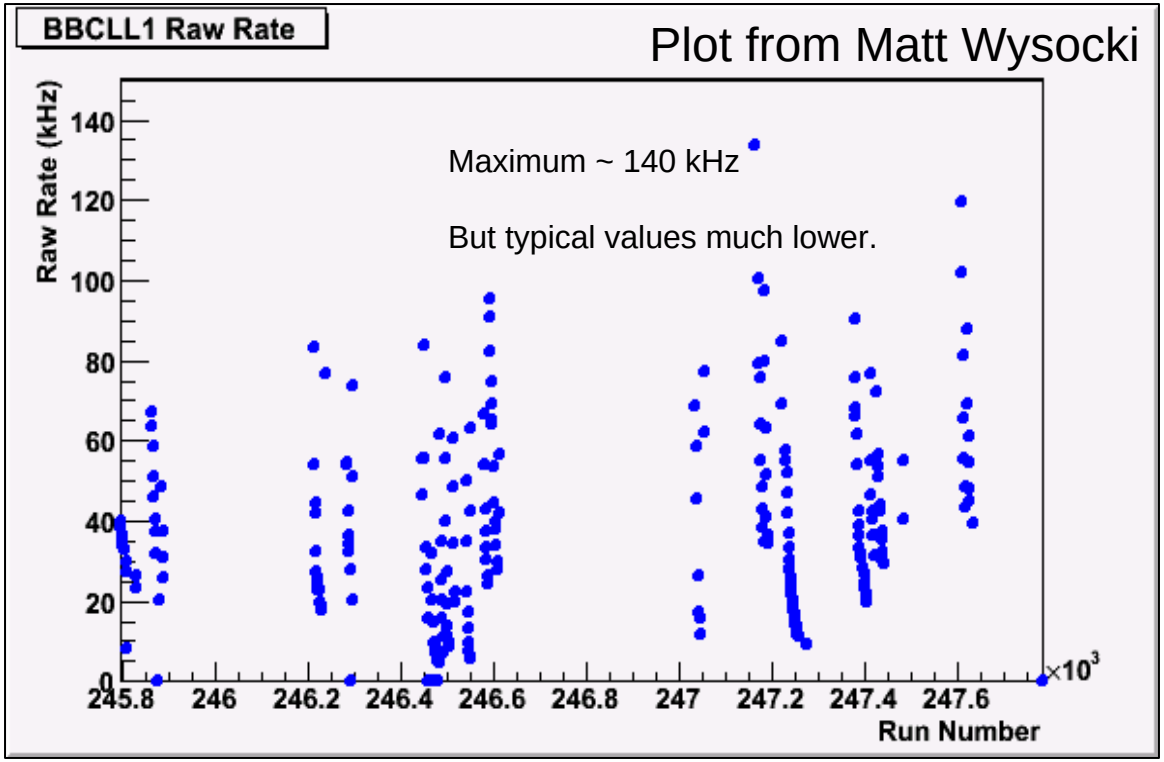
Run-8 Trigger Update
EC Meeting
December 11, 2007

J. Nagle
University of Colorado

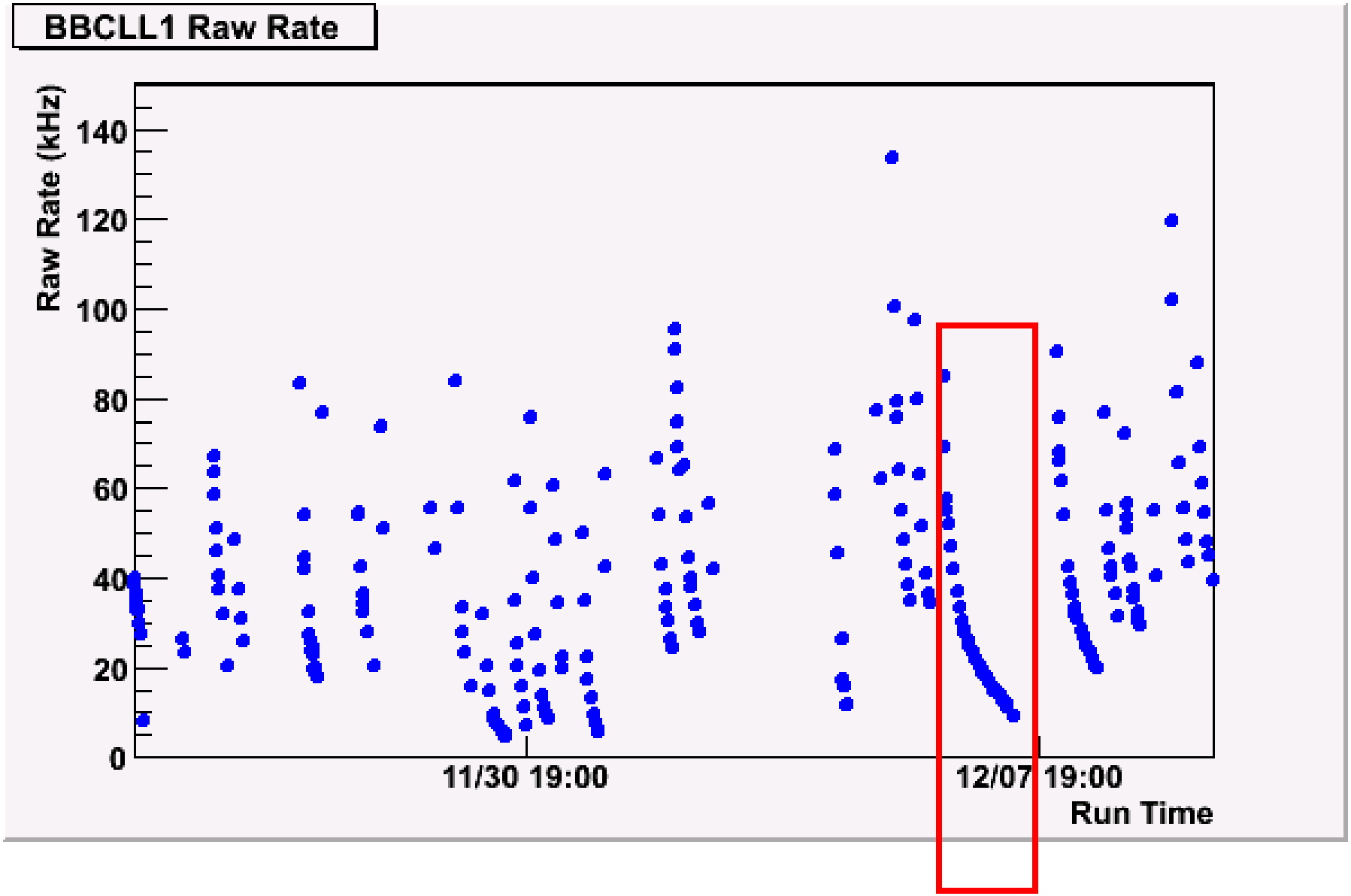


Run	Raw Evts	Live Evts	Scaled Evts
Total	15,769,550,604	13,440,082,203	921,731,536

Thus, we have recorded almost 900 million scaled Minimum Bias BBCLL1 events. Value needs to be double checked.

If correct, this is already about what PWG's had originally requested – so we will get much more.

Live events are almost 13 billion, which is sampled by our rare event triggers that have 0 prescale.



The store that kept going and going….
While they tried to locate problem in AGS

Run Summary - Mozilla Firefox

File Edit View History Bookmarks Tools Help

http://localhost:5889/runcontrol/RunSummary.php?RunNumber=247624

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Name	Bit Mask	Scale Down	State	Raw Trigger Count	Raw Trigger Rate	T				
Clock	0x00000001	999999	Enabled	-684508776	-190936.90					
RxNP&BBC	0x00000002	9999999	Enabled	84037163	23441.33					
BBCLL1(>0 tubes)	0x00000004	55	Enabled	195954446	54659.54					
BBCLL1(noVertexCut)	0x00000008	1300	Enabled	435218568	121399.88					
ZDCLL1wide	0x00000010	650	Enabled	134530013	37525.81					
ZDCLL1narrow	0x00000020	100	Enabled	48156449	13432.76	40903686	11409.68	404987	112.97	0.85
MPC_4x4	0x00000040	0	Enabled	3108632	867.12	2622707	731.58	2622707	731.58	0.84
MPC_2x2	0x00000080	0	Enabled	3823626	1066.56	3212477	896.09	3212477	896.09	0.84
ERTLL1_4x4a	0x00000100	0	Enabled	1313815	366.48	974115	271.72	974115	271.72	0.74
ERTLL1_4x4b	0x00000200	0	Enabled	661084	184.40	394176	109.95	394176	109.95	0.60
ERTLL1_4x4c	0x00000400	9999999	Enabled	210149398	58619.08	169556633	47296.13	17	0.00	0.81
ERTLL1_2x2&BBCLL1	0x00000800	9999999	Enabled	57056648	15915.38	48416102	13505.19	5	0.00	0.85
ERTLL1_4x4a&BBCLL1	0x00001000	0	Enabled	947186	264.21	802853	223.95	802853	223.95	0.85
ERTLL1_4x4b&BBCLL1	0x00002000	0	Enabled	374072	104.34	316206	88.20	316206	88.20	0.85
ERTLL1_4x4c&BBCLL1	0x00004000	0	Enabled	4231491	1180.33	3545677	989.03	3545677	989.03	0.84
ERTLL1_E&BBCLL1	0x00008000	0	Enabled	6317048	1762.08	5342051	1490.11	5342051	1490.11	0.85
MUIDLL1_N1D&BBCLL1	0x00010000	0	Enabled	1648753	459.90	1386582	386.77	1386582	386.77	0.84
MUIDLL1_S1D&BBCLL1	0x00020000	2	Enabled	8594021	2397.22	7163575	1998.21	2387858	666.07	0.83
MUIDLL1_N1H&BBCLL1	0x00040000	12	Enabled	1451820	404.97	1228324	342.63	94486	26.36	0.85
MUIDLL1_S1H&BBCLL1	0x00080000	12	Enabled	5777975	1611.71	4858878	1355.34	373760	104.26	0.84
MUIDLL1_N2D&BBCLL1	0x00100000	0	Enabled	22358	6.24	18239	5.09	18239	5.09	0.82
MUIDLL1_S2D&BBCLL1	0x00200000	0	Enabled	745660	207.99	601727	167.85	601727	167.85	0.81
(MUIDLL1_N1D&S1D)&BBCLL1	0x00400000	0	Enabled	124662	34.77	100296	27.98	100296	27.98	0.80
(MUIDLL1_N2D&S2D)&BBCLL1	0x00800000	0	Enabled	907	0.25	350	0.10	350	0.10	0.39
MPC_4x4&BBCLL1	0x01000000	0	Enabled	1578760	440.38	1338696	373.42	1338696	373.42	0.85
MUIDLL1_N2D&S2D	0x02000000	0	Enabled	229370	63.98	41373	11.54	41373	11.54	0.18
ZDCN||ZDCS	0x04000000	3300	Enabled	736944076	205563.20	627547134	175048.02	190108	53.03	0.85
ZDCNS	0x08000000	800	Enabled	131380486	36647.28	111551716	31116.24	139266	38.85	0.85
PPG(Pedestal)	0x10000000	0	Enabled	3569	1.00	3061	0.85	3061	0.85	0.86
PPG(Test Pulse)	0x20000000	0	Enabled	7139	1.99	6141	1.71	6141	1.71	0.86

BBCLL1 raw rate ~ 54 kHz

Highest seen ~ 140 kHz, but most everything has been below 100 kHz

Run 247624 BBC rate ~ 54 kHz

ERT4x4a & BBCLL1 (2.8 GeV)	Rejection	188
ERT4x4b & BBCLL1 (3.5 GeV)	Rejection	490
ERT4x4c & BBCLL1 (2.1 GeV)	Rejection	57
ERT_E & BBCLL1 (600 MeV)	Rejection	29
MUID_N2D & BBCLL1	Rejection	4600
MUID_S2D & BBCLL1	Rejection	137
MUID_N1D & BBCLL1	Rejection	115
MUID_S1D & BBCLL1	Rejection	14
MUID_N1S & BBCLL1	Rejection	18
MUID_S1S & BBCLL1	Rejection	3
MPC4x4	Rejection	200
MPC2x2	Rejection	98

Need to raise electron threshold when BBC ~ 130-150 kHz.

John and Vince have implemented 1 shallow hadron trigger. Checking now.

Unprescale MPC triggers as default → done.

Summary:

Triggers working fine so far, in large part helped by lower luminosity.

→ ERT rejection about x2 worse than expected
Work being done to check this, RICH issues
→ Hadron in muon arm trigger being tested
→ Lots of MB data being taken (at PWG request)
→ Diffractive (still not so clear, but ERT4x4 and MPC without BBC requirement are unprescaled)
→ ZDCN || ZDCS prescaled, but there for normalization σ

Things to watch:

→ DAQ with raw 8 kHz, runs live at 6.5 kHz
Would be nice to see improvement, but not hurting much
Note that DCM can run at least 7.5 kHz, issue is something in busy
→ Watch luminosities for need to change electron trigger threshold
→ Long term maintenance issue for RICH electronics
→ Long term issue with severe limitations of EmCal turn-on curve