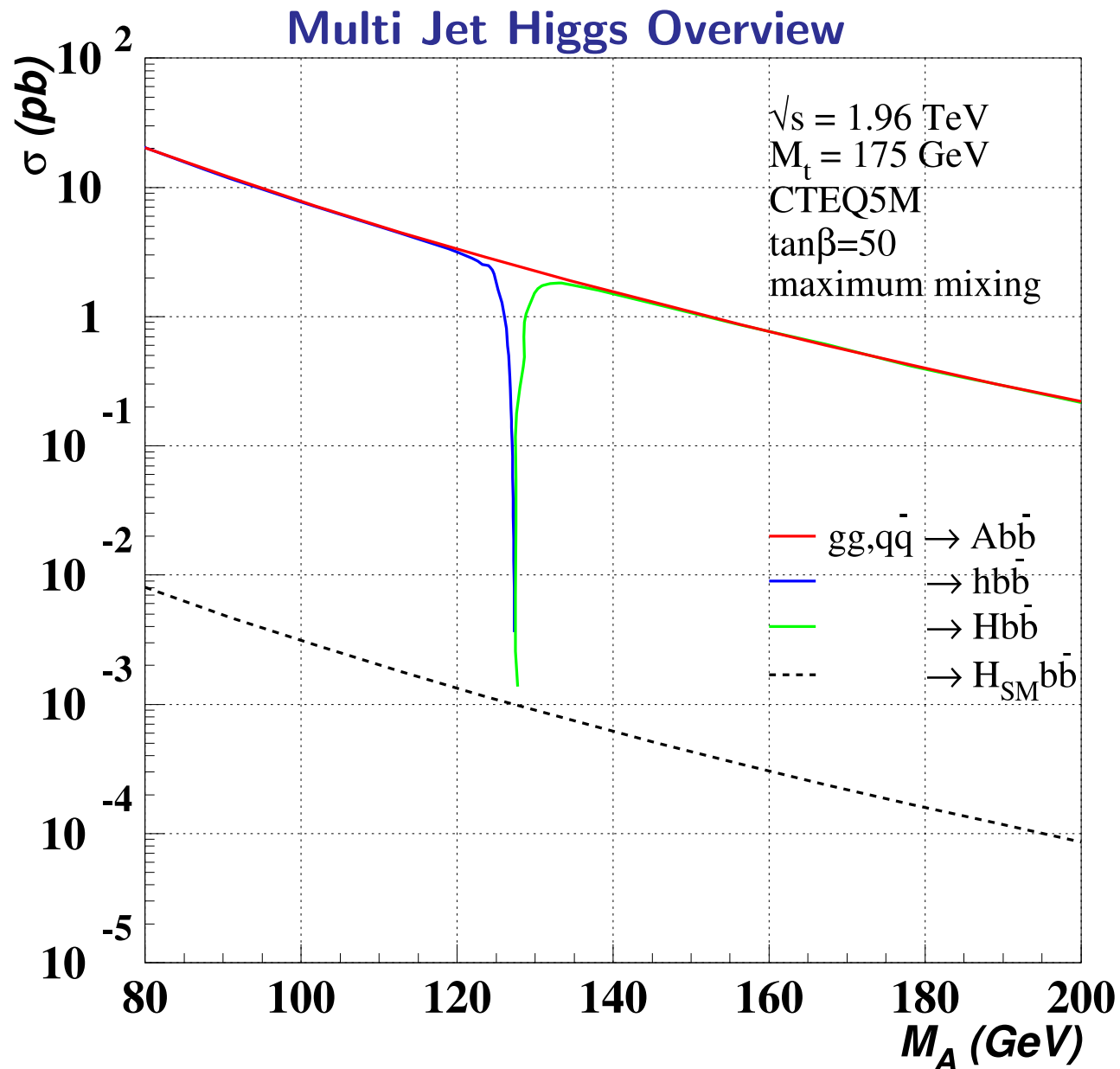
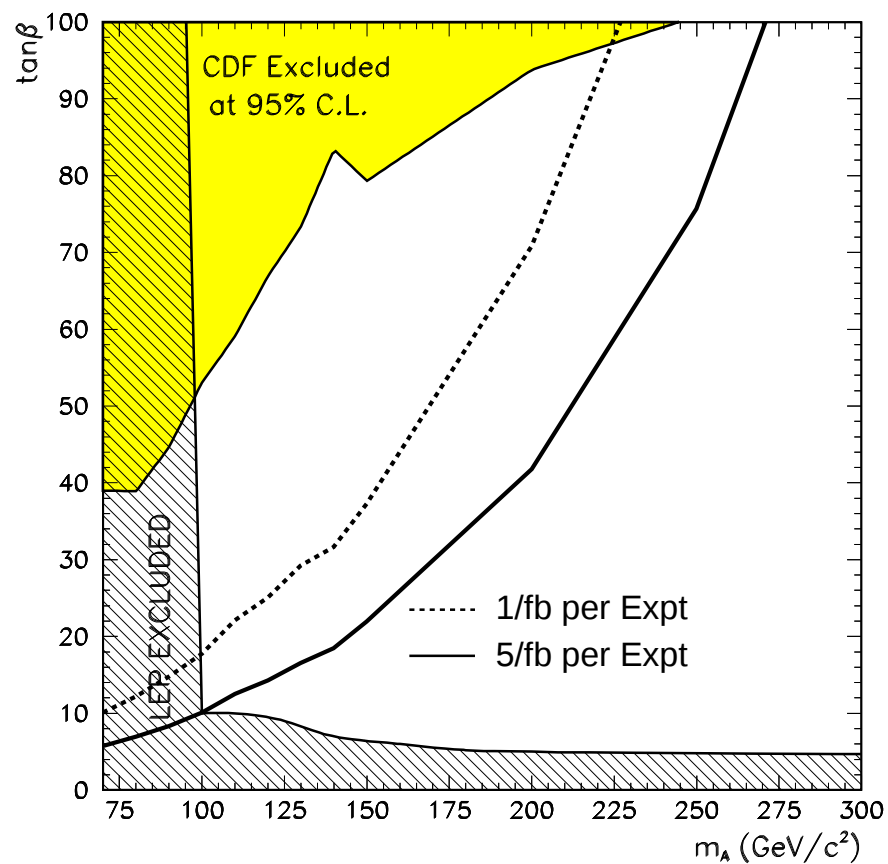




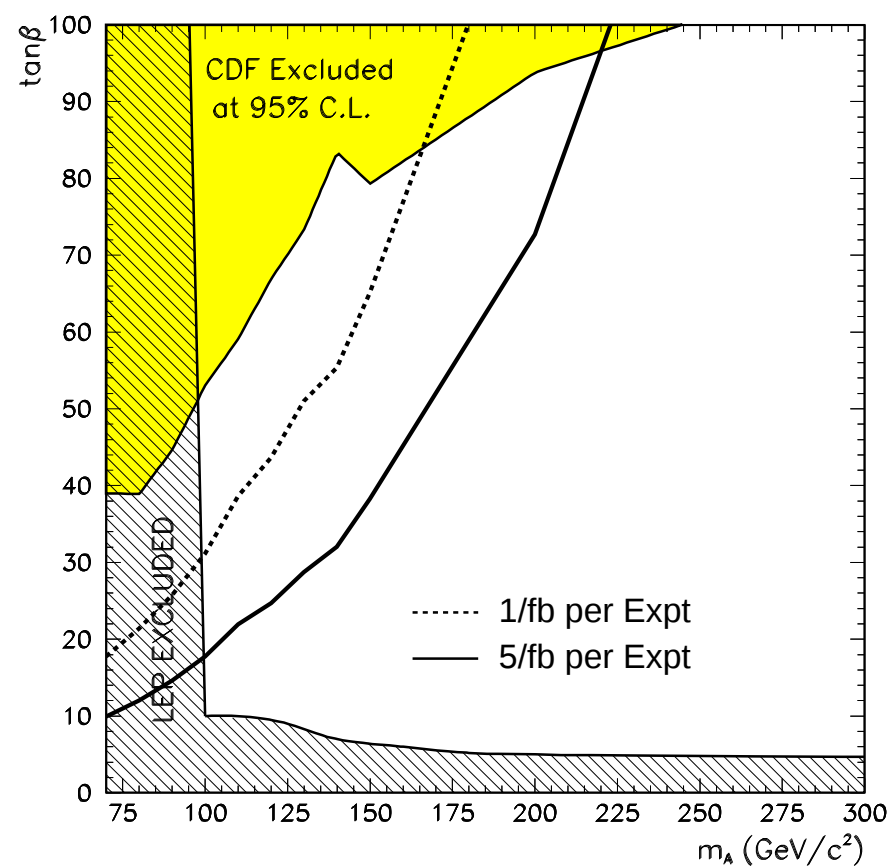
Need orders of magnitude less int. lumi for discovery compared to SM Higgs

Multi Jet Higgs Overview

95% CL Exclusion

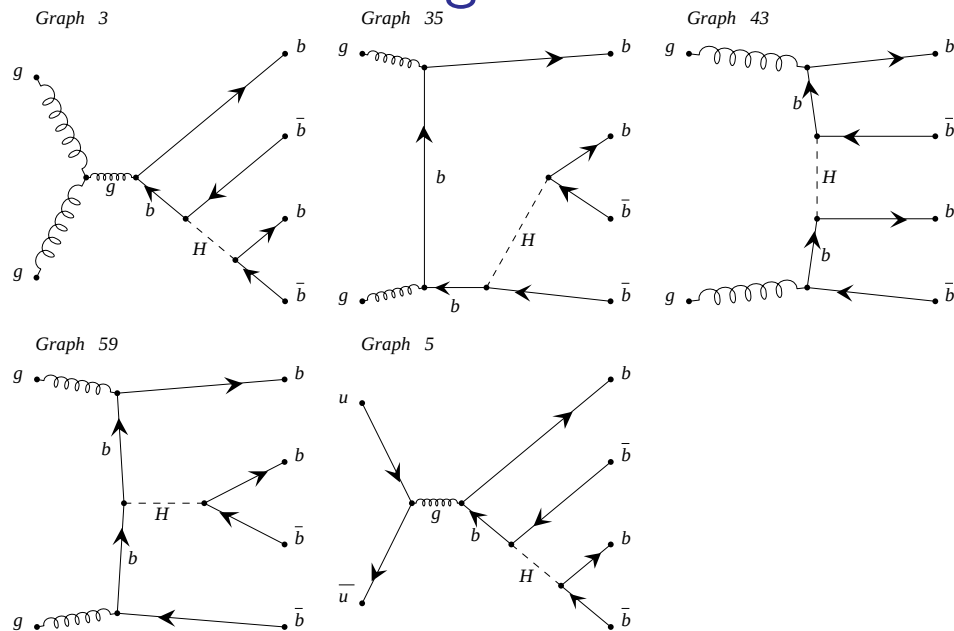


5σ Discovery



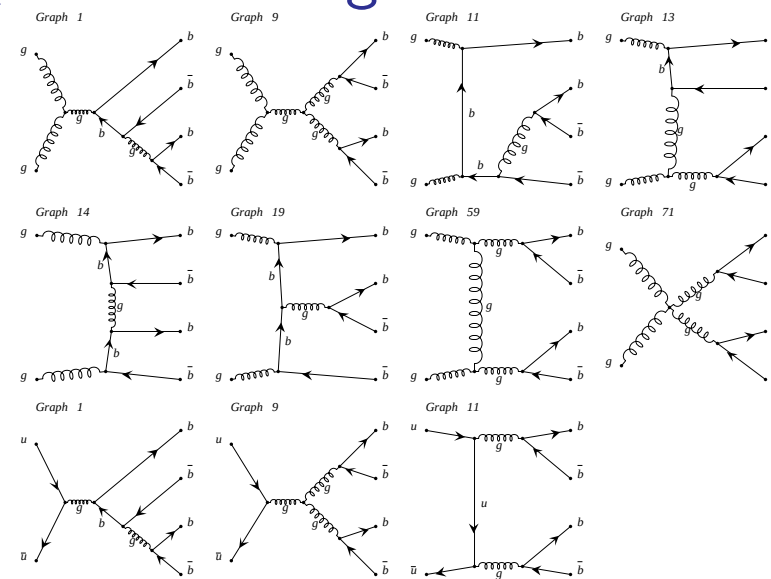
Multi Jet Higgs Overview

Signal



produced by GRACEFIG

QCD 4b Background Dominant



produced by GRACEFIG

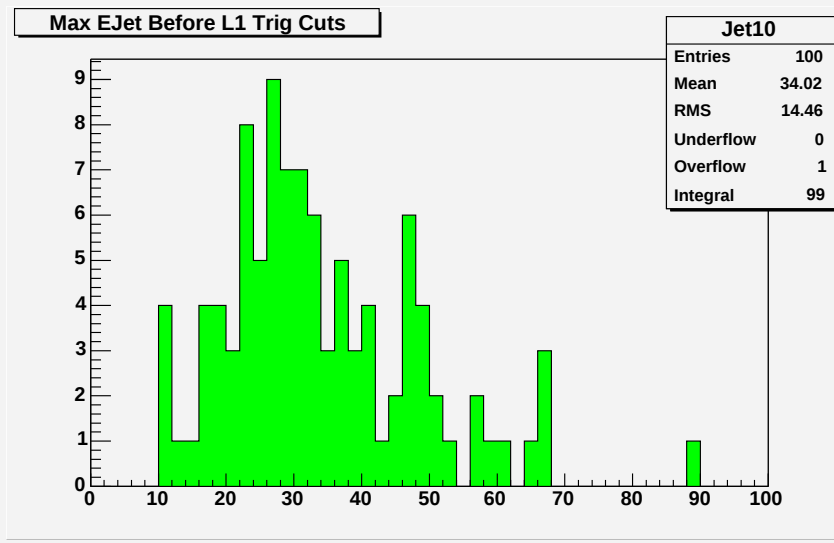
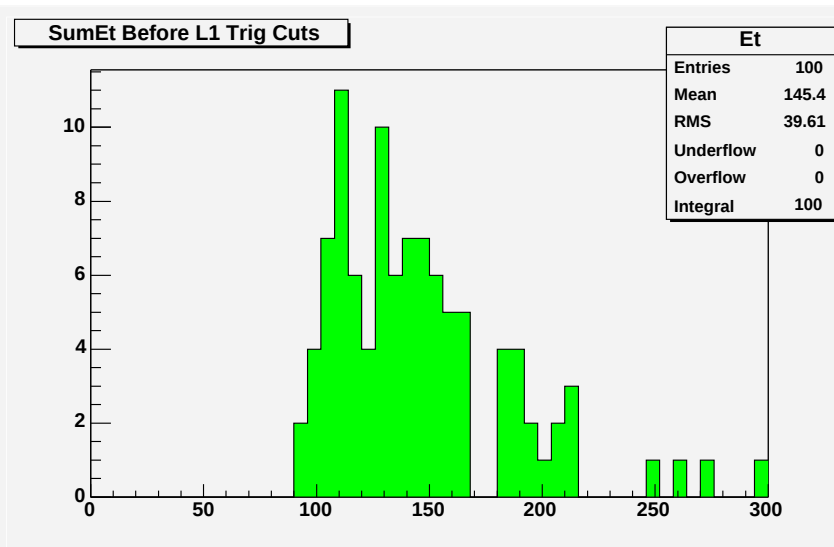
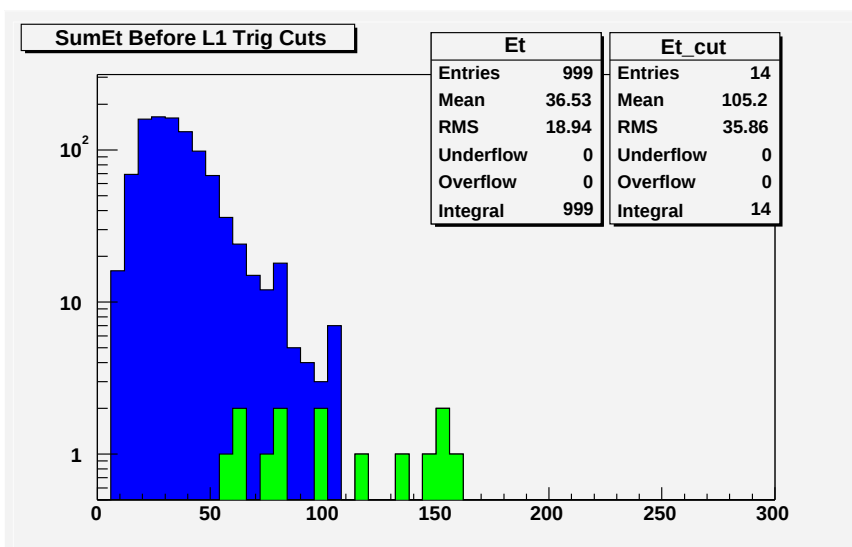
RunI Expected BKG from J. Valls's Analysis

QCD	Fakes	$t\bar{t}$	$W b\bar{b} + W c\bar{c}$	$Z b\bar{b} + Z c\bar{c}$	Total
2.16 ± 0.55	0.5 ± 1.2	0.70 ± 0.18	0.09 ± 0.06	0.37 ± 0.02	3.8 ± 1.3

Multi Jet Higgs Status

- Aaron and Lauren measuring
 - HIGGS_MULTI_JET trigger stability
 - 4-jet QCD background using 2-tag-bin-normalization technique
 - Investigating newly implemented trigger
- Pete and Jared (Steve)
 - Getting GRAPPA to run with generator-level cuts for QCD MC bkg
 - *CL* calculation tools
- Kevin investigating means of measuring trigger eff from data

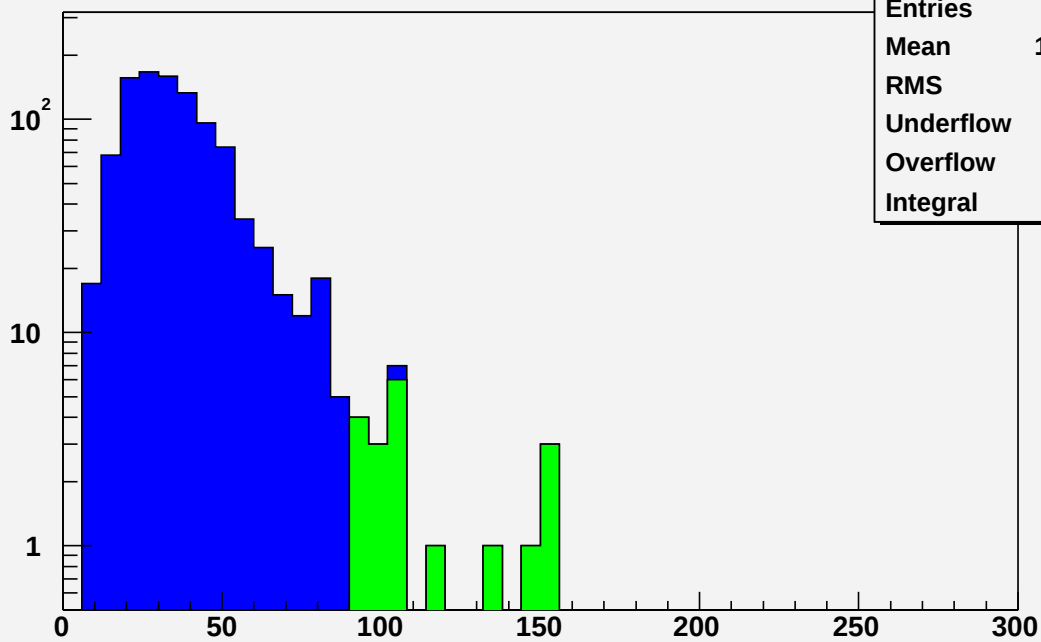
TRGSim++ Problem



4.11.2 Simulation of run 151435 still had L1 problems, not seen in data.

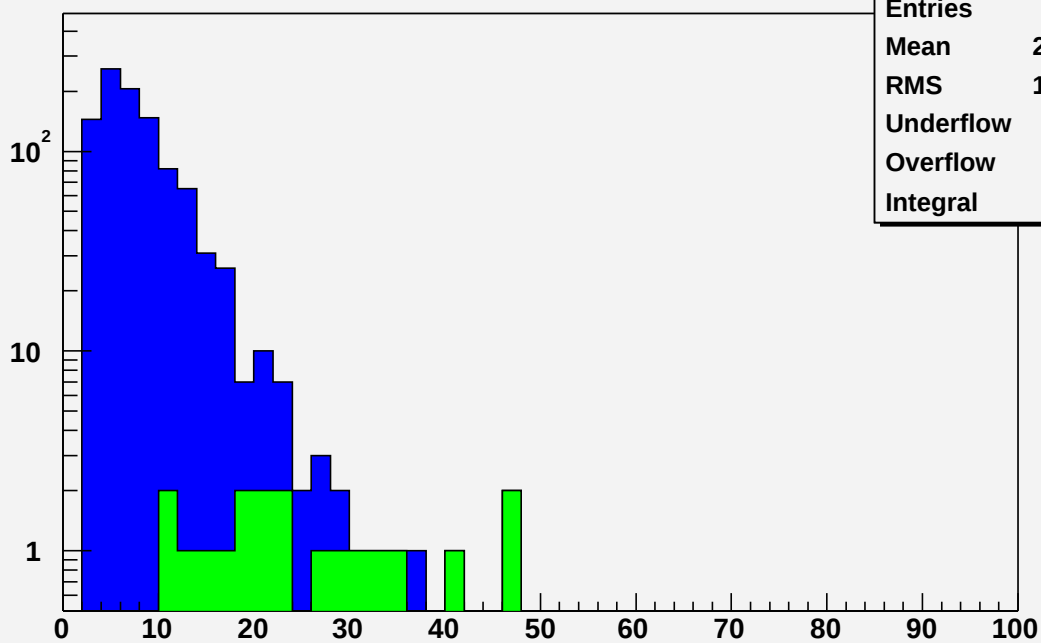
TRGSim++ Bug Fixed by Simona, Carla & Aaron

SumEt Before L1 Trig Cuts



Et_cut	
Entries	19
Mean	112.9
RMS	21.8
Underflow	0
Overflow	0
Integral	19

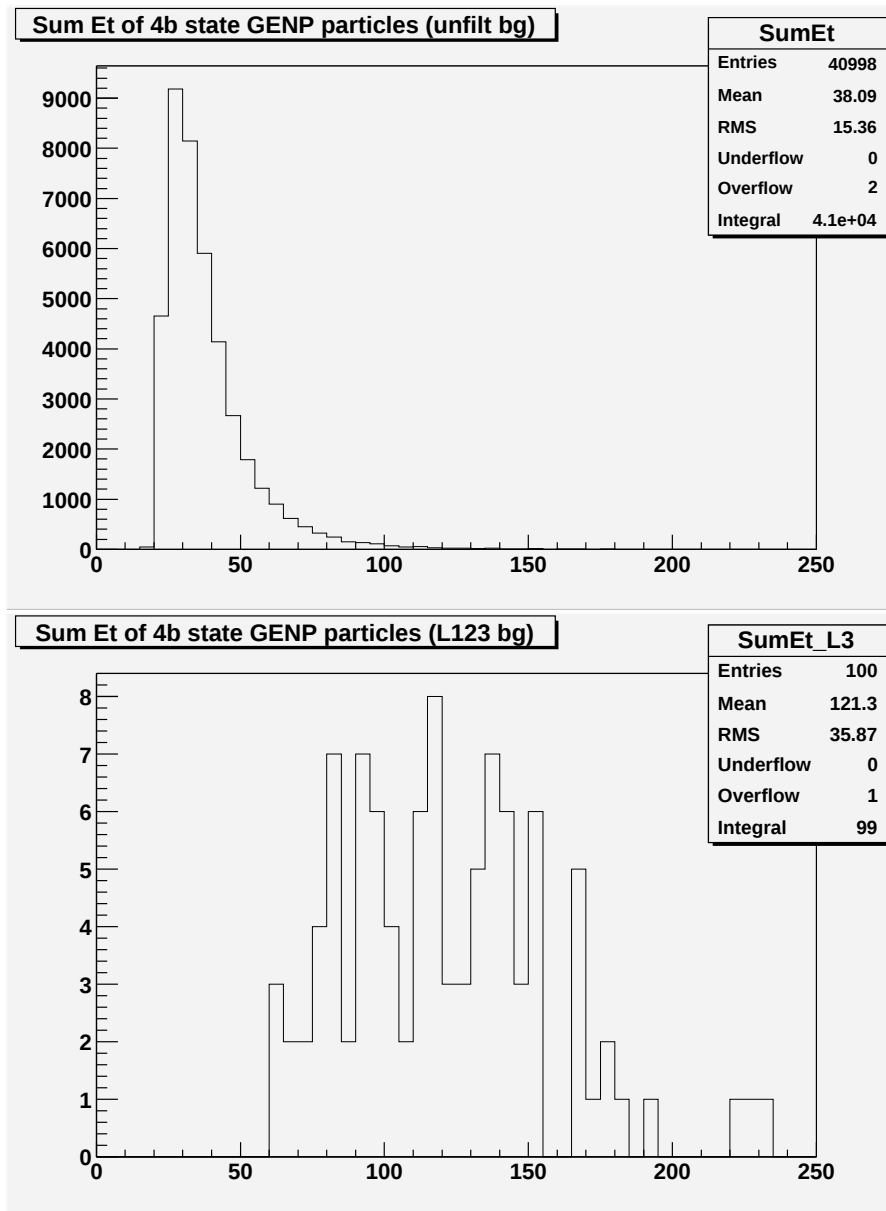
Max EJet Before L1 Trig Cuts



Jet10_cut	
Entries	19
Mean	25.29
RMS	10.79
Underflow	0
Overflow	0
Integral	19

Can now use TRGSim++ to evaluate MC trigger effs

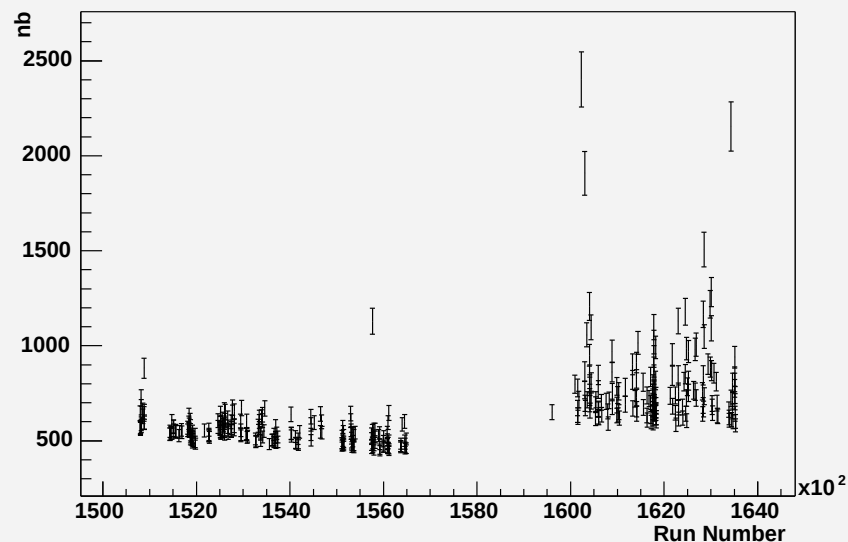
GR@PPA 4b QCD Generator-Level Cuts



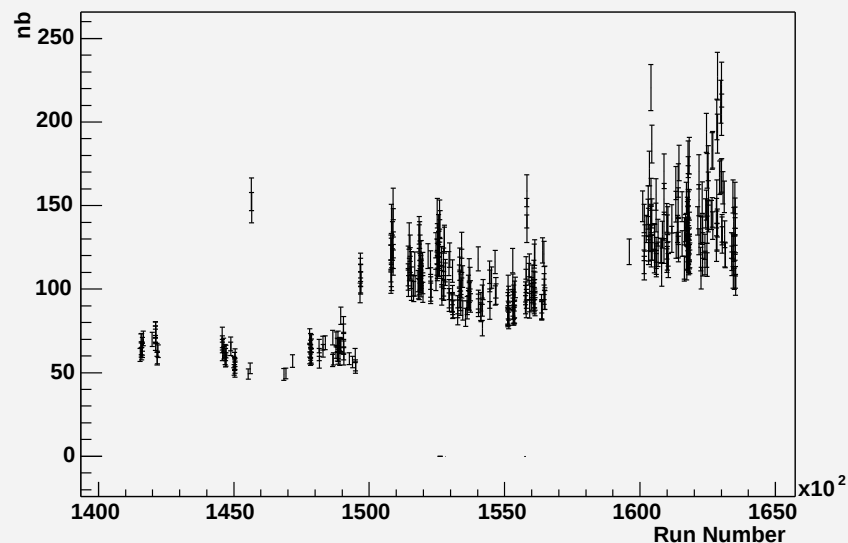
- Jared studied generator-level cuts in GR@PPA
- 50 GeV cut on parton-level $\sum E_T$ is quite safe
 - $\sigma(\text{GRAPPA nocut}) = 19883\text{pb}$
 - $\sigma(\text{GRAPPA 50 GeV cut}) = 3286\text{pb}$
- Has generated 1.7M events on Rutgers farm
- Run through 4.11.2 realistic MC and make stntuples
- Use QCD bkg and 4b sig to do toy analysis

Trigger Stability

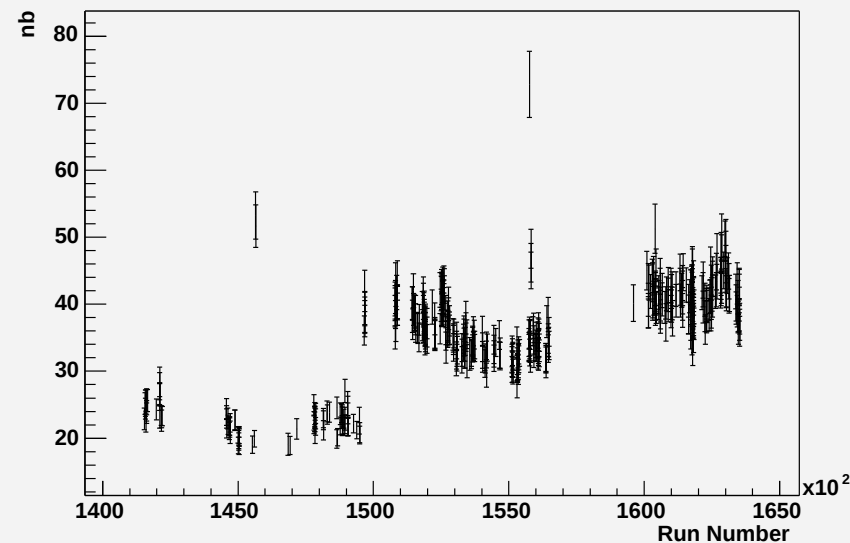
L1_JET10_ & SUMET90 Trigger xsec Up To May 31, 2003



L2_TWO_TRK2_D100_L1_JET10_ & SUMET90 Trigger xsec Up To May 31, 2003

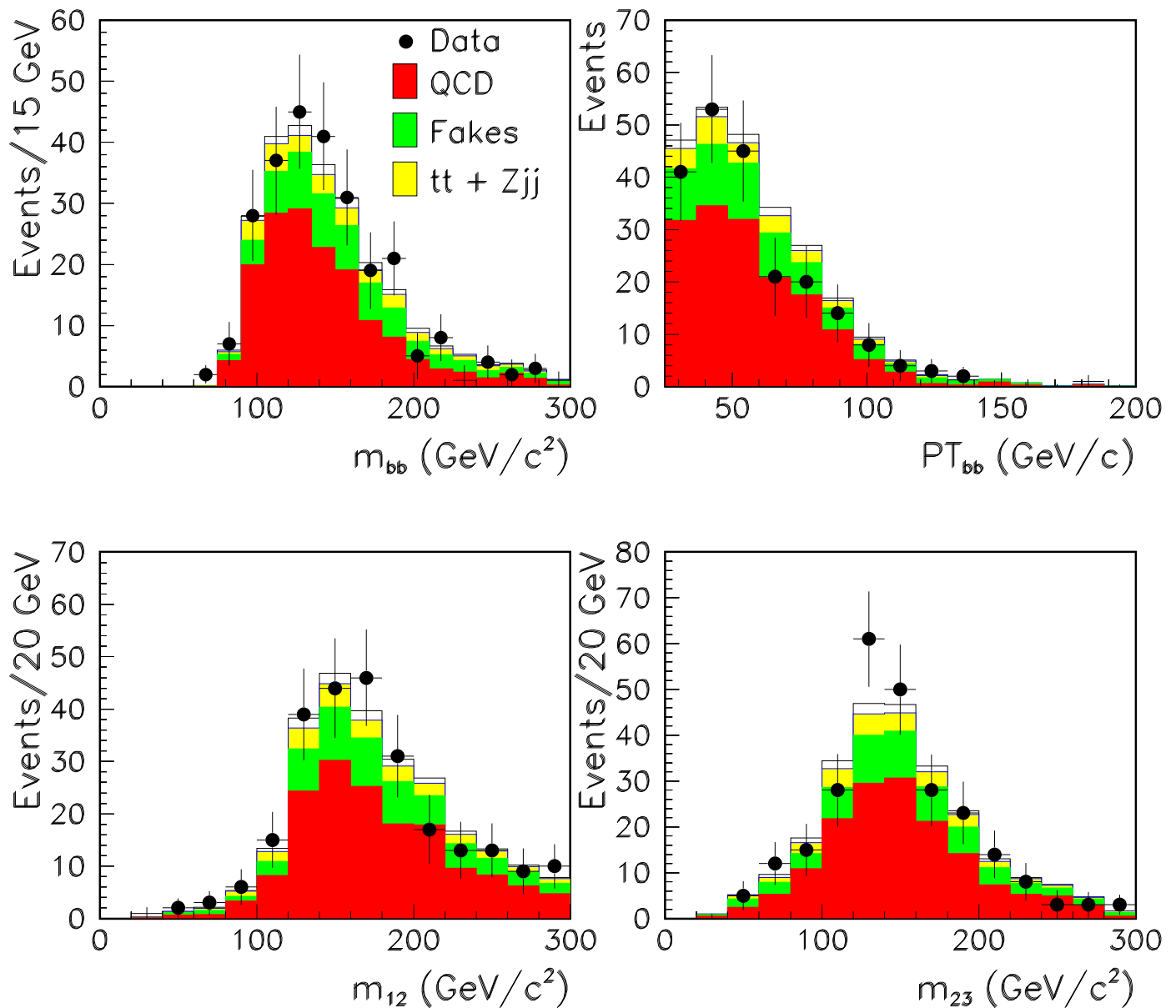


HIGGS_MULTI_JET Trigger xsec Up To May 31, 2003



- Trigger seems stable in most good runs
- Investigate anomolous runs
- Lauren making stntuples of all HIGGS_MULTI_JET triggers in ehig09

Next Step: Measure QCD Bkg



Use Run1 analysis technique to fit data to QCD+fakes+etc in 2-btag $m_{b\bar{b}}$ distribution