

# Recent Work

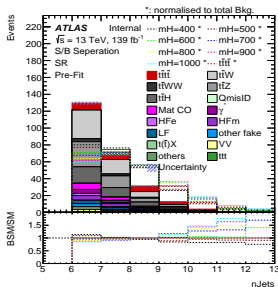
MENG-JU TSAI

May 6, 2020

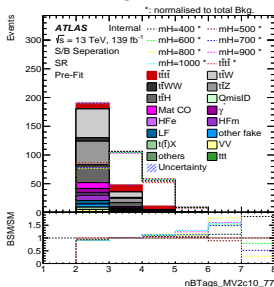
## Signal/Background comparsion

# Jet multiplicities

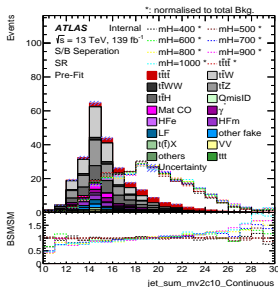
## SR-nJets



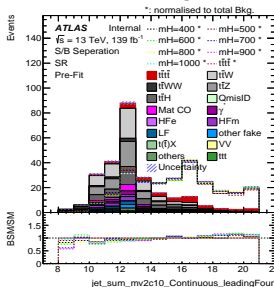
## SR-nBTags-MV2c10-77



## SR-jet-sum-mv2c10-Continuous

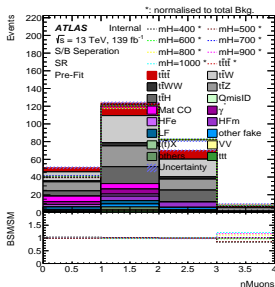


## SR-jet-sum-mv2c10-Continuous-leadingFour

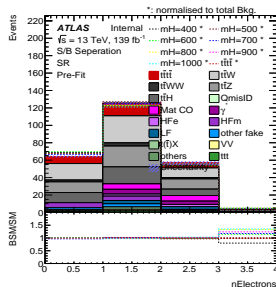


# Lep multiplicities and MET

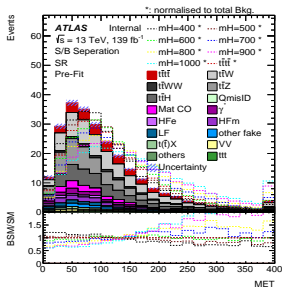
## SR-nMuons



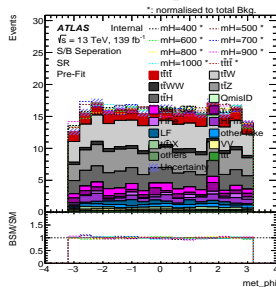
## SR-nElectrons



## SR-met-met

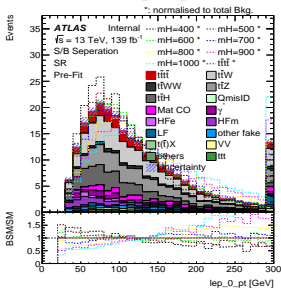


## SR-met-phi

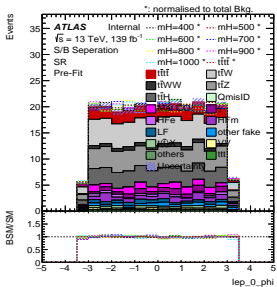


## Lepton0 kinematics

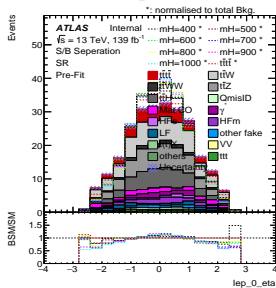
SR-lep-0-pt



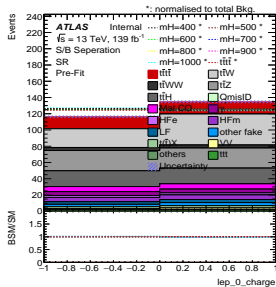
SR-lep-0-phi



SR-lep-0-eta

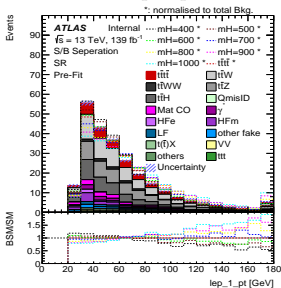


SR-lep-0-charge

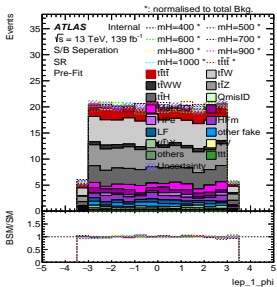


## Lepton1 kinematics

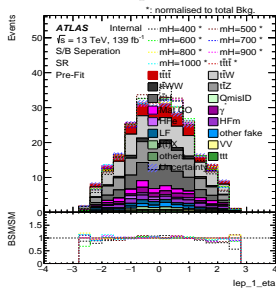
SR-lep-1-pt



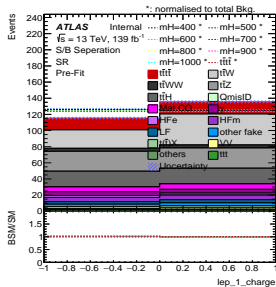
SR-lep-1-phi



SR-lep-1-eta

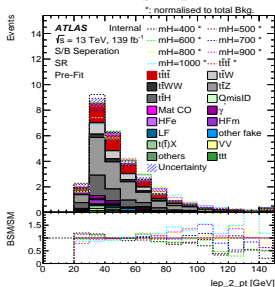


SR-lep-1-charge

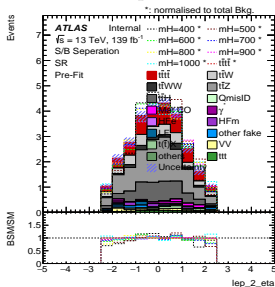


# Lepton2 kinematics

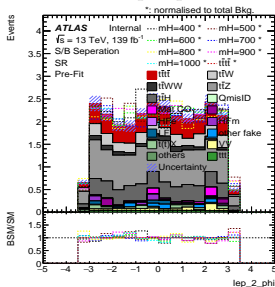
## SR-lep-2-pt



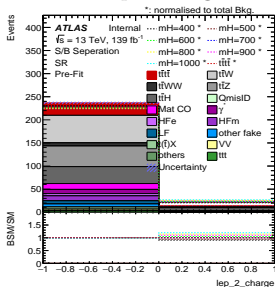
## SR-lep-2-eta



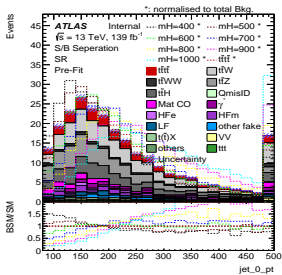
## SR-lep-2-phi



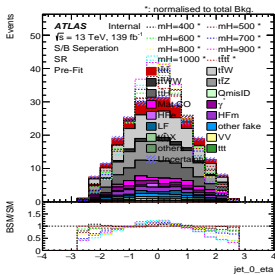
## SR-lep-2-charge



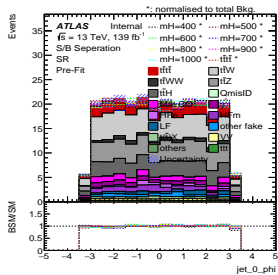
SR-jet-0-pt



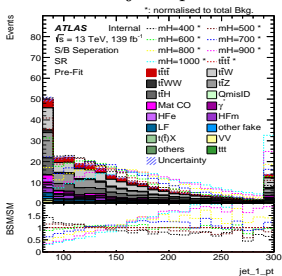
SR-jet-0-eta



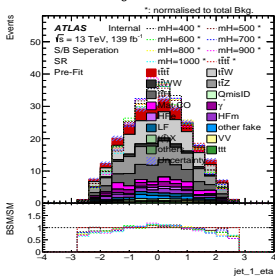
SR-jet-0-phi



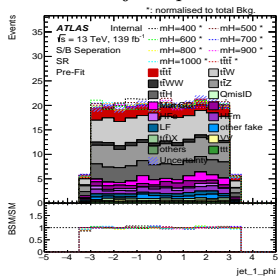
SR-jet-1-pt



SR-jet-1-eta

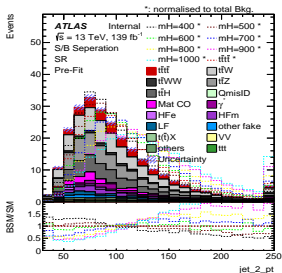


SR-jet-1-phi

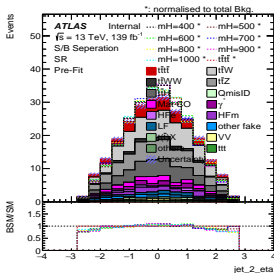




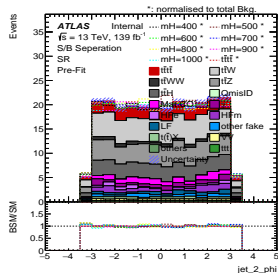
## SR-jet-2-pt



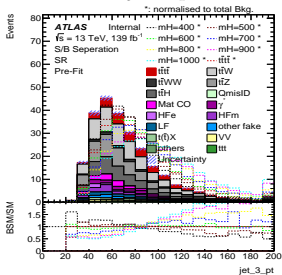
## SR-jet-2-eta



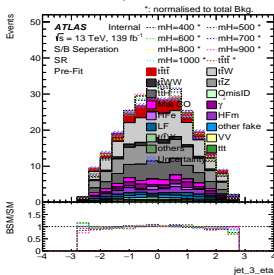
## SR-jet-2-phi



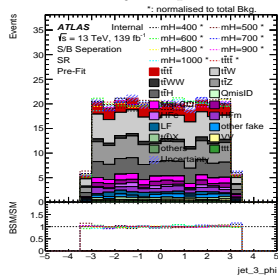
## SR-jet-3-pt



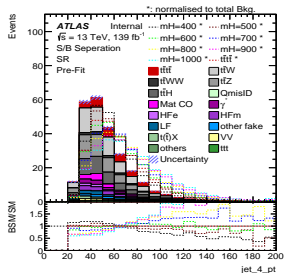
## SR-jet-3-eta



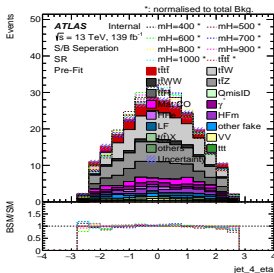
## SR-jet-3-phi



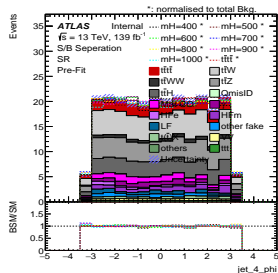
## SR-jet-4-pt



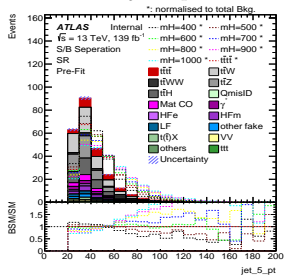
## SR-jet-4-eta



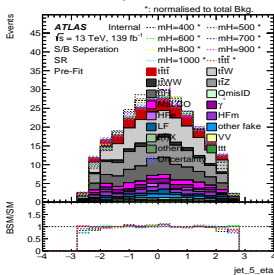
## SR-jet-4-phi



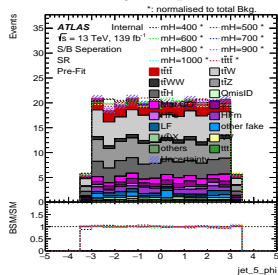
## SR-jet-5-pt



## SR-jet-5-eta

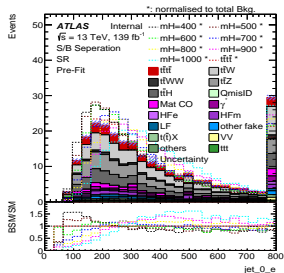


## SR-jet-5-phi

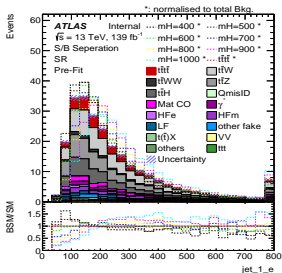


# Energy of Jets

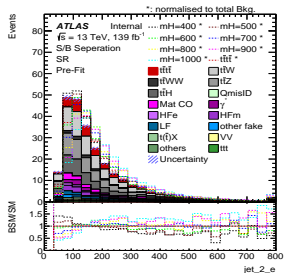
SR-jet-0-e



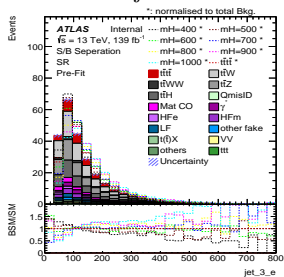
SR-jet-1-e



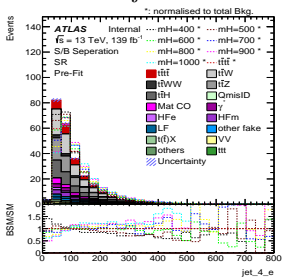
SR-jet-2-e



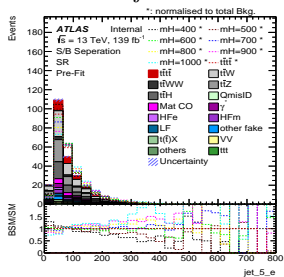
SR-jet-3-e



SR-jet-4-e

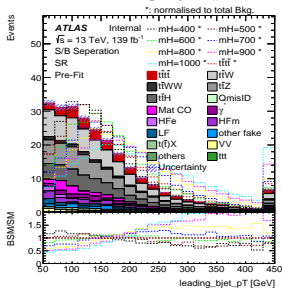


SR-jet-5-e

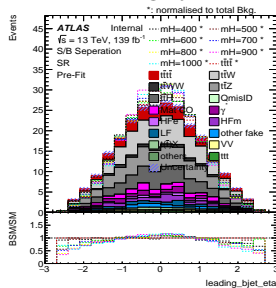


# b-jets kinematics and lowest jet pT

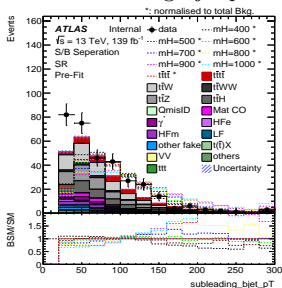
## SR-leading-bjet-pT



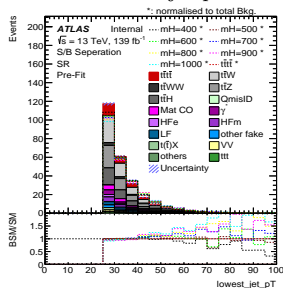
## SR-leading-bjet-eta



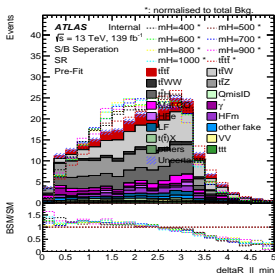
## SR-subleading-bjet-pT



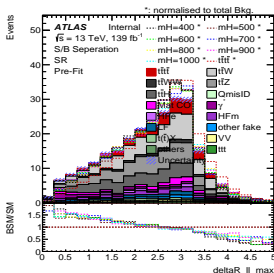
## SR-lowest-jet-pT



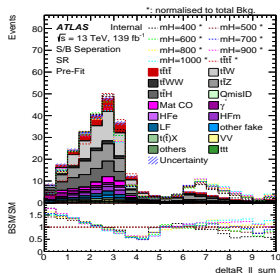
SR-deltaR-ll-min



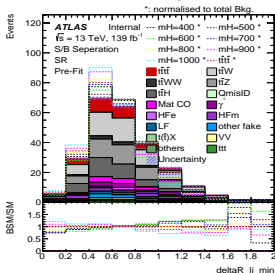
SR-deltaR-ll-max



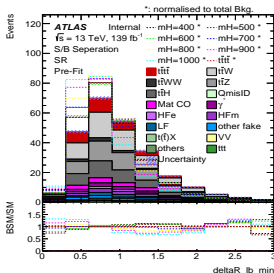
SR-deltaR-ll-sum



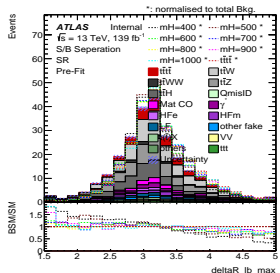
SR-deltaR-lj-min



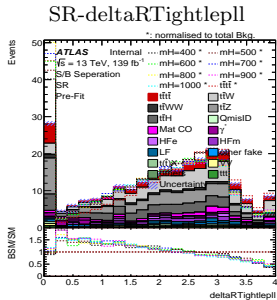
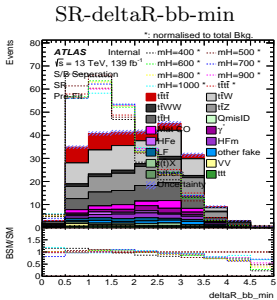
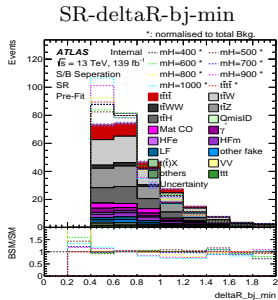
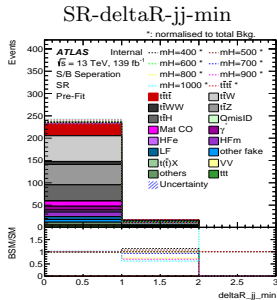
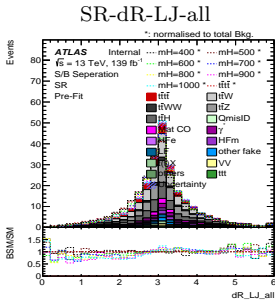
SR-deltaR-lb-min



SR-deltaR-lb-max

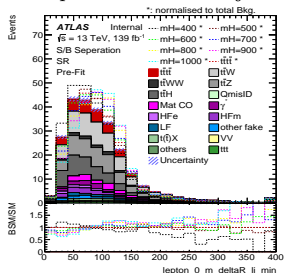


# Delta R and delta Eta

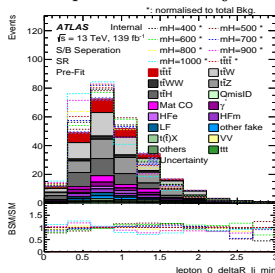


SR-lepton-0-m-deltaR-lb-

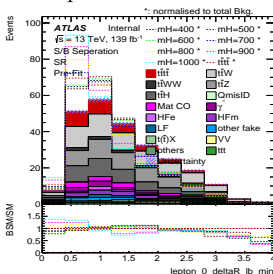
SR-lepton-0-m-deltaR-lj-minmin



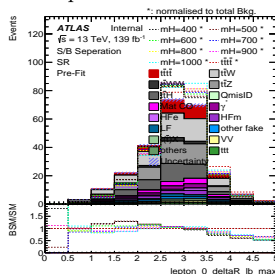
SR-lepton-0-deltaR-lj-min



SR-lepton-0-deltaR-lb-min



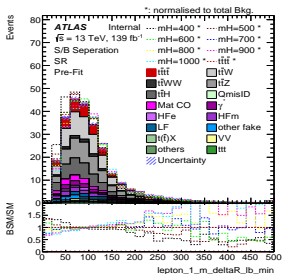
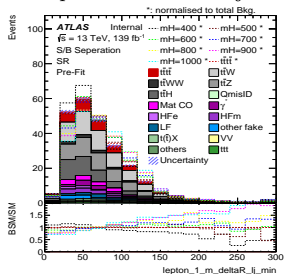
SR-lepton-0-deltaR-lb-max



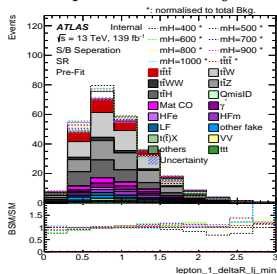
# Delta R of lep1 and objects

SR-lepton-1-m-deltaR-lb-

SR-lepton-1-m-deltaR-lj-minmin

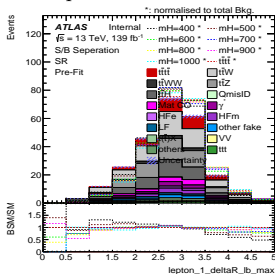
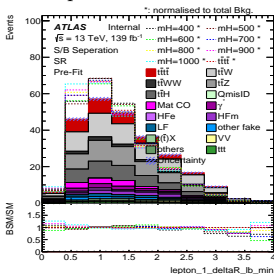


SR-lepton-1-deltaR-lj-min



SR-lepton-1-deltaR-lb-min

SR-lepton-1-deltaR-lb-max

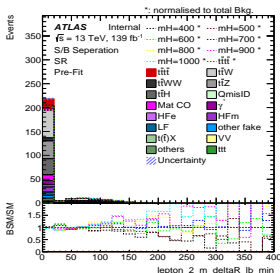
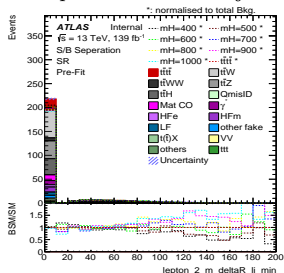




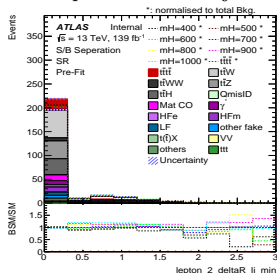
# Delta R of lep2 and objects

## SR-lepton-2-m-deltaR-lb-

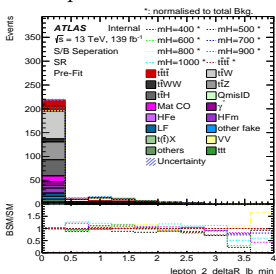
### SR-lepton-2-m-deltaR-lj-minmin



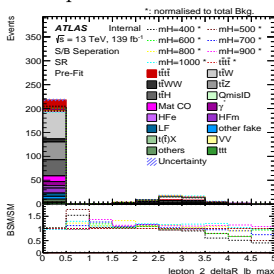
### SR-lepton-2-deltaR-lj-min



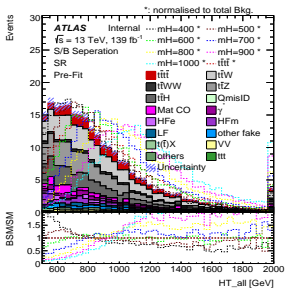
### SR-lepton-2-deltaR-lb-min



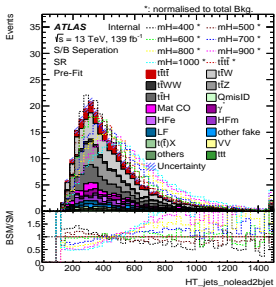
### SR-lepton-2-deltaR-lb-max



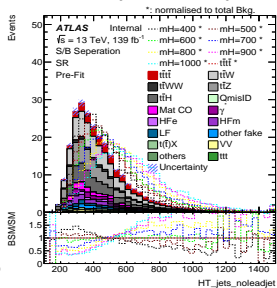
SR-HT-all



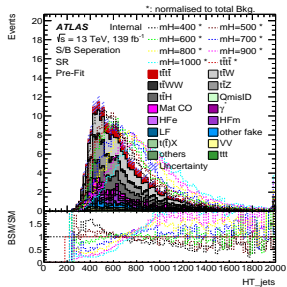
SR-HT-jets-nolead2bjet



SR-HT-jets-noleadjet

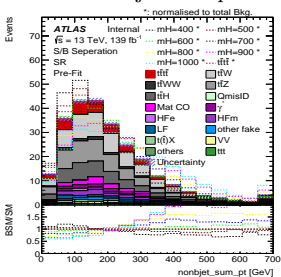


SR-HT-jets

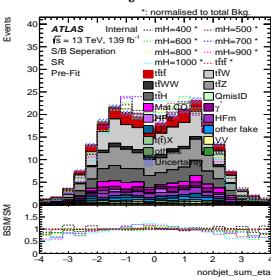


# Combination without bjets

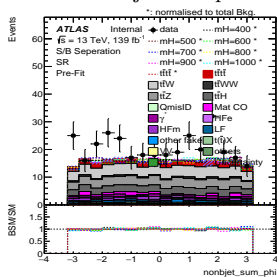
## SR-nonbjet-sum-pt



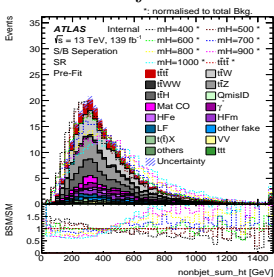
## SR-nonbjet-sum-eta



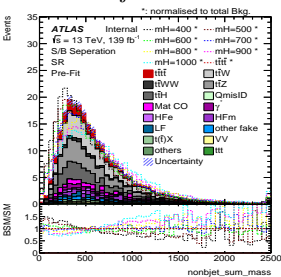
## SR-nonbjet-sum-phi



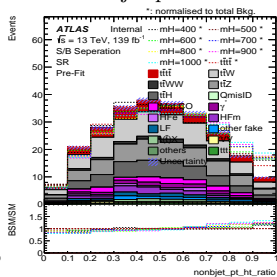
## SR-nonbjet-sum-ht



## SR-nonbjet-sum-mass

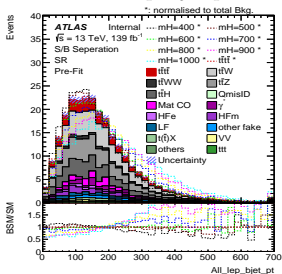


## SR-nonbjet-pt-ht-ratio

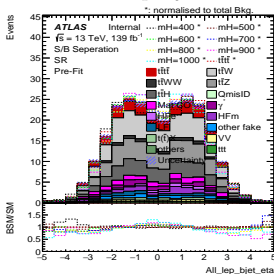


# Combination of leptons and bjets

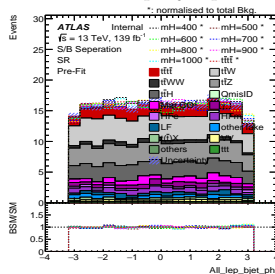
## SR-All-lep-bjet-pt



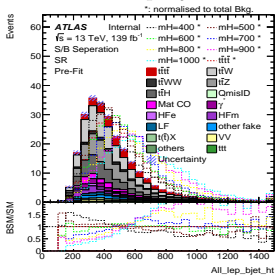
## SR-All-lep-bjet-eta



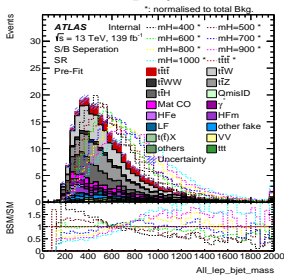
## SR-All-lep-bjet-phi



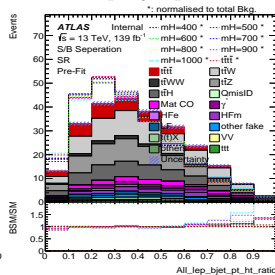
## SR-All-lep-bjet-ht



## SR-All-lep-bjet-mass

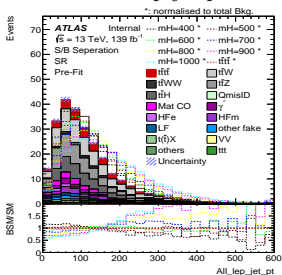


## SR-All-lep-bjet-pt-ht-ratio

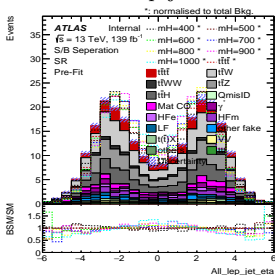


## Combination of leptons and jets

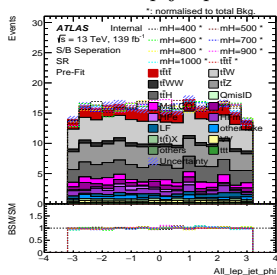
SR-All-lep-jet-pt



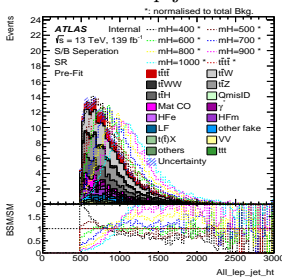
SR-All-lep-jet-eta



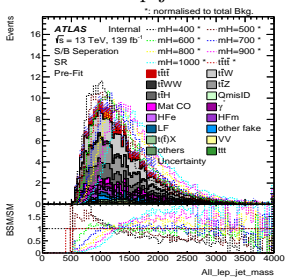
SR-All-lep-jet-phi



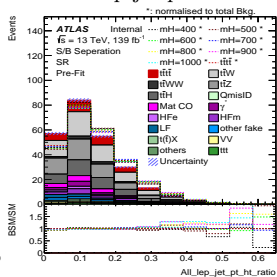
SR-All-lep-jet-ht



SR-All-lep-jet-mass

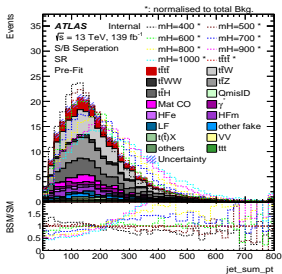


SR-All-lep-jet-pt-ht-ratio

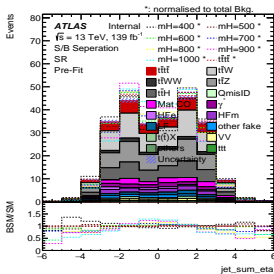


# Combination of jets

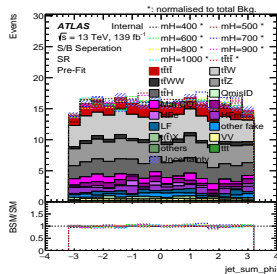
## SR-jet-sum-pt



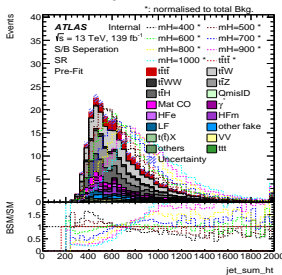
## SR-jet-sum-eta



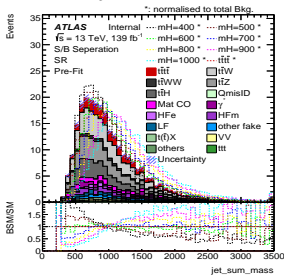
## SR-jet-sum-phi



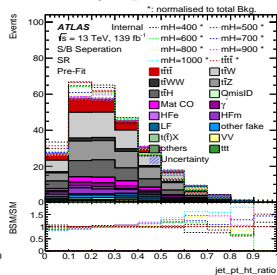
## SR-jet-sum-ht



## SR-jet-sum-mass

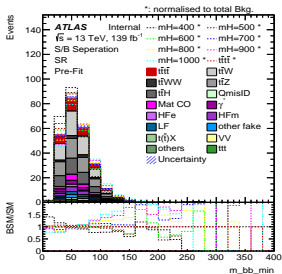


## SR-jet-pt-ht-ratio

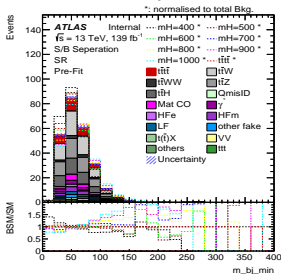


# Combination of jets

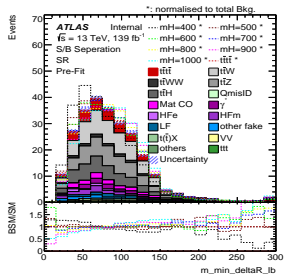
SR-m-bb-min



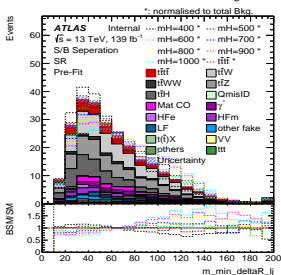
SR-m-bj-min



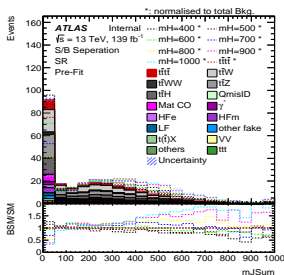
SR-m-min-deltaR-lb



SR-m-min-deltaR-lj

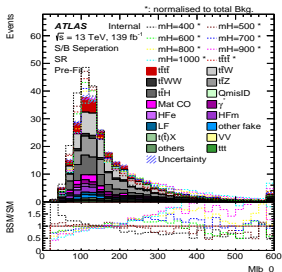


SR-mJSum

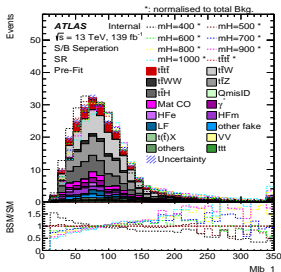


# Combination of lep and bjets

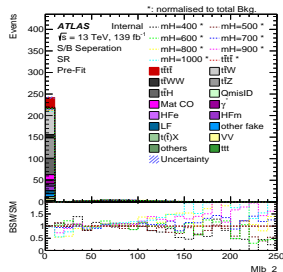
SR-M1b-0



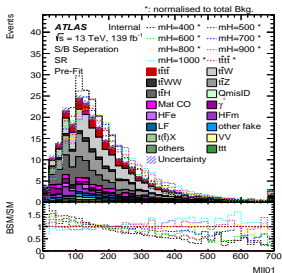
SR-M1b-1



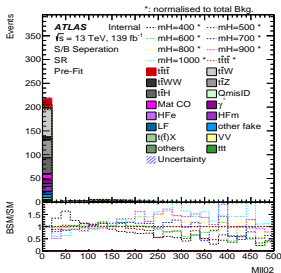
SR-M1b-2



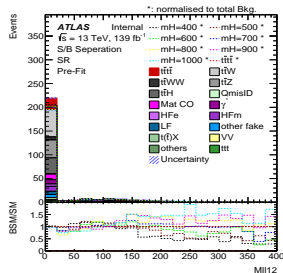
SR-M1l01



SR-M1l02



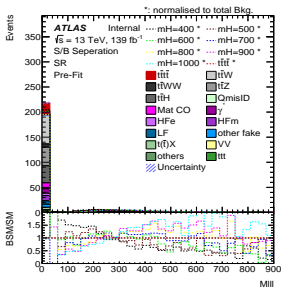
SR-M1l12



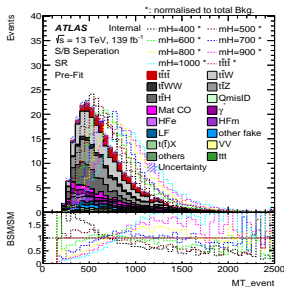


# Combination of lep and MT

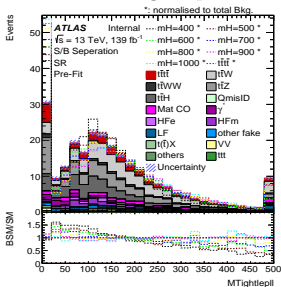
SR-Mill



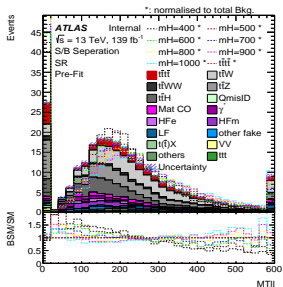
SR-MT-event



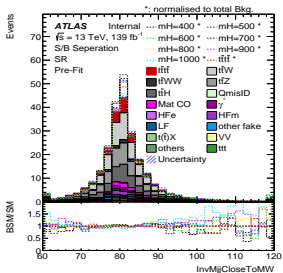
SR-MTlightlepII



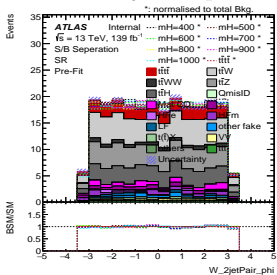
SR-MTII



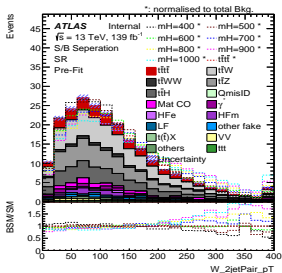
SR-InvMjjCloseToMW



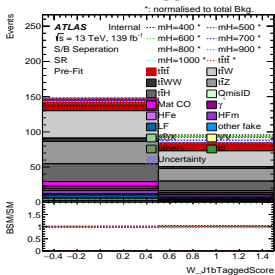
SR-W-2jetPair-phi



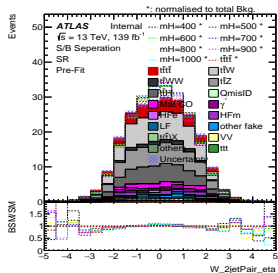
SR-W-2jetPair-pT



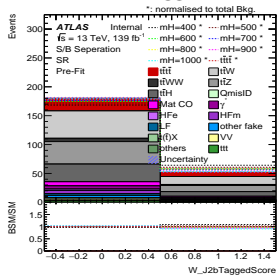
SR-W-J1bTaggedScore



SR-W-2jetPair-eta

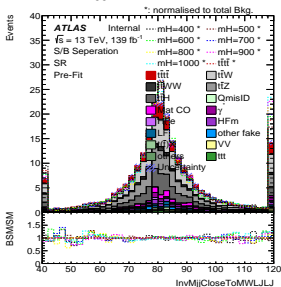


SR-W-J2bTaggedScore

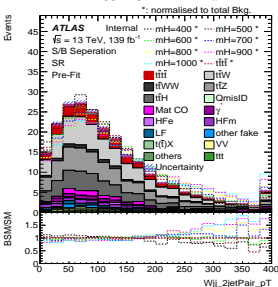


# $m_2$ light jets close to $m_W$

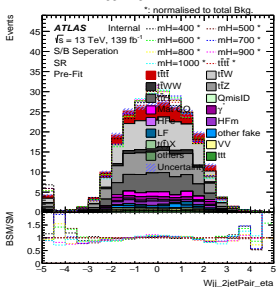
## SR-InvMjjCloseToMWLJLJ



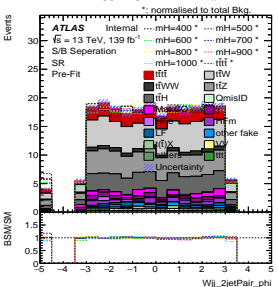
## SR-Wjj-2jetPair-pT



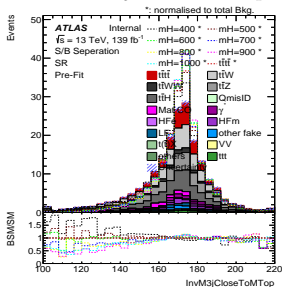
## SR-Wjj-2jetPair-eta



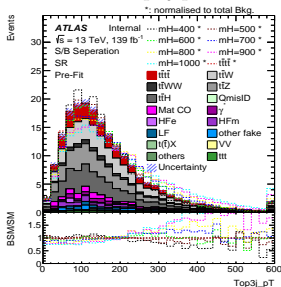
## SR-Wjj-2jetPair-phi



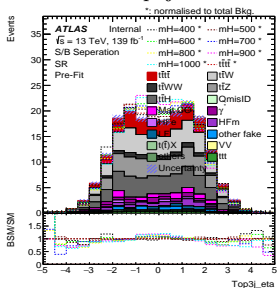
SR-InvM3jCloseToMTop



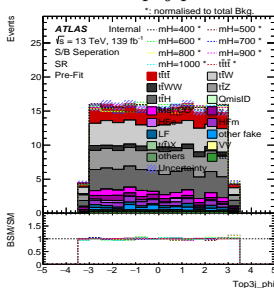
SR-Top3j-pT



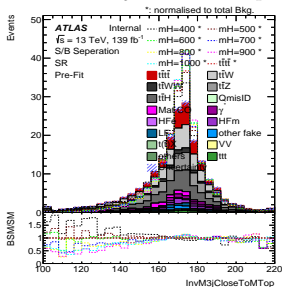
SR-Top3j-eta



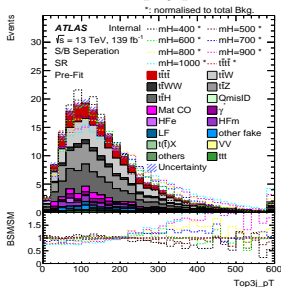
SR-Top3j-phi



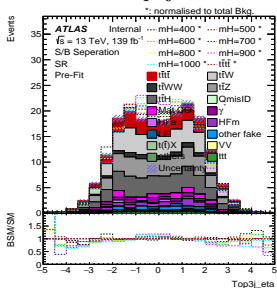
SR-InvM3jCloseToMTop



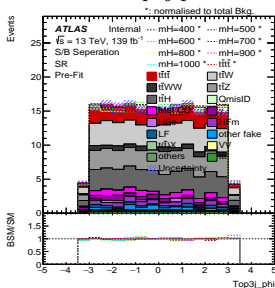
SR-Top3j-pT



SR-Top3j-eta



SR-Top3j-phi





## Backup