2 May 2011 Recorded Luminosities for the low pile up runs.

Run	HLT path	Recorded (/μb)
132599	HLT_ZeroBias	0.229
132601	HLT_ZeroBias	0.502
132602	HLT_ZeroBias	0.028
132605	HLT_ZeroBias	0.344
132606	HLT_ZeroBias	0.005
132716	HLT_ZeroBias	0.151

== = Total :

Selected LS	Recorded (/μb)	Effective (/μb)
		HLT_ZeroBias
2904	74.323	1.260

4% data

Run | HLT path | Recorded (/μb) |

133874	HLT_ZeroBias	0.223

== = Total :

Selected LS	Recorded (/μb)	Effective (/μb)
		HLT_ZeroBias
694	201.907	0.223

12% data

Run | HLT path | Recorded (/μb) |

135175	HLT_ZeroBias	0.725

== = Total :

Selected LS	Recorded (/μb)	Effective (/μb)
		HLT_ZeroBias
988	427.551	0.725

30 April. Crab Jobs

ZeroBias_07pc_iEta_iPhi_Run_LS running to get run information in to ZeroBias TTree (XOR and Random triggers already have this)
ZeroBias_07px_iEta_iPhi_Run_LS running but forgot to include HLT_ZeroBias trigger so the dataset might be useless.
ZeroBias_L1MinBiasTrigger running. Same as ZeroBias_07pc_iEta_iPhi_Run_LS but using the L1 Trigger

filter on Bit40 and running on the Xsection 0.7% runs as well as the ones used in the trigger analysis. It should therefore be able to analyze the BSC MinBias Threshold1 trigger for the 14XXXX runs and the Cross-section runs.

20 April Trigger Analysis.

Processing the following runs in NanoDST.

Run 143955: Fill Number 1303.
Filling Scheme: Alternating R1 R2 pilot.

Run 146431: Fill Number 1364.
Filling Scheme: 16 colliding bunches

Run 143727: Fill Number 1299
Filling Scheme: 1250ns_48b_36_16_36

Run 148864: Fill Number 1440
Filling Scheme 150ns_368b_348_15_344_4xbpi19inj

4-Apr-2011 Pythia6 Efficiencies (Larger Dataset)

SINGLE ARM EFFICIENCY PYTHIA6 RESULTS				
Event Type	**N_{evts}**	**E>3GeV**	**E>4GeV**	**E>5GeV**
Inelastic	198163	0.945166	0.934887	0.920025
ND	135830	0.999396	0.998447	0.996304
DD	25999	0.888919	0.858071	0.815647
SD	36334	0.782683	0.752243	0.709556
SD >=-5	24739	0.978415	0.954161	0.913254
SD <-5	11595	0.365071	0.321432	0.274946

DOUBLE ARM EFFICIENCY PYTHIA6 RESULTS				
Event Type	**N_{evts}**	**E>3GeV**	**E>4GeV**	**E>5GeV**
Inelastic	198163	0.778748	0.752421	0.718615
ND	135830	0.978002	0.962321	0.937319
DD	25999	0.418516	0.353091	0.284819
SD	36334	0.291628	0.253482	0.211427
SD >=-5	24739	0.428312	0.372287	0.310522
SD <-5	11595	0	0	0

Pythia8 Efficiencies 5-Apr-2011

SINGLE ARM EFFICIENCY PYTHIA8 RESULTS				
Event Type	**N_{evts}**	**E>3GeV**	**E>4GeV**	**E>5GeV**
Inelastic	99125	0.949095	0.944111	0.936999
ND	67944	1	0.999853	0.999249
DD	12906	0.902139	0.886952	0.864404
SD	18275	0.792996	0.777237	0.756826
SD >=-5	12486	0.996556	0.989989	0.976534
SD <-5	5789	0.353947	0.318362	0.28295

DOUBLE ARM EFFICIENCY PYTHIA8 RESULTS

Event Type	N_{evts}	E>3GeV	E>4GeV	E>5GeV
Inelastic	99125	0.783929	0.765397	0.737987
ND	67944	0.990492	0.978247	0.954301
DD	12906	0.408647	0.365411	0.316442
SD	18275	0.280985	0.256525	0.231464
SD >=-5	12486	0.411261	0.375461	0.338779
SD &yxi;<-5	5789	0	0	0

Phojet Efficiencies 5-Apr-2011

SINGLE ARM EFFICIENCY PHOJET RESULTS				
Event Type	N_{evts}	E>3GeV	E>4GeV	E>5GeV
Inelastic	468340	0.981782	0.973052	0.966742
ND	374291	0.999797	0.999402	0.998253
DD	23540	0.970093	0.952761	0.936958
SD	62712	0.891568	0.845596	0.818551
CD	7797	0.877902	0.794536	0.735924
SD >=-5	46035	0.99659	0.989942	0.976127
SD <-5	16677	0.601667	0.447143	0.383582

DOUBLE ARM EFFICIENCY PHOJET RESULTS				
Event Type	N_{evts}	E>3GeV	E>4GeV	E>5GeV
Inelastic	468340	0.877412	0.845779	0.813435
ND	374291	0.982134	0.964204	0.933955
DD	23540	0.706797	0.632413	0.575956
SD	62712	0.391711	0.303483	0.268115
CD	7797	0.271899	0.166731	0.130948
SD >=-5	46035	0.509134	0.410992	0.346128
SD <-5	16677	0.0675781	0.00671584	0.000599628

1-Apr-2011 Getting time info from background and zero bias runs.

To investigate the background subtraction better, I am now running over the datasets again using Zerobias and XOR but with the added lumisection infor in the TTree. This info is gathered by calling iEvent.luminosityBlock() from the event.

+++---1-Apr-2011 Noisy towers With the use of the ieta() and iphi() from the detid, I was able to find the exact towers which were contributing more to the counts than others. The tower ieta, iphi values are:
1) ieta = 34, iphi = 33
2) ieta = 40, iphi = 43

I then ran a test job of 443000 events and looked for the following: 1) How many HF single arm events over 3 GeV. **36242**
2) How many HF single arm events over 3 GeV in which either 'bad' tower was hit. *9785*
3) How many HF single arm events over 3 GeV which did not include the bad towers. *36242*
4) How many HF single arm events ONLY in the bad towers. *0*

Conclusion: The noisy towers, which seem to be due to small pedestal shifts, did not artificially contribute to the number of counts over threshold. No events exist in which the noisy towers were responsible for counting the event. If the noisy towers fired, many other towers also fired and the event would have been counted anyway, even if the bad towers were masked.

13-Mar-2011

Current status of processed data files
In **/castor/cern.ch/user/a/ajbell/xsection**

Phojet_Full_Extra_Phi.root Phojet dataset. Large and with HF Phi information for removing the noisy HF towers. **Pythia6_Full_Extra_Phi.root** Pythia6 dataset. Large and with HF Phi information for removing the noisy HF towers. **Pythia8_Full_Extra_Phi.root** Pythia8 dataset. Large and with HF Phi information for removing the noisy HF towers. **Phojet_FullEta.root** Phojet MC Full simulation with >0 and <0 cuts
Phojet_Large.root Large Phojet full simulation with 2.9<| |<5.2 cuts
Pythia6_FullEta.root Pythia6 MC Full simulation with >0 and <0 cuts
Pythia6_Large.root Large Pythia6 full simulation with 2.9<| |<5.2 cuts
Pythia8_FullEta.root Pythia8 MC Full simulation with >0 and <0 cuts
Pythia8_Full_Extra.root Large Pythia8 full simulation with >0 and <0 cuts and 5.5GeV and 6GeV cuts.
Pythia8_Large.root Large Pythia8 full simulation with >0 and <0 cuts and 5.5GeV and 6GeV cuts.

Real_Data_Full.root 0.7% pileup dataset with >0 and <0 cuts
Realdata_ZeroBias.root 0.7% pileup dataset with >2.9 and <5.2 cuts

ZB_BKGD_BPTX_MinusOnly.root Background measurements with >2.9 and <5.2 cuts
ZB_BKGD_BPTX_PlusOnly.root Background measurements with >2.9 and <5.2 cuts

ZB_Random_FullEta.root ZB_Real_Data_Eta_3_5.root Zerobias data with Jeremy's 3> <5 eta cuts???
ZB_Real_FullEta.root ZeroBias data with >0 and <0 cuts
ZB_Real_Jeremys_Etas.root Zerobias data with Jeremy's 3> <5 eta cuts
ZeroBias_BKGD_BPTX_XOR.root Combined ZB_BKGD_BPTX_MinusOnly.root and ZB_BKGD_BPTX_PlusOnly.root
ZeroBias_Full_Extra.root Zero Bias dataset with full >0, <0 cuts and extra energy cuts of 3.5GeV, 5.5GeV and 6GeV
ZeroBias_BKGD_BPTX_OR_Extra.root Combined ZB_BKGD_BPTX_MinusOnly.root and ZB_BKGD_BPTX_PlusOnly.root with 3.5, 5.5 and 6GeV cuts
ZeroBias_RECO_June14thReReco_v1.root Sample of ZeroBias data for CMSSW job testing.

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