Work Status

Maosen Zhou 1 Feb, 2016

Object definitons

Electron:

- > pt>10GeV;
- > 0<|eta|<1.37,1.52<|eta|<2.47;
- > ID, Isolation, Vertex

≻Muon:

- > pt>10GeV;
- > |eta|<2.5;

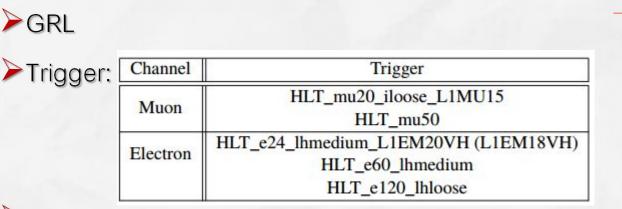
> ID, Isolation, Vertex

≽Jet:

> pt>25GeV;

- > |eta|<2.5
- > |JVT|, Btag tool

Event selection



Select leptons and jets following object definitions

➢overlap removal

two same sign leptons(no additional leptons), more than 4 jets

>pt_leading_lepton>25GeV, pt_sub_lepton>10GeV

reject any events with b jets

≻m_ljjljj<300GeV

further cuts

basic selection

HWW framework(ongoing)

- Trying to run on WW bkg, like W+jets, Z+jets, QCD, etc.
- To see what will happen after
 - > basic selection
 - > event selection

Others, to do list

For pheno paper, updated the signal samples and plots

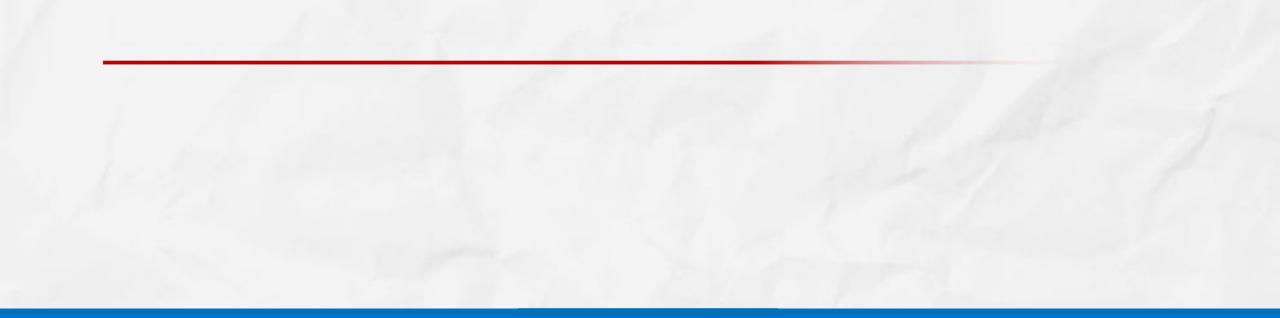
QS: had looked at fake seeds. start to separate seeds into PPP, PSS and SSS to study their properies

Finished 10 shifts till now. Hope could be promoted..

Focus on HWW framework, try to have a look at all the existing bkg samples
ID missing bkg, like DPS

 \triangleright For pheno paper, mva once X+4j is done.

▶...





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weekly

at least one lepton with Pt>20GeV passing Medium ID;

at least one large coned jet with R=1.0 or small-coned jet with R=0.4 reconstruted by anti-kt algorithm with Pt>200GeV;

bobjects which do not satify one of the following requriments are removed from the event:

- track-particles associated with reconstructed electrons;
- track-particles associated with reconstructed muons;
- track-particles associated with R=0.4 jets with Pt>15GeV and eta <2.8
- track-paticles associated with R=1.0 jets with Pt>200GeV and eta<2.8

origin from EXOT11 derivation!

Object definitons: Muons

Three categories are created for letptons:

- signal: to be used in the final analysis;
- veto: reject events that would belong to other final state topologies with more than two leptons
- QCD: evaluate the shape of the multi-jet background which contains a mis-identified lepton

	Muons			
	Pre-Selection	Veto	Signal	QCD
pT threshold	7 GeV	25 GeV	25 GeV	25 GeV
$ \eta $	< 3.0	< 2.5	< 2.5	< 2.5
Identification	Loose	Loose	Medium	Medium
Isolation	-	-	Tight	fail Tight
$ d_0/\sigma(d_0) $	- 7	-	< 3	> 3
$ z_0 \sin \theta $	-		< 0.5 mm	< 0.5 mm

too high PT, lower to 15GeV?

Overlap removal:

1) muon is discarded: dR(small-R jet, muon)<0.4 && #tracks of small-R jet>2

2) jet is discarded: dR(small-R jet, muon)<0.4 && #tracks of small-R jet<=2

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H->hh->WW*WW*

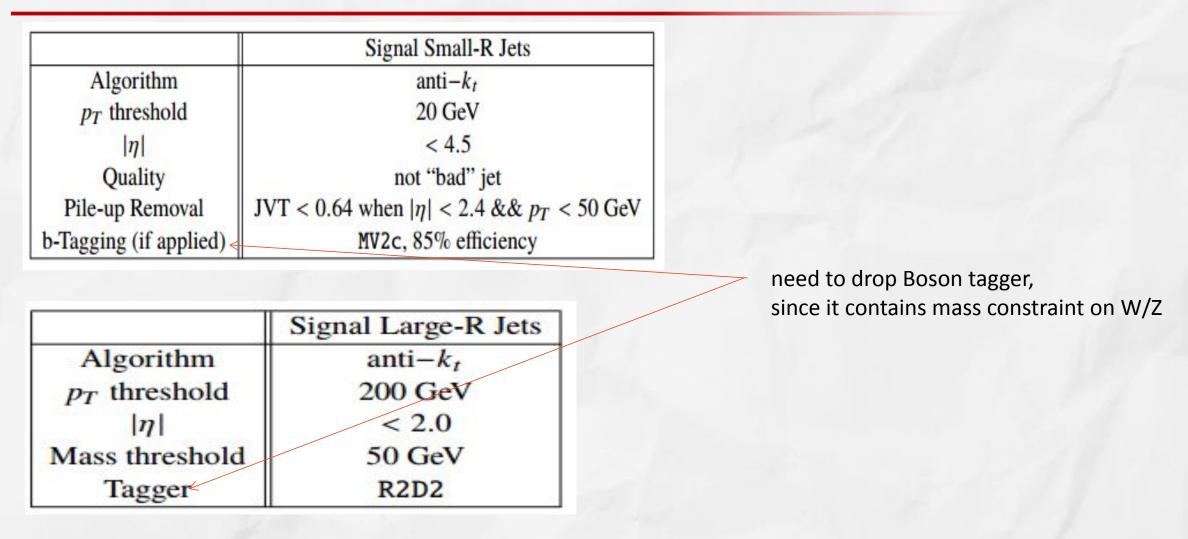
Electrons

	Electrons				
	Pre-Selection	Veto	Signal	QCD	
p_T threshold	7 GeV	25 GeV	25 GeV	25 GeV	
$ \eta $	< 2.47	< 2.47 ∉ [1.37, 1.52]			
Identification	LooseLH	LooseLH	TightLH	MediumLH	
			(MediumLH for $E_{\rm T} > 300 {\rm GeV}$)	and fail TightLH	
Isolation	-	-	Tight	Medium and fail Tight	
$ d_0/\sigma(d_0)^{BL} $	-		< 5	< 5	
$ z_0 \sin \theta $	-	-	< 0.5 mm	< 0.5 mm	

Overlap removal:

1) electron is discarded: share ID tracks with pre-slected muons

2) electron is discarded: 0.2<dR(small-R jet, electron)<0.4



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MissingET

MET_Core_AntiKt4EMTopo with the MissingETAssociationMap using the METMaker tool

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Event selection

≻Trigger:

Channel	Trigger		
Muon	HLT_mu20_iloose_L1MU15		
	HLT_mu50		
Electron HLT_	HLT_e24_lhmedium_L1EM20VH (L1EM18VH)		
	HLT_e60_lhmedium		
	HLT_e120_lhloose		

Basic cuts: pT(j)>25GeV, pt(l)>15GeV

two same leptons(no additional leptons?), more than 4 jets

reject any events with b jets

≻m_ljjljj<300GeV

➢ further cuts