

RA4 study status report

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Event selection in RA4 (Jet+MET+Muon)

Exactly one good muon,
 zero electrons,
 ≥ 3 jets, three leading jets have $p_T \geq 50$,
 $MET > 100$

Event selection in RA4 (Jet+MET+Electron)

passes single electron trigger
 no good muons
 exactly one good electron
 ≥ 3 good jets
 $MET > 100$

Reference Analysis 4 Jet+Met+Muon

exactly one good muon	1415
zero electrons	1322
≥ 3 jets	737
$MET > 100$	452

Reference Analysis 4 Jet+Met+Electron

single electron trigger	5394
no good muons	4857
exactly one good electron	807
≥ 3 good jets	470
$MET > 100$	320

Muon selection in RA4 (Jet+MET+Muon)

Quantity	PAT Object and Member Function	Cut
Mu type	pat::Muon => isGood("GlobalMuonPromptTight")	GlobalMuonPromptTight
p_T	pat::Muon => pt()	≥ 10 <u>GeV</u>
abs(eta)	pat::Muon => eta()	≤ 2.1
chi ² /dof	pat::Muon => combinedMuon()->chi2(), combinedMuon()->ndof()	< 10
abs(d_0)	pat::Muon => track()->d0 *	< 0.2 cm
N hits	pat::Muon => track()->numvalhits()	≥ 11
Trk. Isolation	pat::Muon => trackIso()	< 6 <u>GeV</u>
ECal Isolation	pat::Muon => ecallso()	< 6 <u>GeV</u>
HCal Isolation	pat::Muon => hcallso()	< 6 <u>GeV</u>

Muon cutflow	1.pt	2.pt
all	6003	3608
has_trk	5898	3547
hits	5540	3193
eta	5122	2809
is_combined	3728	1314
pt	2715	679
tight	2592	643
chi2/ndof	2592	643
bc_d0	2587	643
isoR03_trk	1526	277
isoR03_hcal	1489	273
isoR03_ecal	1438	259

Reference Analysis 4 Jet+Met+Muon

exactly one good muon	1415	
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isoR03_trk	1526	277
isoR03_hcal	1489	273
isoR03_ecal	1438	259
zero electrons	1322	
Electron cutflow	1.pt	2.pt
all	7792	4701
has_trk	7792	4701
eta	7771	4688
pt	4704	1414
bc_d0	4698	1413
comb_reliso	734	212
tight	526	137
≥ 3 jets	737	
Jet cutflow	1.pt	2.pt
all	10000	9999
eta	9661	9497
pt	9550	9163
hadfrac	9029	8401
MET > 100	452	

Event selection in RA4 (Jet+MET+Muon)

Exactly one muon,
 zero electrons,
 ≥ 3 jets, three leading jets have $p_T \geq 50$,
 MET > 100

- Other Signal points and background
- Muon and Electron study (Aranyi Attila)
- $t\bar{t}$ background (Veszprémi Viktor & Kálvin Sándor)

Event selection in RA4 (Jet+MET+Muon)

	HUN		UCSB
	202686	100	100
Exactly one muon	19889	9,81	9,82
zero electrons	18762	9,26	9,39
≥ 3 jets	10685	5,27	5,46
MET > 100	7043	3,47	3,62

Event selection in RA4 (Jet+MET+Electron)

	HUN		CU
	202686	100	100
electron trigger	109629	54,08	54,1
no good muons	98539	48,62	48,6
exactly one electron	16405	8,09	8,10
≥ 3 jets	9564	4,72	4,67
MET > 100	6305	3,11	3,07

http://www.grid.kfki.hu/twiki/pub/CMS/HUSUSYRA/RA4_LM0_test.txt

20/Oct. - 20/Dec.

- Aranyi Attila 12-13 (2 cancelled)
- Veszprémi Viktor 12-13
- Krajczár Krisztián ?