	-0.4	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1
$\mu_{\text{renorm}}$	8.3	8.3	1.5	1.5	0.1	0.1	-0.1	-0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1

# Realistic Asimov HT Fit - mH800 - CutAndCount,50% tttt\_Xsec, Fix all NFs, Fix NF\_tttt=2



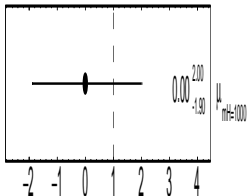
b-tagging M1210 Light	1.6	1.4	2.4	1.7	0.3	0.0	0.4	1.2	2.2	2.8	1.8	0.6	0.2	0.0	-0.5	2.4	3.4	-0.1	13.8	1.8	1.1	0.7	8.1
JES EffectiveNP Modeling1	1.4	-0.3	-7.9	6.4	-1.1	1.2	-3.4	3.9	-1.4	3.7	1.9	-6.0	-2.2	-0.5	2.8	8.4	-4.3	4.8	5.8	6.1	-2.9	0.8	-0.1
JES Flavor Composition tag	2.4	7.9	100.2	7.1	-1.4	-0.9	-3.0	3.8	-2.0	6.6	7.7	-12.4	-3.3	-6.2	6.7	8.8	-7.8	8.4	2.1	4.6	4.9	-1.2	1.8
JES Pileup RhoTopology	1.7	-6.4	-7.1	-0.3	-1.0	-0.4	-3.0	3.1	-1.8	0.4	1.9	-6.9	-2.8	-10.7	2.4	3.2	-4.3	2.6	2.8	-4.9	-8.6	-0.7	-2.8
HF in ShapeSyst SR	0.3	-1.1	-1.4	-1.0	100.2	0.2	-0.6	4.8	0.3	0.0	0.3	-0.4	0.3	-0.5	0.4	-0.1	-0.1	3.7	-1.3	-0.6	1.3	0.0	0.1
HF in ShapeSyst SR	0.3	-1.1	-1.4	-1.0	100.2	0.2	-0.6	4.8	0.3	0.0	0.3	-0.4	0.3	-0.5	0.4	-0.1	-0.1	3.7	-1.3	-0.6	1.3	0.0	0.1
Sys OniaID	0.4	3.4	-0.3	-0.5	-0.4	0.4	100.2	0.4	-1.4	0.7	-3.4	1.6	1.0	-4.2	-1.4	-13.8	-11.1	4.3	-4.3	-0.4	0.2	-0.2	
VV Cross-Section	1.2	3.8	3.8	3.1	1.8	-0.4	0.5	100.2	1.5	1.3	1.7	0.9	-0.1	0.5	-0.9	0.0	3.4	-0.8	-10.7	-0.1	-0.7	0.3	-0.1
luminosity	2.2	-1.4	-0.5	-1.6	0.2	0.5	-1.4	-1.5	100.2	2.7	-0.1	-1.7	-0.1	-11.9	-0.1	0.9	-4.1	-4.6	-7.6	2.7	-4.6	0.5	-0.1
WH Cross-Section	3.8	3.7	4.6	3.6	3.5	0.6	0.7	1.8	-2.1	100.2	4.6	0.2	0.0	1.8	-0.2	4.4	0.5	1.8	-4.6	0.9	0.3	-0.2	1.3
WH modeling (generator)	1.8	1.9	7.7	1.0	0.3	-4.8	-0.4	1.7	-0.1	0.0	100.2	27.1	10.7	18.8	-13.3	-1.9	0.8	6.2	-6.7	1.9	0.2	-0.1	3.0
WH Syst T)	3.8	4.0	-15.4	4.8	-0.4	1.8	1.8	0.8	-1.7	4.4	27.1	100.2	-48.5	17.5	17.2	4.8	-0.8	-0.4	1.2	1.3	-1.8	0.8	0.4
WH Syst goli)	5.2	-2.2	-3.5	0.6	0.2	0.5	1.0	-0.1	-0.3	0.2	10.7	-48.5	100.2	-7.8	11.4	1.9	2.3	-1.5	1.1	2.7	2.0	7.6	-18.4
WH Cross-Section	10.5	-0.5	-0.2	-0.7	-0.5	-0.7	-4.3	0.5	-11.9	-0.7	21.8	-7.8	-7.8	100.2	-4.7	-22.0	-2.4	4.3	-15.8	-15.1	2.3	0.1	4.1
WH_vxvF	-0.9	2.8	6.3	2.4	0.4	1.8	-1.8	-0.9	-0.3	1.8	-13.2	17.8	11.4	-4.7	100.2	0.2	0.1	0.1	-0.8	1.1	-0.1	0.6	-0.8
tt Cross-Section	2.4	3.4	-3.4	-3.2	-0.1	-0.4	-1.1	3.0	-2.8	-4.5	-1.4	-3.9	1.9	-0.2	-0.1	100.2	0.0	1.4	-1.4	-4.4	0.5	0.8	1.6
ttbar CO Cross-Section	5.4	-4.2	-7.8	-4.5	-0.1	1.3	-18.4	3.4	-6.1	0.9	0.6	0.6	2.2	2.4	0.1	0.0	100.2	-11.9	-3.9	-0.1	-0.8	0.3	0.2
ttbar HF in Cross-Section	-0.1	-8.8	3.4	2.4	3.7	1.6	-11.1	-18.4	-4.8	-0.3	-0.2	1.2	-1.4	-4.3	-2.1	1.4	-11.9	100.2	-18.4	-18.4	-1.8	-0.1	-0.7
ttbar HF in Cross-Section	18.4	1.6	2.1	2.8	-1.0	-0.1	4.2	18.7	-7.8	-4.3	-4.0	1.2	1.1	-10.8	-4.6	-4.5	-0.1	-18.4	100.2	-4.6	-4.6	-1.8	1.9
ttbar goli Cross-Section	1.8	-0.1	-4.6	-4.9	-0.4	-0.9	-4.3	-1.1	-2.7	0.7	1.9	1.8	2.7	-13.1	1.1	4.4	-2.1	-18.4	-0.1	100.2	-2.7	0.2	2.2
ttbar goli Cross-Section	1.1	0.2	-4.6	-4.6	-1.1	-1.2	-1.2	-0.7	-0.7	-4.4	-0.1	1.2	1.2	-1.1	0.5	0.5	0.5	-18.4	-1.1	100.2	-4.6	-4.6	1.1
SM tt Cross-Section	0.7	0.8	-1.2	-0.7	-0.2	0.2	0.3	-0.2	-1.2	-0.1	1.8	-7.8	-3.1	0.6	0.8	0.3	0.1	-0.1	-0.2	-0.1	100.2	-4.6	-4.6
SM tt Cross-Section	8.1	0.1	1.8	2.8	0.1	0.0	-0.2	0.1	-0.1	1.7	3.0	8.6	-18.4	6.1	-0.8	1.6	0.2	-0.7	1.9	2.2	1.5	0.7	0.1
b-tagging M1210 Light	1.6	1.4	2.4	1.7	0.3	0.0	0.4	1.2	2.2	2.8	1.8	0.6	0.2	0.0	-0.5	2.4	3.4	-0.1	13.8	1.8	1.1	0.7	8.1
JES EffectiveNP Modeling1	1.4	-0.3	-7.9	6.4	-1.1	1.2	-3.4	3.9	-1.4	3.7	1.9	-6.0	-2.2	-0.5	2.8	8.4	-4.3	4.8	5.8	6.1	-2.9	0.8	-0.1
JES Flavor Composition tag	2.4	7.9	100.2	7.1	-1.4	-0.9	-3.0	3.8	-2.0	6.6	7.7	-12.4	-3.3	-6.2	6.7	8.8	-7.8	8.4	2.1	4.6	4.9	-1.2	1.8
JES Pileup RhoTopology	1.7	-6.4	-7.1	-0.3	-1.0	-0.4	-3.0	3.1	-1.8	0.4	1.9	-6.9	-2.8	-10.7	2.4	3.2	-4.3	2.6	2.8	-4.9	-8.6	-0.7	-2.8
HF in ShapeSyst SR	0.3	-1.1	-1.4	-1.0	100.2	0.2	-0.6	4.8	0.3	0.0	0.3	-0.4	0.3	-0.5	0.4	-0.1	-0.1	3.7	-1.3	-0.6	1.3	0.0	0.1
HF in ShapeSyst SR	0.3	-1.1	-1.4	-1.0	100.2	0.2	-0.6	4.8	0.3	0.0	0.3	-0.4	0.3	-0.5	0.4	-0.1	-0.1	3.7	-1.3	-0.6	1.3	0.0	0.1
Sys OniaID	0.4	3.4	-0.3	-0.5	-0.4	0.4	100.2	0.4	-1.4	0.7	-3.4	1.6	1.0	-4.2	-1.4	-13.8	-11.1	4.3	-4.3	-0.4	0.2	-0.2	
VV Cross-Section	1.2	3.8	3.8	3.1	1.8	-0.4	0.5	100.2	1.5	1.3	1.7	0.9	-0.1	0.5	-0.9	0.0	3.4	-0.8	-10.7	-0.1	-0.7	0.3	-0.1
luminosity	2.2	-1.4	-0.5	-1.6	0.2	0.5	-1.4	-1.5	100.2	2.7	-0.1	-1.7	-0.1	-11.9	-0.1	0.9	-4.1	-4.6	-7.6	2.7	-4.6	0.5	-0.1
WH Cross-Section	3.8	3.7	4.6	3.6	3.5	0.6	0.7	1.8	-2.1	100.2	4.6	0.2	0.0	1.8	-0.2	4.4	0.5	1.8	-4.6	0.9	0.3	-0.2	1.3
WH modeling (generator)	1.8	1.9	7.7	1.0	0.3	-4.8	-0.4	1.7	-0.1	0.0	100.2	27.1	10.7	18.8	-13.3	-1.9	0.8	6.2	-6.7	1.9	0.2	-0.1	3.0
WH Syst T)	3.8	4.0	-15.4	4.8	-0.4	1.8	1.8	0.8	-1.7	4.4	27.1	100.2	-48.5	17.5	17.2	4.8	-0.8	-0.4	1.2	1.3	-1.8	0.8	0.4
WH Syst goli)	5.2	-2.2	-3.5	0.6	0.2	0.5	1.0	-0.1	-0.3	0.2	10.7	-48.5	100.2	-7.8	11.4	1.9	2.3	-1.5	1.1	2.7	2.0	7.6	-18.4
WH Cross-Section	10.5	-0.5	-0.2	-0.7	-0.5	-0.7	-4.3	0.5	-11.9	-0.7	21.8	-7.8	-7.8	100.2	-4.7	-22.0	-2.4	4.3	-15.8	-15.1	2.3	0.1	4.1
WH_vxvF	-0.9	2.8	6.3	2.4	0.4	1.8	-1.8	-0.9	-0.3	1.8	-13.2	17.8	11.4	-4.7	100.2	0.2	0.1	0.1	-0.8	1.1	-0.1	0.6	-0.8
tt Cross-Section	2.4	3.4	-3.4	-3.2	-0.1	-0.4	-1.1	3.0	-2.8	-4.5	-1.4	-3.9	1.9	-0.2	-0.1	100.2	0.0	1.4	-1.4	-4.4	0.5	0.8	1.6
ttbar CO Cross-Section	5.4	-4.2	-7.8	-4.5	-0.1	1.3	-18.4	3.4	-6.1	0.9	0.6	0.6	2.2	2.4	0.1	0.0	100.2	-11.9	-3.9	-0.1	-0.8	0.3	0.2
ttbar HF in Cross-Section	-0.1	-8.8	3.4	2.4	3.7	1.6	-11.1	-18.4	-4.8	-0.3	-0.2	1.2	-1.4	-4.3	-2.1	1.4	-11.9	100.2	-18.4	-18.4	-1.8	-0.1	-0.7
ttbar HF in Cross-Section	18.4	1.6	2.1	2.8	-1.0	-0.1	4.2	18.7	-7.8	-4.3	-4.0	1.2	1.1	-10.8	-4.6	-4.5	-0.1	-18.4	100.2	-4.6	-4.6	-1.8	1.9
ttbar goli Cross-Section	1.8	-0.1	-4.6	-4.9	-0.4	-0.9	-4.3	-1.1	-2.7	0.7	1.9	1.8	2.7	-13.1	1.1	4.4	-2.1	-18.4	-0.1	100.2	-2.7	0.2	2.2
ttbar goli Cross-Section	1.1	0.2	-4.6	-4.6	-1.1	-1.2	-1.2	-0.7	-0.7	-4.4	-0.1	1.2	1.2	-1.1	0.5	0.5	0.5	-18.4	-1.1	100.2	-4.6	-4.6	1.1
SM tt Cross-Section	0.7	0.8	-1.2	-0.7	-0.2	0.2	0.3	-0.2	-1.2	-0.1	1.8	-7.8	-3.1	0.6	0.8	0.3	0.1	-0.1	-0.2	-0.1	100.2	-4.6	-4.6
SM tt Cross-Section	8.1	0.1	1.8	2.8	0.1	0.0	-0.2	0.1	-0.1	1.7	3.0	8.6	-18.4	6.1	-0.8	1.6	0.2	-0.7	1.9	2.2	1.5	0.7	0.1
b-tagging M1210 Light	1.6	1.4	2.4	1.7	0.3	0.0	0.4	1.2	2.2	2.8	1.8	0.6	0.2	0.0	-0.5	2.4	3.4	-0.1	13.8	1.8	1.1	0.7	8.1
JES EffectiveNP Modeling1	1.4	-0.3	-7.9	6.4	-1.1	1.2	-3.4	3.9	-1.4	3.7	1.9	-6.0	-2.2	-0.5	2.8	8.4	-4.3	4.8	5.8	6.1	-2.9	0.8	-0.1
JES Flavor Composition tag	2.4	7.9	100.2	7.1	-1.4	-0.9	-3.0	3.8	-2.0	6.6	7.7	-12.4	-3.3	-6.2	6.7	8.8	-7.8	8.4	2.1	4.6	4.9	-1.2	1.8
JES Pileup RhoTopology	1.7	-6.4	-7.1	-0.3	-1.0	-0.4	-3.0	3.1	-1.8	0.4	1.9	-6.9	-2.8	-10.7	2.4	3.2	-4.3	2.6	2.8	-4.9	-8.6	-0.7	-2.8
HF in ShapeSyst SR	0.3	-1.1	-1.4	-1.0	100.2	0.2	-0.6	4.8	0.3	0.0	0.3	-0.4	0.3	-0.5	0.4	-0.1	-0.1	3.7	-1.3	-0.6	1.3	0.0	0.1
HF in ShapeSyst SR	0.3	-1.1	-1.4	-1.0	100.2	0.2	-0.6	4.8	0.3	0.0	0.3	-0.4	0.3	-0.5	0.4	-0.1	-0.1	3.7	-1.3	-0.6	1.3	0.0	0.1
Sys OniaID	0.4	3.4	-0.3	-0.5	-0.4	0.4	100.2	0.4	-1.4	0.7	-3.4	1.6	1.0	-4.2	-1.4	-13.8	-11.1	4.3	-4.3	-0.4	0.2	-0.2	
VV Cross-Section	1.2	3.8	3.8	3.1	1.8	-0.4	0.5	100.2	1.5	1.3	1.7	0.9	-0.1	0.5	-0.9	0.0	3.4	-0.8	-10.7	-0.1	-0.7	0.3	-0.1
luminosity	2.2	-1.4	-0.5	-1.6	0.2	0.5	-1.4	-1.5	100.2	2.7	-0.1	-1.7	-0.1	-11.9	-0.1	0.9	-4.1	-4.6	-7.6	2.7	-4.6	0.5	-0.1
WH Cross-Section	3.8	3.7	4.6	3.6	3.5	0.6	0.7	1.8	-2.1	100.2	4.6	0.2	0.0	1.8	-0.2	4.4	0.5	1.8	-4.6	0.9	0.3	-0.2	1.3
WH modeling (generator)	1.8	1.9	7.7	1.0	0.3	-4.8	-0.4	1.7	-0.1	0.0	100.2	27.1	10.7	18.8	-13.3	-1.9	0.8	6.2	-6.7	1.9	0.2	-0.1	3.0
WH Syst T)	3.8	4.0	-15.4	4.8	-0.4	1.8	1.8	0.8	-1.7	4.4	27.1	100.2	-48.5	17.5	17.2	4.8	-0.8	-0.4	1.2	1.3	-1.8	0.8	0.4
WH Syst goli)	5.2	-2.2	-3.5	0.6	0.2	0.5	1.0	-0.1	-0.3	0.2	10.7	-48.5	100.2	-7.8	11.4	1.9	2.3	-1.5	1.1	2.7	2.0	7.6	-18.4
WH Cross-Section	10.5	-0.5	-0.2	-0.7	-0.5	-0.7	-4.3	0.5	-11.9	-0.7	21.8	-7.8	-7.8	100.2	-4.7	-22.0	-2.4	4.3	-15.8	-15.1	2.3	0.1	4.1
WH_vxvF	-0.9	2.8	6.3	2.4	0.4	1.8	-1.8	-0.9	-0.3	1.8	-13.2	17.8	11.4	-4.7	100.2	0.2	0.1	0.1	-0.8	1.1	-0.1	0.6	-0.8
tt Cross-Section	2.4	3.4	-3.4	-3.2	-0.1	-0.4	-1.1	3.0	-2.8	-4.5	-1.4	-3.9											

# Realistic Asimov HT Fit - mH900 - CutAndCount,50% tttt\_Xsec, Fix all NFs, Fix NF\_tttt=2



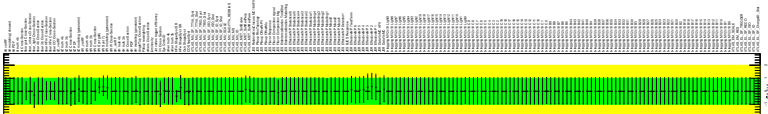
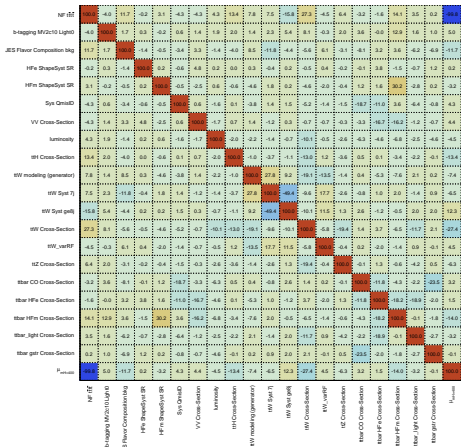
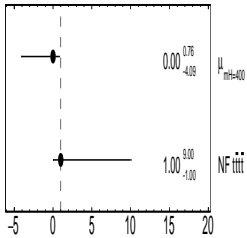
b-tagging M210 Light	1.6	1.4	2.4	1.7	0.3	0.0	0.4	1.2	2.2	2.8	1.8	0.6	5.1	10.0	-0.5	2.4	3.4	-0.1	13.8	1.8	1.1	0.8	8.1
JES EffectiveNP Modeling1	1.4	-0.3	-7.9	6.4	-1.1	1.2	-3.4	3.9	-1.4	3.7	1.9	-6.0	-2.3	-0.5	2.8	8.4	-4.3	4.8	5.8	6.1	-2.9	-0.9	-3.9
JES Flavor Composition tag	2.4	7.9	10.0	-7.1	-1.4	-0.9	-3.0	3.8	-2.0	6.6	7.7	-12.4	-3.3	-0.2	6.8	-7.8	3.4	2.1	-4.6	4.9	-1.4	2.0	2.0
JES Pileup RhoTopology	1.7	-6.4	-7.1	-6.3	-1.0	-0.4	-3.0	3.1	-1.8	-8.4	1.9	-6.9	-2.8	-0.7	2.4	3.2	-4.3	2.8	2.8	-4.9	-8.6	-0.8	-2.7
HF's ShapeSyst SR	0.3	-1.1	-1.4	-1.0	10.0	0.2	-0.4	4.8	0.3	0.0	0.3	-0.4	0.3	-0.5	0.4	-0.1	-0.1	3.7	-1.1	-0.6	1.3	0.0	0.3
HF'm ShapeSyst SR	-0.4	1.2	1.4	0.8	0.4	-10.0	-0.4	-5.0	-0.4	0.0	0.4	0.0	-0.4	0.5	-1.0	1.3	-0.1	0.9	1.2	0.3	-0.3	-0.1	
Sys OniaID	0.4	3.4	-3.0	-3.5	-0.4	-0.4	-10.0	-0.4	-1.4	0.7	-3.4	1.6	1.0	-4.2	-1.4	-13.8	-11.1	4.3	-4.3	-0.8	0.3	-0.3	
VV Cross-Section	1.9	3.9	3.8	3.1	1.8	0.4	0.4	10.0	1.2	2.1	1.9	-0.5	-4.4	-0.5	1.8	-4.6	0.8	3.3	-5.2	-0.7	-0.1	1.8	
luminosity	2.2	1.9	2.8	1.8	0.3	0.5	-1.4	-1.5	10.0	2.7	-0.3	-1.7	-0.3	-0.1	0.9	-4.1	-4.6	-7.8	2.7	-4.6	0.5	-2.1	
WH Cross-Section	2.8	3.7	3.6	3.6	3.6	3.7	3.8	3.7	3.8	3.7	10.0	3.8	3.7	3.6	3.6	3.7	3.8	3.7	3.6	3.6	3.7	3.8	3.7
WH modeling (generator)	1.8	1.9	7.7	1.0	0.3	-4.8	-0.4	1.7	-2.0	2.0	27.1	10.7	28	-13.3	1.9	0.8	6.2	-6.7	1.9	0.2	0.0	2.8	
WH Syst T)	3.8	4.0	-15.4	6.8	-5.4	1.8	1.8	0.8	-1.7	4.4	27.1	10.7	10.0	17.5	17.2	1.8	0.8	-5.4	1.2	1.3	0.7	0.8	9.4
WH Syst gail)	5.1	5.2	-3.5	-8.8	0.2	0.5	1.0	-0.1	-0.3	0.2	10.7	10.0	10.0	18.9	18.9	7.9	1.4	1.8	2.3	1.5	1.0	2.8	20.0
WH Cross-Section	10.5	-10.5	-4.2	-10.7	-0.3	-5.7	-4.3	0.5	-11.9	-17.4	21.8	-11.3	-7.8	-0.6	-4.7	-22.0	-2.4	-18.3	-13.1	2.3	3.4	4.5	4.5
WH_vxvF	-0.3	2.8	6.8	2.4	0.4	-1.8	-1.8	-0.9	-0.3	1.8	-13.2	17.7	11.4	-4.7	-10.1	0.2	0.1	0.0	-0.8	1.1	-0.1	0.8	-0.9
1Z Cross-Section	2.4	3.4	-3.4	-3.2	-0.1	-0.4	-1.1	3.0	-2.8	-4.5	-1.4	3.9	1.8	10.0	-0.3	-10.0	0.0	1.4	-1.4	-4.4	0.5	0.9	1.7
Star CO Cross-Section	3.4	-4.2	-7.8	-4.5	-0.1	-1.3	-18.8	3.4	-6.1	0.9	6.8	6.6	2.2	2.4	0.1	0.0	0.0	-11.9	-9.1	-21.4	0.3	0.1	0.1
Star HF's Cross-Section	-0.1	4.8	3.4	2.4	3.7	1.6	-11.1	-18.8	-4.8	0.3	-6.2	1.2	-1.4	4.3	-2.0	1.4	-11.9	-18.3	-18.8	2.0	0.2	-0.7	1.9
Star HF'm Cross-Section	18.8	1.8	2.1	2.8	-1.0	-10.1	4.2	18.7	-7.8	-6.3	-4.0	1.2	1.0	-10.0	-4.4	-4.5	-1.0	-18.3	-4.6	-0.5	-1.8	1.9	1.9
Star_lght Cross-Section	1.8	-6.1	-4.6	-4.9	-0.8	-2.9	-4.3	-1.1	-2.7	2.7	1.9	-1.7	2.6	13.1	1.1	4.4	-2.1	-18.8	-0.3	-10.0	-2.7	0.4	2.5
Star_gat Cross-Section	1.1	0.9	4.6	4.6	1.1	1.0	1.2	-1.0	-0.7	0.7	-4.4	-0.1	1.0	1.0	1.2	1.2	1.2	-1.1	1.2	1.2	1.2	1.2	1.2
SM int Cross-Section	0.8	-0.9	-1.4	-0.8	-0.2	0.2	0.3	0.4	-0.1	-1.4	-0.3	1.9	-7.4	3.8	0.8	0.9	0.3	0.2	-0.3	-0.4	0.0	-0.3	-0.3
μ <sub>tttt</sub>	8.1	8.0	2.2	2.7	0.2	0.1	-0.2	0.2	-0.1	1.9	2.8	8.6	10.0	6.5	-0.5	1.7	0.1	0.7	1.9	2.5	0.8	1.7	1.7

# Realistic Asimov HT Fit - mH1000 - CutAndCount,50% tttt\_Xsec, Fix all NFs, Fix NF\_tttt=2



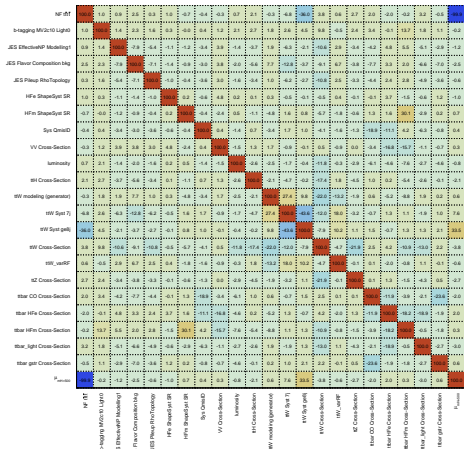
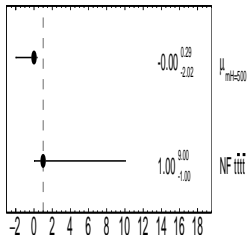
	b-tagging M1210 Light	JES EffectiveNP Modeling1	JES Flavor Composition tag	JES Pileup RhoTopology	HF's ShapeSyst SR	HF'm ShapeSyst SR	Sys OniaID	VV Cross-Section	luminosity	WH Cross-Section	WW modeling (generator)	WW Syst T)	WW Syst gail)	WW Cross-Section	WW_vadP	tt Cross-Section	ttbar CO Cross-Section	ttbar HF's Cross-Section	ttbar HF'm Cross-Section	ttbar Light Cross-Section	ttbar gen Cross-Section	SM int Cross-Section	$\mu_{H_{tttt}}$
b-tagging M1210 Light	1.0	1.5	2.4	1.7	0.3	0.0	0.4	1.2	2.2	2.8	1.8	2.6	5.0	10.0	-0.5	2.4	3.4	-0.1	13.8	1.8	1.1	0.8	0.1
JES EffectiveNP Modeling1	1.5	1.0	-7.9	6.4	-1.1	1.2	-3.4	3.9	-1.4	3.7	1.9	6.0	-2.2	10.5	2.8	8.4	-4.3	1.8	5.5	-6.1	-2.9	0.9	-2.9
JES Flavor Composition tag	2.4	-7.9	1.0	-7.1	-1.4	-0.9	-3.0	3.8	-2.0	6.6	7.7	-12.4	-3.4	10.2	6.6	-7.8	8.4	2.1	-4.6	4.9	-1.5	2.2	
JES Pileup RhoTopology	1.7	6.4	-7.1	1.0	-0.8	-0.4	-3.0	3.1	-1.4	3.6	1.9	6.0	-2.2	10.7	2.4	8.2	-4.3	2.6	2.8	-4.9	-0.6	0.8	-2.8
HF's ShapeSyst SR	0.3	-1.1	-1.4	-0.8	1.0	0.2	-0.4	4.8	0.3	0.0	0.3	-0.4	0.3	-0.5	0.4	-0.1	-0.1	3.7	-1.3	-0.6	1.3	0.0	0.3
HF'm ShapeSyst SR	-0.4	1.2	-0.9	-0.4	0.8	0.0	-0.4	3.9	-0.4	3.6	1.9	6.0	-2.2	10.5	2.8	8.4	-4.3	1.8	5.5	-6.1	-2.9	0.9	-2.9
Sys OniaID	0.4	-3.4	-3.0	-3.5	-0.4	-0.4	1.0	3.7	-1.4	1.6	1.0	-4.2	-1.4	-1.3	-18.4	-11.1	4.3	-4.3	-0.4	0.3	-0.3		
VV Cross-Section	1.2	3.9	3.8	3.1	4.8	0.4	4.4	1.0	-1.4	1.6	1.0	-4.2	-1.4	-1.3	-18.4	-11.1	4.3	-4.3	-0.4	0.3	-0.3		
luminosity	2.2	-1.4	-2.0	-1.6	0.2	0.5	-1.4	-1.5	-1.0	-2.7	-0.5	-1.7	-0.5	-11.9	-0.5	-0.9	-4.1	-4.6	-7.6	-2.7	-4.6	0.6	-0.0
WH Cross-Section	1.8	3.7	6.6	3.8	0.0	0.7	1.8	-2.1	3.7	1.9	6.0	-2.2	10.5	2.8	8.4	-4.3	1.8	5.5	-6.1	-2.9	0.9	-2.9	
WW modeling (generator)	1.8	1.9	7.7	1.0	0.3	-4.8	-0.4	1.7	-2.0	-0.0	1.0	10.7	10.7	11.9	-13.3	-1.9	0.8	-6.2	-6.7	1.9	0.2	0.0	2.8
WW Syst T)	5.0	10.5	-12.4	-3.4	10.2	6.6	-7.8	8.4	2.1	-4.6	4.9	-1.5	2.2	10.5	2.8	8.4	-4.3	1.8	5.5	-6.1	-2.9	0.9	-2.9
WW Syst gail)	10.0	-12.4	-3.4	10.2	6.6	-7.8	8.4	2.1	-4.6	4.9	-1.5	2.2	10.5	2.8	8.4	-4.3	1.8	5.5	-6.1	-2.9	0.9	-2.9	
WW Cross-Section	10.0	-12.4	-3.4	10.2	6.6	-7.8	8.4	2.1	-4.6	4.9	-1.5	2.2	10.5	2.8	8.4	-4.3	1.8	5.5	-6.1	-2.9	0.9	-2.9	
WW_vadP	-0.5	2.8	8.4	-4.3	1.8	-1.4	-1.3	-18.4	-11.1	4.3	-4.3	-0.4	0.3	-0.5	0.4	-0.1	-0.1	3.7	-1.3	-0.6	1.3	0.0	0.3
tt Cross-Section	2.4	3.4	-0.1	13.8	1.8	1.1	0.8	0.1	0.8	0.1	0.8	0.1	0.8	0.1	0.8	0.1	0.8	0.1	0.8	0.1	0.8	0.1	0.8
ttbar CO Cross-Section	3.4	-4.3	-7.8	-4.3	-0.1	1.3	-18.4	-11.1	4.3	-4.3	-0.4	0.3	-0.5	0.4	-0.1	-0.1	3.7	-1.3	-0.6	1.3	0.0	0.3	
ttbar HF's Cross-Section	-0.1	1.8	5.5	-6.1	-2.9	0.9	-2.9	0.9	-2.9	0.9	-2.9	0.9	-2.9	0.9	-2.9	0.9	-2.9	0.9	-2.9	0.9	-2.9	0.9	-2.9
ttbar HF'm Cross-Section	13.8	1.8	5.5	-6.1	-2.9	0.9	-2.9	0.9	-2.9	0.9	-2.9	0.9	-2.9	0.9	-2.9	0.9	-2.9	0.9	-2.9	0.9	-2.9	0.9	-2.9
ttbar Light Cross-Section	1.8	-6.1	-4.9	-1.5	2.2	10.5	2.8	8.4	-4.3	1.8	5.5	-6.1	-2.9	0.9	-2.9	0.9	-2.9	0.9	-2.9	0.9	-2.9	0.9	-2.9
ttbar gen Cross-Section	1.1	-2.9	0.9	-2.9	0.9	-2.9	0.9	-2.9	0.9	-2.9	0.9	-2.9	0.9	-2.9	0.9	-2.9	0.9	-2.9	0.9	-2.9	0.9	-2.9	
SM int Cross-Section	0.8	0.9	-1.5	-0.8	-0.2	0.3	0.4	-0.4	-0.5	-1.8	-0.5	-1.7	-0.5	-11.9	-0.5	-0.9	-4.1	-4.6	-7.6	-2.7	-4.6	0.6	-0.0
$\mu_{H_{tttt}}$	0.1	2.9	2.2	0.6	0.2	0.1	-0.3	0.2	-0.0	0.0	0.0	2.8	1.0	0.1	0.6	-0.5	1.8	0.5	0.8	2.0	2.5	1.5	0.7

Realistic Asimov HT Fit - mH400 - CutAndCount, 50% tttt\_Xsec, Fix  
Fakes/ttW NFs, Free Float NF\_tttt=1

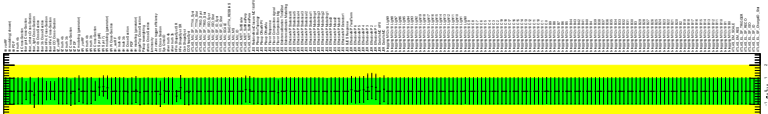
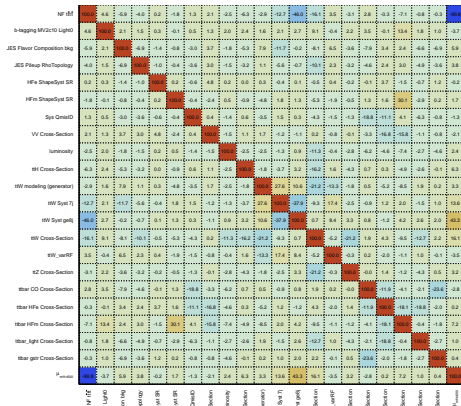
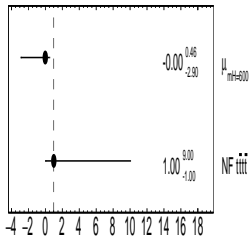




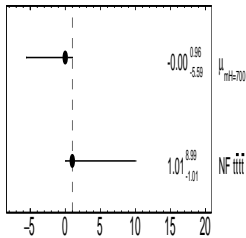
# Realistic Asimov HT Fit - mH500 - CutAndCount, 50% $t\bar{t}t\bar{t}$ Xsec, Fix Fakes/ $t\bar{t}W$ NFs, Free Float NF\_ $t\bar{t}t\bar{t}$ =1



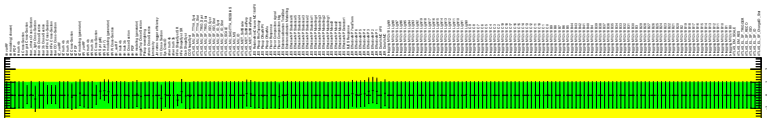
# Realistic Asimov HT Fit - mH600 - CutAndCount, 50% $tt\bar{t}t$ Xsec, Fix Fakes/ $ttW$ NFs, Free Float NF\_ $tt\bar{t}t$ =1



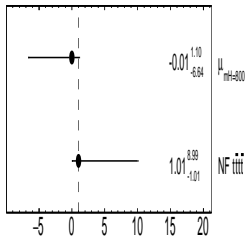
# Realistic Asimov HT Fit - mH700 - CutAndCount, 50% $t\bar{t}t$ Xsec, Fix Fakes/ $t\bar{t}W$ NFs, Free Float NF\_ $t\bar{t}t$ =1



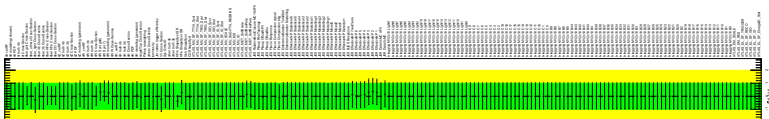
NP fit	10.00	5.0	-8.8	0.0	-1.3	2.3	1.3	-3.4	0.8	4.2	-18.0	-40.4	-21.0	6.0	-4.9	2.3	0.0	-4.9	-0.4	-0.2	-49.0
b-tagging MV2c10 Light	5.0	10.00	2.0	0.3	-0.1	0.5	1.3	2.0	2.3	1.7	1.8	2.8	8.7	-0.3	-2.1	3.5	-0.1	13.4	1.8	1.0	-4.1
JES Flavor Composition bkg	-8.8	2.0	10.00	1.4	-0.2	-3.1	0.8	-5.7	-4.8	-1.6	-10.7	-7.7	-2.7	-0.1	8.1	1.4	-7.9	8.4	2.1	-4.6	8.3
HFm ShapeSyst SR	0.0	0.3	-1.4	10.00	0.3	-0.6	4.8	0.2	0.0	0.3	-0.4	0.2	-0.6	0.4	-0.1	-0.1	3.7	-1.0	-0.7	1.2	0.0
HFm ShapeSyst SR	-1.3	-0.1	-0.8	0.2	10.00	-0.4	-2.4	0.5	-0.9	-4.8	1.8	1.0	-5.3	-1.9	-0.5	1.3	1.6	30.1	-2.9	0.2	1.3
Sys OniaD	2.2	0.5	-3.1	-0.6	-0.4	10.00	0.4	-1.4	0.5	3.5	1.2	0.0	-4.9	-1.4	-1.4	-18.8	-11.1	4.1	-6.3	-0.8	-2.2
VV Cross-Section	2.3	1.3	3.6	4.8	-2.4	0.4	10.00	-1.5	1.1	1.7	-1.3	-1.1	0.0	-0.7	-0.1	-3.4	-16.8	-15.8	-1.1	-0.7	-2.2
Luminosity	0.4	3.0	-1.3	0.2	0.5	-1.4	-1.5	10.00	-2.3	0.5	-1.0	1.2	-18.9	-0.5	0.7	-4.3	4.6	-7.3	-2.7	4.6	3.3
WH Cross-Section	-8.8	2.3	-4.8	0.0	-0.8	0.5	1.1	-2.3	10.00	-2.0	-2.8	4.0	-15.3	1.3	-4.1	0.7	0.3	-4.1	-2.6	-0.1	8.8
WW modeling (generator)	-0.2	1.7	7.8	0.3	-4.8	-0.2	1.7	-0.2	-2.8	10.00	27.0	1.6	-20.7	-13.3	-1.9	0.6	4.2	-6.7	1.9	0.3	9.8
WW Syst gsf	-18.0	-1.8	-10.7	-0.4	1.4	1.2	1.3	-1.0	-2.8	27.0	10.00	-36.8	-7.3	16.6	-3.0	-1.0	1.1	2.4	-1.5	-1.0	19.0
WW Syst gsf	-42.4	2.8	0.7	0.2	1.0	0.0	-1.1	1.3	4.0	9.6	-36.8	10.00	2.0	7.8	3.9	1.2	1.3	3.9	2.5	-1.0	39.5
WW Cross-Section	-21.0	-4.7	-7.1	-0.5	-5.3	-4.5	0.0	-10.9	-15.2	-21.4	-7.3	2.0	10.6	-5.9	-20.5	1.9	4.2	-4.1	-12.7	-1.2	21.0
WW_vsrRF	6.0	-0.3	6.1	0.4	-1.9	-1.4	-0.7	-0.5	1.3	-13.3	16.6	7.8	-5.9	10.00	-0.5	0.2	2.0	-1.1	1.0	-0.1	-6.1
HZ Cross-Section	-4.9	3.1	-3.4	-0.1	0.0	-1.4	0.1	-3.7	-4.1	-1.9	-2.0	9.9	-20.7	-0.5	10.00	-0.1	1.4	-1.1	-4.3	0.5	5.0
tbar CO Cross-Section	2.2	3.5	-7.9	-0.1	1.3	-18.8	0.4	-4.0	0.7	0.6	-1.0	1.2	1.0	0.2	-0.1	10.00	-11.9	-4.0	-2.1	-23.6	-2.2
tbar HFm Cross-Section	-0.5	-1.1	3.4	3.7	1.8	-11.5	-16.8	4.0	0.3	-0.2	1.1	1.3	4.0	2.0	1.4	-11.9	10.00	-18.8	-0.2	-40.0	-0.5
tbar HFm Cross-Section	-4.9	13.4	2.6	-1.5	30.1	4.1	-15.8	-7.3	-4.7	-4.7	2.4	9.9	-9.1	-1.2	-1.1	-40.0	-18.8	10.00	-0.5	1.8	7.0
tbar Jght Cross-Section	-0.4	1.8	-4.6	-0.7	-2.3	-6.3	-1.1	-2.7	-2.6	1.9	-1.5	-2.5	-13.3	1.0	-4.3	-2.1	-18.8	-0.5	10.00	-0.7	0.6
tbar gsf Cross-Section	-0.2	1.0	-4.9	1.2	0.0	-0.8	-0.7	-4.6	-0.1	0.0	1.0	0.0	2.0	-0.1	0.5	-23.6	-2.0	-1.8	-2.7	10.00	0.3
$\mu_{t\bar{t}t}$	10.00	-4.1	8.8	0.0	1.2	-2.2	2.2	3.2	8.8	0.6	10.0	39.5	21.0	-4.1	5.0	-2.2	-0.0	7.0	0.6	0.3	10.00



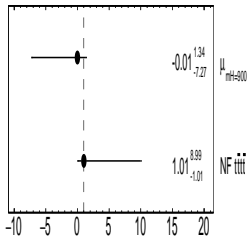
# Realistic Asimov HT Fit - mH800 - CutAndCount, 50% $t\bar{t}t\bar{t}$ Xsec, Fix Fakes/ $t\bar{t}W$ NFs, Free Float NF\_ $t\bar{t}t\bar{t}$ =1



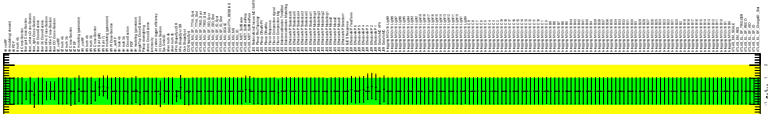
NP fit	6.0	-0.3	0.0	-1.6	2.0	2.6	-3.6	-0.4	1.2	-12.9	-20.6	-23.9	4.9	4.2	2.3	1.0	-7.1	-1.6	-0.1	-49.4	
b-tagging MV2c10 Light	6.0	6.00	1.8	0.3	-0.1	0.5	1.4	2.0	2.2	1.7	1.9	1.7	8.4	-0.3	2.0	3.5	0.0	13.3	1.7	-1.0	-5.0
JES Flavor Composition bkg	-0.2	0.0	1.0	1.4	-0.1	-3.1	1.8	-0.2	-0.7	1.6	-11.1	5.1	-4.2	8.2	1.2	-4.0	3.3	2.7	6.4	6.9	9.3
HFm ShapeSyst SR	0.0	0.3	-1.4	100.0	0.0	-0.6	4.8	0.2	0.0	0.3	-0.4	0.2	-0.6	0.4	-0.1	-0.1	3.7	-1.0	-0.7	1.2	0.0
HFm ShapeSyst SR	-1.6	-0.1	-0.7	0.2	100.0	-0.4	-2.4	0.5	-0.9	-4.8	1.8	1.3	-5.1	-1.9	-0.5	1.3	1.6	30.1	-2.9	0.2	1.6
Sys OniaD	2.0	0.5	-3.1	-0.6	-0.4	100.0	0.4	-1.4	0.5	3.5	1.3	0.2	-4.9	-1.5	-1.4	-18.8	-11.0	4.1	-6.3	-0.8	-2.0
VV Cross-Section	2.6	1.4	3.6	4.8	-2.0	0.4	100.0	-1.6	1.0	1.7	-1.3	-1.5	-0.1	-0.7	-0.1	-3.3	-16.8	-15.9	-1.1	-0.7	-2.6
Luminosity	-3.6	2.0	-1.6	0.2	0.5	-1.4	1.8	100.0	-0.3	3.6	-1.1	1.7	-10.7	-0.5	3.7	-4.3	4.6	-7.3	-2.6	4.6	3.6
HW Cross-Section	-0.4	2.2	-4.7	0.0	-0.9	0.5	1.0	-2.9	100.0	-1.9	-3.2	5.3	-14.7	1.3	-3.9	0.7	0.2	-4.8	-2.5	-0.1	9.4
HW modeling (generator)	-1.7	1.7	7.8	0.3	-4.9	-0.5	1.7	-0.7	-1.9	100.0	27.4	1.6	-20.7	-13.3	1.9	0.6	4.2	-6.6	1.9	0.3	1.6
HW Syst $\gamma$	-12.9	1.9	-11.1	-0.4	1.4	1.3	1.3	-1.3	-3.2	27.4	100.0	-36.9	-8.1	17.2	-0.1	-0.9	1.0	2.1	-1.4	0.9	14.1
HW Syst gqk	53.6	1.7	2.1	0.2	1.3	-0.2	-1.5	1.7	5.3	8.6	-36.9	100.0	5.9	7.1	5.0	0.8	1.8	4.7	3.0	-1.9	50.9
HW Cross-Section	-23.3	5.4	-0.7	-0.5	-5.1	-4.5	-0.1	-10.7	-14.7	-21.0	-6.1	5.9	100.0	-5.7	-19.9	1.8	3.9	4.9	-12.3	1.2	23.4
HW_vetRF	4.9	-0.3	6.2	0.4	-1.9	-1.5	-0.7	-0.5	1.3	-13.3	17.2	7.1	-5.7	100.0	-0.5	0.2	2.0	-1.1	1.0	-0.1	-4.9
HZ Cross-Section	-6.3	3.0	-3.3	-0.1	-0.9	-1.4	0.1	-3.7	-0.9	-1.9	-0.1	6.0	-19.6	-0.5	100.0	-0.1	1.3	-1.0	-4.3	0.5	6.3
tbar CO Cross-Section	2.2	3.5	-4.0	-0.1	1.3	-18.8	-0.3	-4.0	0.7	0.6	-0.9	0.8	1.9	0.2	-0.1	100.0	-11.8	-4.0	-2.2	-33.6	-2.2
tbar HFm Cross-Section	1.0	-0.0	3.3	3.7	1.8	-19.6	-0.6	4.0	0.3	-0.2	1.0	1.8	3.0	2.0	1.3	-11.8	100.0	-18.8	-0.0	-1.1	-1.1
tbar HFm Cross-Section	-7.1	13.3	2.7	-1.5	30.1	4.1	-15.9	-7.3	-4.6	4.8	2.1	8.7	-8.4	-1.2	-1.0	-4.0	-18.2	100.0	-0.4	-1.8	7.3
tbar Jght Cross-Section	-1.6	-1.7	4.4	-0.7	-2.3	-6.3	-1.1	-2.6	2.5	1.9	-1.4	3.0	-13.3	1.0	-4.5	-2.2	-18.8	-0.4	100.0	-0.7	1.9
tbar gqk Cross-Section	-0.1	-1.0	-6.9	1.2	9.0	-0.8	-0.7	-4.6	-0.1	0.0	0.9	1.9	2.0	-0.1	0.5	-23.6	-2.0	-1.8	-2.7	100.0	0.2
$\mu_{mH800}$	-0.0	0.0	9.3	0.0	1.6	-2.0	0.6	3.6	8.4	1.6	1.4	30.5	23.4	-4.9	8.2	-2.2	-1.1	7.2	1.9	1.3	100.0
NP fit	6.0	-0.3	0.0	-1.6	2.0	2.6	-3.6	-0.4	1.2	-12.9	-20.6	-23.9	4.9	4.2	2.3	1.0	-7.1	-1.6	-0.1	-49.4	



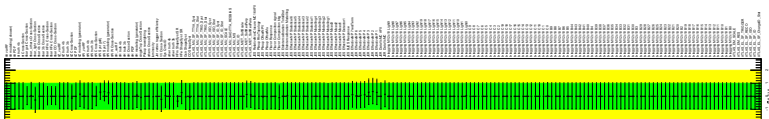
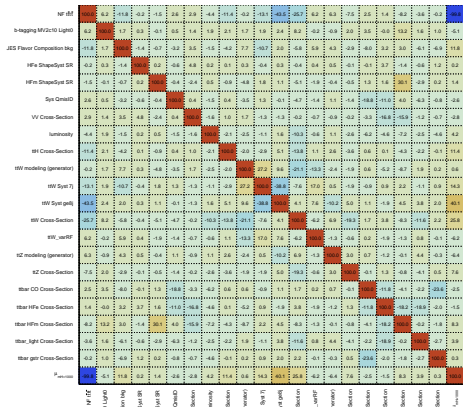
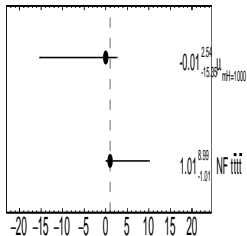
# Realistic Asimov HT Fit - mH900 - CutAndCount, 50% $t\bar{t}t\bar{t}$ Xsec, Fix Fakes/ $t\bar{t}W$ NFs, Free Float NF\_ $t\bar{t}t\bar{t}$ =1



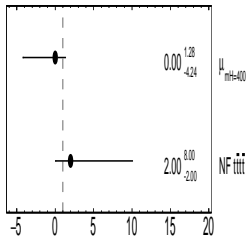
	NP fit	b-tagging MV2c10 Light	JES Flavor Composition bkg	HFm ShapeSyst SR	HFm ShapeSyst SR	Sys OniaD	VV Cross-Section	Luminosity	HW Cross-Section	HW modeling (generator)	HW Syst $\gamma$	HW Syst gals	HW Cross-Section	HW_varHF	IZ Cross-Section	tbar CO Cross-Section	tbar HFm Cross-Section	tbar HFm Cross-Section	tbar Jght Cross-Section	tbar gnt Cross-Section	$\mu_{\text{Asimov}}$
NP fit	6.5	-11.6	-0.2	-1.4	2.4	0.3	-4.4	-11.1	-0.3	-14.6	-27.7	-37.1	6.1	-1.0	2.5	1.3	-7.6	-2.7	0.0	-49.4	
b-tagging MV2c10 Light	6.5	6.0	1.7	0.3	-0.1	0.6	1.4	1.9	2.0	1.7	1.8	1.4	7.9	-0.2	1.9	3.5	0.0	13.1	1.6	1.0	-5.6
JES Flavor Composition bkg	-11.6	6.0	1.7	0.3	-0.1	0.7	3.2	-1.5	-4.3	7.8	-10.6	-30.7	-5.9	-3.0	4.0	3.2	2.9	-6.1	-6.0	-1.4	13.1
HFm ShapeSyst SR	-0.2	0.3	-1.4	100.0	0.0	-0.6	4.8	0.2	0.1	0.3	-0.4	0.3	-0.4	0.4	-0.1	-0.1	3.7	-1.4	-0.6	1.2	0.2
HFm ShapeSyst SR	-1.4	-0.1	-0.7	0.2	100.0	-0.4	0.4	0.5	-0.9	-4.8	1.8	1.2	-5.1	-1.9	-0.5	1.3	1.6	30.1	-2.9	0.2	1.3
Sys OniaD	2.4	0.6	-3.2	-0.6	-0.4	100.0	0.4	-1.5	0.4	3.5	1.2	-0.4	-4.8	-1.4	-1.4	-18.8	-11.0	4.0	-6.3	-0.8	-2.4
VV Cross-Section	3.0	1.4	3.5	4.8	-2.4	0.4	100.0	-1.6	0.9	1.7	-1.4	-1.6	-0.1	-0.7	-0.2	-3.3	-16.8	-15.9	-1.2	-0.7	-2.9
Luminosity	-4.4	1.9	-1.5	0.2	0.5	-1.5	-1.5	100.0	-0.1	-0.5	-1.0	-0.2	0.6	-0.6	-4.3	4.6	-7.2	2.5	4.6	4.3	0.0
HW Cross-Section	-11.1	2.0	-4.3	0.1	-0.8	0.4	0.9	-2.1	100.0	-1.9	-2.7	6.0	-13.7	1.1	-3.7	0.6	0.1	4.4	-2.2	-0.1	11.2
HW modeling (generator)	-14.6	1.9	-10.6	-0.4	1.2	1.2	1.4	-1.2	-2.7	27.2	100.0	-36.2	-6.8	16.8	-1.8	-0.9	0.9	2.3	-1.0	0.9	15.7
HW Syst $\gamma$	-27.7	1.4	3.0	0.3	1.2	-0.4	-1.6	2.0	6.0	9.2	-36.2	100.0	7.6	6.5	5.4	0.7	1.9	4.9	4.1	-1.8	49.8
HW Cross-Section	-37.1	1.9	-5.7	-0.4	-5.1	-4.6	-0.3	-10.2	-13.7	-21.9	-6.8	7.6	100.0	-6.2	-19.2	1.6	3.8	4.3	-11.5	-1.1	27.2
HW_varHF	6.1	-0.2	5.9	0.4	-1.9	-1.4	-0.7	-0.6	1.1	-13.3	16.8	6.5	-6.3	100.0	-0.6	0.2	1.9	-1.0	0.8	-0.1	-6.1
IZ Cross-Section	-7.6	1.9	-0.5	0.1	-0.1	-1.4	0.3	-3.0	-3.7	-1.9	-1.8	6.4	-19.2	0.6	100.0	-0.1	1.3	-0.9	-4.1	0.5	7.1
tbar CO Cross-Section	2.5	3.5	-0.1	1.1	-18.8	-0.3	-4.0	0.6	0.6	-0.9	0.7	1.6	0.2	-0.1	100.0	-11.8	-4.0	-2.2	-33.6	-2.5	0.0
tbar HFm Cross-Section	1.3	-0.2	3.3	3.7	1.8	-19.2	-0.6	4.0	0.1	-0.2	0.9	1.9	1.3	-11.8	100.0	-18.8	-18.8	-2.2	-4.4	-4.4	0.0
tbar HFm Cross-Section	-7.6	13.2	2.9	1.4	30.1	4.0	-15.9	-7.3	-4.4	-4.7	2.3	-4.9	-8.1	-1.3	-4.0	100.0	-2.2	-1.8	7.7	0.0	0.0
tbar Jght Cross-Section	-0.7	1.6	-4.1	-0.6	-2.3	-6.3	-1.2	-2.5	-2.2	1.9	-1.0	-4.1	-11.8	0.8	-4.1	-2.2	100.0	-0.7	4.0	0.0	0.0
tbar gnt Cross-Section	0.0	-1.0	-6.9	1.2	9.0	-0.8	-0.7	-4.6	-0.1	0.2	0.9	1.8	2.1	-0.1	0.5	-23.6	-2.0	-1.8	-2.7	-2.0	0.1
$\mu_{\text{Asimov}}$	-49.4	-5.6	11.4	0.2	1.3	-2.4	0.9	4.2	11.2	0.7	15.7	-69.8	27.1	-6.1	7.1	-2.5	-1.4	7.7	4.0	-1.1	100.0



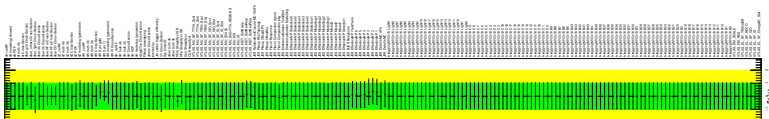
# Realistic Asimov HT Fit - mH1000 - CutAndCount, 50% tttt\_Xsec, Fix Fakes/ttW NFs, Free Float NF\_tttt=1



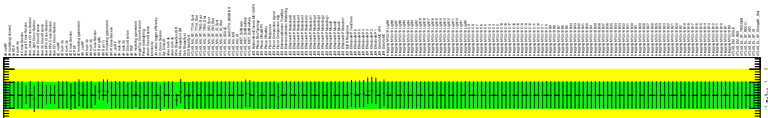
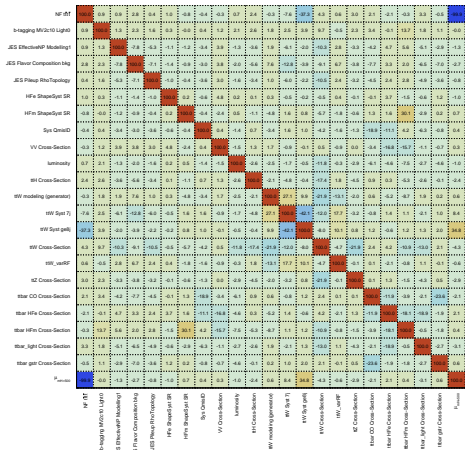
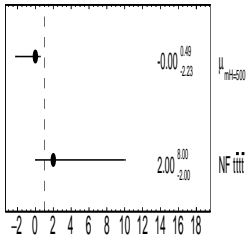
# Realistic Asimov HT Fit - mH400 - CutAndCount, 50% $t\bar{t}t\bar{t}$ Xsec, Fix Fakes/ $t\bar{t}W$ NFs, Free Float NF $t\bar{t}t\bar{t}=2$



NP fit	100.0	-4.7	12.4	-0.3	3.3	-4.5	-4.6	14.2	6.3	7.7	-15.4	-28.9	-4.8	6.8	3.3	-1.7	14.0	3.6	0.2	-49.1
b-tagging MV2c10 Light0	-4.2	100.0	1.6	0.3	-0.2	0.7	1.8	1.8	1.4	2.2	4.8	7.7	0.3	2.0	3.6	0.0	12.7	1.6	1.1	5.4
JES Flavor Composition bkg	12.4	1.6	100.0	-1.4	-0.5	-3.5	3.3	-3.8	8.6	-11.6	-4.6	-6.2	6.0	-3.0	-8.1	3.2	3.8	-6.2	-49.1	-12.4
HFm ShapeSyst SR	-0.3	0.3	-1.4	100.0	0.2	-0.6	4.9	0.0	0.3	-2.4	0.2	-0.5	0.4	-0.2	-0.1	3.8	-1.5	-0.6	1.2	0.2
HFm ShapeSyst SR	3.3	-0.2	-0.5	0.2	100.0	-0.5	-2.5	-0.5	-4.5	1.8	0.1	-4.5	-2.0	-0.3	1.2	1.6	30.2	-2.8	0.2	-3.4
Sys OnMid	-4.5	0.7	-0.5	-0.6	-0.5	100.0	8.6	0.0	3.8	1.3	1.4	-5.3	-1.3	-1.8	-18.7	-11.0	3.5	-4.4	-6.8	4.0
VV Cross-Section	-4.6	1.5	3.2	4.9	-2.5	0.6	100.0	0.6	1.3	-1.2	0.3	-0.8	-2.7	-0.3	-3.2	-16.7	-16.2	-1.2	-0.7	4.6
tH Cross-Section	14.2	1.8	-3.8	0.0	-0.5	0.0	0.6	100.0	-0.9	-3.6	-1.2	-12.5	1.1	-3.5	0.4	0.1	-3.1	-2.2	-0.1	-14.2
WW modeling (generator)	8.3	1.4	1.6	0.0	-4.5	3.8	1.3	-3.8	100.0	2.5	0.3	18.6	-0.5	-1.4	0.5	0.3	-7.4	2.2	0.2	-7.9
WW Syst Tj	7.7	2.2	-11.6	-0.4	1.8	1.3	-1.2	-3.6	2.5	100.0	-48.5	6.3	17.5	-2.5	-0.8	1.1	2.0	-1.6	0.9	-4.7
WW Syst gell	-15.4	4.8	-4.6	0.2	0.1	1.4	0.3	-1.2	0.3	-48.5	100.0	-10.0	11.5	1.1	2.4	-1.2	-0.6	2.1	1.9	11.7
WW Cross-Section	30.2	7.7	-6.2	-0.4	-4.5	-0.3	0.4	-12.5	18.6	6.3	-10.0	100.0	5.9	-18.1	1.3	3.7	-6.0	-11.6	3.1	-28.5
WW_varRF	-4.8	-0.2	0.0	0.4	-2.0	-1.3	-0.1	1.1	-12.5	17.5	11.5	5.9	100.0	-0.5	0.2	-2.0	-1.5	0.9	-0.1	4.8
tZ Cross-Section	6.8	2.0	-3.0	-0.2	-0.3	-1.6	-0.3	-3.5	1.4	-2.5	1.1	-18.1	-0.5	100.0	-0.2	1.3	-0.5	-4.2	0.5	-6.7
tbar CD Cross-Section	-3.3	3.6	-8.1	-0.1	1.2	-8.7	-3.2	0.4	0.3	-0.8	2.4	1.3	0.2	-0.2	-0.1	-11.8	-4.3	-2.2	-23.6	3.4
tbar HFm Cross-Section	-1.7	0.0	3.2	3.8	1.6	-11.0	-16.7	0.1	0.3	1.1	-1.2	3.7	-2.0	1.3	-11.8	100.0	-18.2	-88.9	-2.0	1.6
tbar HFm Cross-Section	14.2	1.8	-3.8	0.0	-0.5	0.0	0.6	-1.2	0.3	-3.6	-1.2	-12.5	1.1	-3.5	0.4	0.1	100.0	-0.1	-1.2	-14.2
tbar_light Cross-Section	3.4	1.6	-6.2	-0.8	-2.8	-6.4	-1.2	-2.2	2.2	-1.6	2.1	-11.6	0.9	-4.2	2.2	-18.9	-0.0	100.0	-2.7	-3.4
tbar_glu Cross-Section	0.2	1.1	-6.9	1.2	0.2	-0.8	-0.1	-0.1	0.2	0.9	1.9	2.1	-0.1	0.5	-23.6	-2.0	-1.8	-2.7	100.0	-0.1
$\mu_{t\bar{t}t\bar{t}}$	49.1	5.4	-12.4	0.2	-3.4	4.5	-4.7	-14.2	7.9	-6.7	11.7	-28.9	4.8	-6.7	3.4	-1.6	-14.0	-3.6	-0.2	49.1

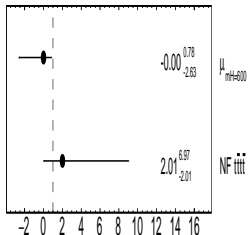


Realistic Asimov HT Fit - mH500 - CutAndCount, 50% tttt\_Xsec, Fix  
Fakes/ttW NFs, Free Float NF\_tttt=2

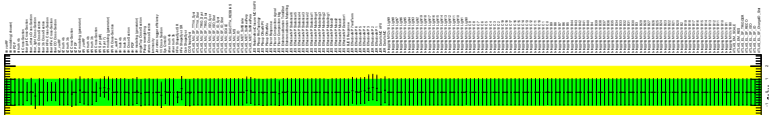




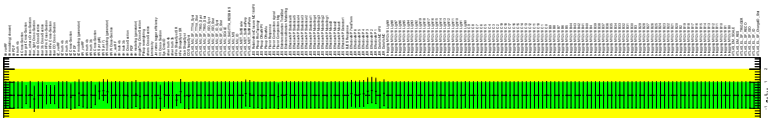
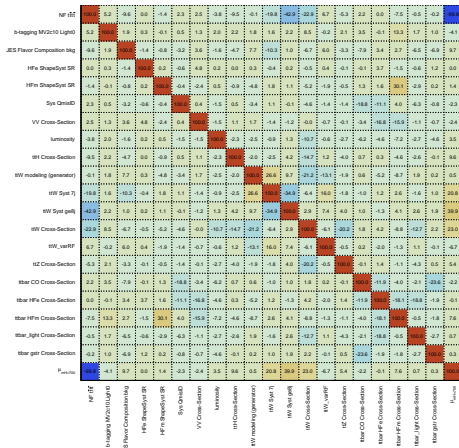
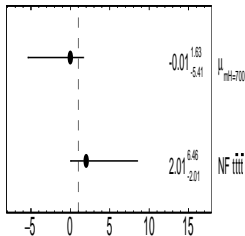
# Realistic Asimov HT Fit - mH600 - CutAndCount, 50% $t\bar{t}t\bar{t}$ Xsec, Fix Fakes/ $t\bar{t}W$ NFs, Free Float NF $t\bar{t}t\bar{t}=2$



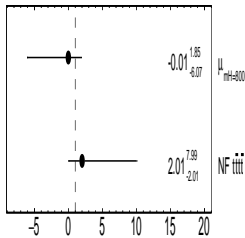
NP fit	-68.52	-4.7	-4.5	0.2	-1.9	1.4	1.3	-3.9	-6.8	3.1	-14.2	-46.8	-17.6	3.9	3.4	3.0	0.3	-7.7	-0.8	-0.3	-49.4
b-tagging MV2c10 Light0	4.7	-0.0	2.1	0.3	-0.1	0.5	1.3	2.0	2.4	1.7	1.9	2.1	8.0	0.3	2.3	3.5	0.1	13.4	1.7	1.0	-3.7
JES Flavor Composition bkg	-6.5	2.1	-0.0	-1.4	-0.8	-3.1	1.7	-0.2	6.3	1.9	-19.4	0.0	-7.2	8.4	1.6	-7.9	8.4	3.1	-6.5	6.3	
HFm ShapeSyst SR	0.2	0.3	-1.4	-100.0	0.3	-0.6	4.8	0.2	0.0	0.3	-0.4	0.1	-0.6	0.4	-0.2	-0.1	3.7	-1.0	-0.6	-0.2	
HFm ShapeSyst SR	-1.9	-0.1	-0.8	0.2	-100.0	-0.4	-2.4	0.5	-0.9	-4.7	1.9	1.3	-5.3	-1.9	-0.5	1.3	1.6	30.1	-2.9	0.2	
Sys Onia0	1.4	0.5	-3.1	-0.6	-2.4	-100.0	0.4	-1.4	0.6	3.5	1.4	0.2	-4.3	-1.5	-1.3	-18.8	-11.1	4.1	-6.3	-0.8	
VV Cross-Section	2.3	1.3	3.7	4.8	-2.4	0.4	-100.0	-1.5	1.1	1.6	-1.2	-1.2	0.1	-0.8	-0.1	-3.3	-16.8	-15.9	-1.1	-0.7	
Luminosity	2.9	3.0	-1.8	0.2	0.5	-1.4	1.5	-100.0	-2.4	3.4	-1.3	1.0	-11.2	-0.4	0.8	-4.3	4.6	-7.3	2.7	4.6	
WH Cross-Section	-4.8	2.4	-5.2	0.0	-0.8	0.6	1.1	-2.4	-100.0	-1.8	-3.5	3.4	-15.9	1.5	-4.3	0.7	0.3	-4.8	-2.6	0.1	
WW modeling (generator)	-3.1	1.7	7.9	0.3	-4.7	-0.5	1.6	-2.4	-1.8	-100.0	27.1	0.7	-20.2	-13.3	1.8	0.0	4.2	-4.4	1.9	0.3	
WW Syst J1	-14.2	1.9	-11.4	-0.4	1.1	1.4	1.2	-1.3	-3.5	27.3	-100.0	-36.1	-8.7	17.0	-3.4	-1.0	1.2	2.3	-1.6	1.0	
WW Syst g1g1	-46.8	2.1	0.0	0.1	1.3	0.2	-1.2	1.0	3.4	10.7	-36.1	-100.0	1.6	8.1	3.3	0.6	1.2	4.5	2.7	1.9	
WW Cross-Section	-17.6	4.9	-7.9	-0.5	-5.3	-4.3	0.1	-11.2	-15.9	-21.0	-4.7	1.6	-100.0	-5.3	-21.1	1.8	4.3	-9.3	-12.8	1.2	
WW_vetRF	3.9	-0.3	6.4	0.4	-1.9	-1.5	-0.8	-0.4	1.5	-13.3	17.0	8.1	-5.3	-100.0	-0.3	0.2	2.1	-1.1	1.1	-0.1	
HZ Cross-Section	-0.4	3.5	-0.6	-0.3	-0.0	-1.3	0.1	-3.0	-4.3	-1.9	-2.4	0.3	-0.1	-0.3	-0.0	-0.1	1.4	-1.0	-4.4	0.5	
tbar CO Cross-Section	3.0	3.5	-7.9	-0.1	1.3	-18.8	0.3	-4.3	0.7	0.5	-1.0	0.6	1.8	0.2	-0.1	-100.0	-11.9	-4.1	-2.2	-33.6	
tbar HFm Cross-Section	-0.3	-0.1	3.4	3.7	1.8	-11.1	-16.8	4.4	0.3	-5.2	1.2	1.2	4.3	-2.1	1.4	-11.9	-100.0	-18.8	-11.9	5.2	
tbar HFm Cross-Section	-7.7	13.4	2.5	-1.5	30.1	-4.1	-15.9	-7.3	-4.8	-4.4	2.2	4.5	-9.3	-1.1	-1.2	-4.1	-18.1	-100.0	-4.8	7.8	
tbar J1g1 Cross-Section	-0.8	-1.7	-4.5	-0.6	-2.3	-6.3	-1.1	-2.7	2.6	1.9	-1.6	-2.7	-13.8	1.1	-4.4	-2.2	-18.8	-0.4	-100.0	-2.7	
tbar g1g1 Cross-Section	-0.3	-1.0	-4.9	1.2	9.0	-0.8	0.7	-4.6	-0.1	0.2	1.0	1.9	2.0	-0.1	0.5	-23.6	1.9	-1.8	-2.7	-100.0	
$\mu_{t\bar{t}t\bar{t}}$	38.5	-3.7	6.5	-0.2	1.0	-1.4	-2.3	2.6	6.9	3.4	15.1	-44.0	17.7	-4.0	3.5	-2.9	0.2	7.0	1.0	4.4	



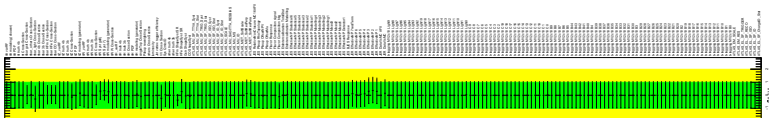
# Realistic Asimov HT Fit - mH700 - CutAndCount, 50% $t\bar{t}t\bar{t}$ Xsec, Fix Fakes/ $t\bar{t}W$ NFs, Free Float NF $t\bar{t}t\bar{t}=2$



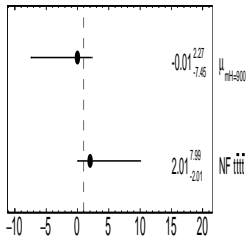
# Realistic Asimov HT Fit - mH800 - CutAndCount, 50% $t\bar{t}t\bar{t}$ Xsec, Fix Fakes/ $t\bar{t}W$ NFs, Free Float NF $t\bar{t}t\bar{t}=2$



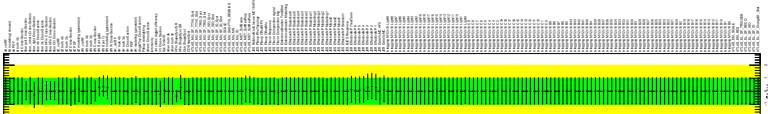
$NF_{t\bar{t}t\bar{t}}$	10.00	4.2	-10.1	-0.0	-1.7	2.1	1.8	-4.3	-10.1	-4.6	-14.5	-10.6	-25.1	5.4	4.6	2.3	1.1	-7.6	-1.7	-0.1	-4.9
b-tagging MV2c10 Light	6.2	100.0	1.8	0.3	-0.1	0.5	1.4	1.9	2.1	1.7	1.7	1.1	8.1	-0.2	2.0	3.5	0.0	13.3	1.7	1.0	-4.9
JES Flavor Composition bkg	-10.1	1.8	100.0	1.4	-0.2	-0.2	1.8	-4.2	4.8	1.6	-10.1	2.4	-4.2	8.1	-1.1	-8.0	5.3	2.1	-4.4	-0.3	10.1
HFm ShapeSyst SR	-0.0	0.3	-1.4	100.0	0.3	-0.6	4.8	0.2	0.0	0.3	-0.4	0.2	-0.6	0.4	-0.1	-0.1	3.7	-1.6	-0.6	1.2	0.0
HFm ShapeSyst SR	-1.7	-0.1	-0.7	0.2	100.0	-0.4	-2.4	0.5	-0.9	-4.8	1.8	1.3	-5.1	-1.9	-0.4	1.3	1.6	30.1	-2.9	0.2	1.7
Sys OniaD	2.1	0.5	-3.2	-0.6	-0.4	100.0	0.4	-1.5	0.5	3.5	1.3	0.3	-4.9	-1.5	-1.4	-18.8	-11.0	4.0	-6.3	-0.8	-2.1
VV Cross-Section	2.8	1.4	3.6	4.8	-2.4	0.4	100.0	-1.6	1.0	1.7	-1.3	-1.6	-0.1	-0.7	-0.3	-3.3	-16.8	-15.9	-1.1	-0.7	-2.8
Luminosity	-4.9	1.6	-1.6	0.2	0.5	-1.5	1.6	100.0	-2.3	3.5	-1.5	1.8	-10.2	0.5	3.6	-4.3	4.6	-7.2	2.6	4.6	3.8
HW Cross-Section	-10.1	-3.1	-4.6	0.0	-0.9	0.5	1.0	-2.3	100.0	-1.9	-2.9	5.5	-14.3	1.2	-3.8	0.7	0.2	-4.6	-2.5	-0.1	10.2
HW modeling (generator)	-1.6	-1.7	7.8	0.3	-4.9	-0.5	1.7	-0.2	1.9	100.0	27.0	1.6	-30.7	-13.2	1.9	0.5	4.2	-6.8	1.9	0.3	1.4
HW Syst J1	-14.5	-1.7	-10.8	-0.4	1.4	1.3	1.3	-1.0	-2.9	27.0	100.0	-30.3	-7.3	16.8	-1.9	-0.9	1.0	2.3	-1.5	-0.9	15.6
HW Syst g1g1	53.6	-1.1	2.4	0.2	1.2	-0.3	-1.6	1.8	5.5	8.6	-30.3	100.0	6.9	6.8	5.1	0.6	1.8	4.9	3.2	1.8	50.4
HW Cross-Section	-25.1	-1.1	-4.4	-0.5	-5.1	-4.5	-0.2	-10.5	-14.3	-30.8	-7.3	6.9	100.0	-5.9	-18.6	1.7	3.9	4.5	-12.3	-1.1	25.2
HW_vetRF	5.4	-0.2	6.1	0.4	-1.9	-1.5	-0.7	-0.5	1.2	-13.2	16.8	6.8	-5.9	100.0	-0.5	0.2	2.0	-1.1	1.0	-0.1	-5.4
HZ Cross-Section	-4.6	3.0	-3.1	-0.1	-0.4	-1.4	0.2	-3.0	-0.8	-1.9	-1.9	6.1	-19.4	0.5	10.0	-0.1	1.3	-1.0	-4.3	3.5	6.7
tbar CO Cross-Section	2.3	3.5	-4.0	-0.1	1.3	-18.8	0.3	-4.0	0.7	0.5	-0.9	0.6	1.7	0.2	-0.1	100.0	-11.8	-4.0	-2.2	-33.6	-2.2
tbar HFm Cross-Section	1.1	-10.2	3.3	3.7	1.8	-19.4	16.8	4.0	0.3	-0.2	1.0	1.8	3.0	2.0	1.3	-11.8	100.0	-18.9	-18.9	-0.2	-5.2
tbar HFm Cross-Section	-7.6	-13.3	2.8	-1.5	30.1	4.0	-15.9	-7.3	-4.5	4.6	-1.2	-1.0	-4.0	-18.2	100.0	-0.4	-1.8	7.8	1.9	1.9	1.9
tbar J1g1 Cross-Section	-1.7	-1.7	-4.4	-0.6	-2.3	-6.3	-1.1	-2.6	2.5	1.9	-1.5	-3.2	-13.3	1.0	-4.5	-2.2	-18.9	-0.4	100.0	-0.7	1.9
tbar g1g1 Cross-Section	-0.1	-1.0	-4.9	1.2	0.0	-0.8	-0.7	-4.6	-0.1	0.2	0.9	1.8	2.1	-0.1	0.5	-23.6	2.0	-1.8	-2.7	100.0	0.2
$\mu_{mH800}$	-14.7	-4.9	10.1	0.0	1.7	-2.1	2.8	3.8	10.2	1.4	15.6	30.4	25.1	-6.4	8.7	-2.2	-1.2	7.8	1.9	1.3	100.0



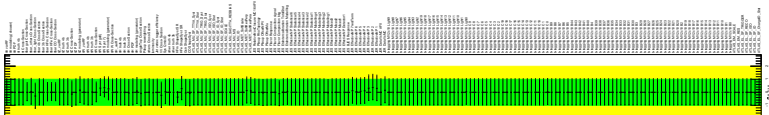
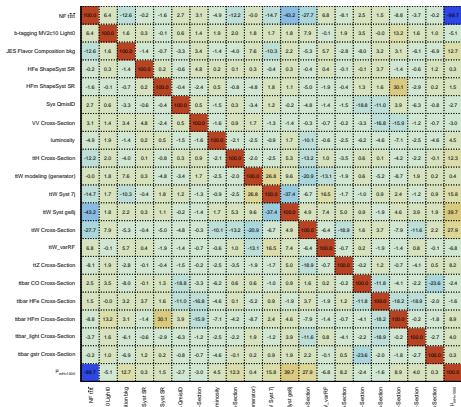
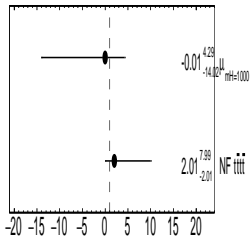
# Realistic Asimov HT Fit - mH900 - CutAndCount, 50% $t\bar{t}t\bar{t}$ Xsec, Fix Fakes/ $t\bar{t}W$ NFs, Free Float NF $t\bar{t}t\bar{t}=2$



NF $t\bar{t}$	6.7	-13.2	-0.2	-1.5	2.5	1.2	-4.8	-11.9	4.2	-16.3	-32.6	-38.6	6.7	-1.6	2.8	1.4	-4.1	-3.8	0.0	-49.7
b-tagging MV2c10 Light0	6.7	0.0	1.6	0.3	-0.1	0.6	1.4	1.9	2.0	1.8	0.8	7.7	-0.1	1.9	3.6	0.0	13.1	1.5	-1.1	-5.4
JES Flavor Composition bkg	-13.2	0.0	1.6	0.3	-0.1	0.6	1.4	1.9	2.0	1.8	0.8	7.7	-0.1	1.9	3.6	0.0	13.1	1.5	-1.1	-5.4
HFm ShapeSyst bkg	-0.2	0.3	-1.4	100.0	0.0	-0.6	4.8	0.2	0.1	0.3	-0.4	0.3	-0.4	0.4	-0.1	-0.1	3.7	-1.4	-0.6	1.2
HFm ShapeSyst SR	-1.5	-0.1	-0.7	0.2	100.0	-0.4	-2.4	0.5	-0.9	-4.8	1.8	1.2	-5.4	-1.9	-0.5	1.3	1.6	33.1	-2.9	0.3
Sys OniaD	2.5	0.6	-3.2	-0.6	-0.4	100.0	0.5	-1.5	0.4	3.4	1.2	-0.5	-4.7	-1.4	-1.4	-18.8	-11.0	4.0	-6.3	-0.8
VV Cross-Section	3.2	1.4	3.4	4.8	-2.4	0.5	100.0	-1.6	0.9	1.7	-1.4	-1.7	-0.4	-0.7	-0.3	-3.3	-16.8	-15.9	-1.2	-0.7
Luminosity	-4.8	0.6	-1.4	0.2	0.5	-1.5	-1.6	100.0	-2.1	0.5	-0.9	0.1	-18.0	-0.6	0.6	-4.3	4.6	-7.1	2.5	4.6
HW Cross-Section	-11.9	2.0	-4.1	-0.1	-0.8	0.4	0.9	-2.1	100.0	-2.0	-2.4	6.3	-13.1	1.0	-3.6	0.6	0.1	-4.1	-2.2	-0.1
HW modeling (generator)	-6.2	0.8	7.7	0.3	-4.8	-0.4	1.7	-0.7	-2.0	100.0	26.0	1.3	-26.7	-13.1	1.9	0.6	4.2	-6.8	1.9	0.3
HW Syst $\eta$	-16.3	-1.5	-10.2	0.4	1.2	1.2	1.4	-0.2	2.4	26.8	100.0	-30.6	-6.0	-16.4	-1.6	-1.0	0.9	2.3	-1.1	0.9
HW Syst gln	52.6	0.8	3.4	0.3	1.2	-0.5	-1.7	2.1	6.3	9.2	-30.6	100.0	8.7	6.2	5.5	0.5	2.0	5.1	4.2	1.7
HW Cross-Section	-28.0	7.7	-5.2	-0.4	-5.0	-4.7	0.4	-10.0	-13.1	-50.6	-6.0	8.7	100.0	-4.5	-18.8	1.5	3.7	-7.9	-11.4	0.1
HW_varRF	6.7	-0.1	5.8	0.4	-1.8	-1.4	-0.7	-0.6	1.0	-13.1	16.4	6.2	-6.5	100.0	-0.7	0.2	2.0	-1.4	0.8	-0.1
HZ Cross-Section	7.6	1.6	-0.8	-0.1	-0.1	-1.4	0.2	-3.0	-0.6	-1.9	-1.4	6.5	-18.4	-0.7	-10.0	-0.1	1.3	-0.6	-4.1	0.5
tbar CO Cross-Section	2.6	3.6	-0.0	-0.1	1.3	-18.8	-0.3	-4.0	0.6	0.6	-1.0	0.5	1.5	0.2	-0.1	100.0	-11.8	-4.1	-2.2	-33.6
tbar HFm Cross-Section	1.4	-0.2	3.3	3.7	1.8	-19.5	-16.8	-4.0	8.1	-2.2	0.9	2.0	3.1	-2.0	3.1	-11.8	100.0	-18.9	-1.9	-4.4
tbar HFm Cross-Section	-4.1	13.2	3.0	1.4	30.1	4.0	-15.9	-7.1	-4.3	-4.6	2.5	5.1	-7.4	-1.4	-4.1	-18.2	100.0	-0.2	-1.8	8.3
tbar Jght Cross-Section	-0.8	1.5	-4.1	-0.6	-2.1	-6.3	-1.2	-2.5	-2.2	1.9	-1.1	4.2	-11.4	0.8	-4.1	-2.2	-18.9	-0.2	100.0	-0.7
tbar gln Cross-Section	0.0	-1.5	-6.8	1.2	0.0	-0.8	-0.7	-4.6	-0.1	0.2	0.9	1.7	2.1	-0.1	0.5	-23.6	1.9	-1.8	-2.7	100.0
$\mu_{mH900}$	-0.6	12.2	0.2	1.4	-2.5	-1.1	4.5	12.0	0.6	17.4	-49.5	29.6	-6.7	7.7	-2.5	-1.4	8.3	4.1	-1.1	100.0



# Realistic Asimov HT Fit - mH1000 - CutAndCount, 50% tttt\_Xsec, Fix Fakes/ttW NFs, Free Float NF\_tttt=2



**Backup**