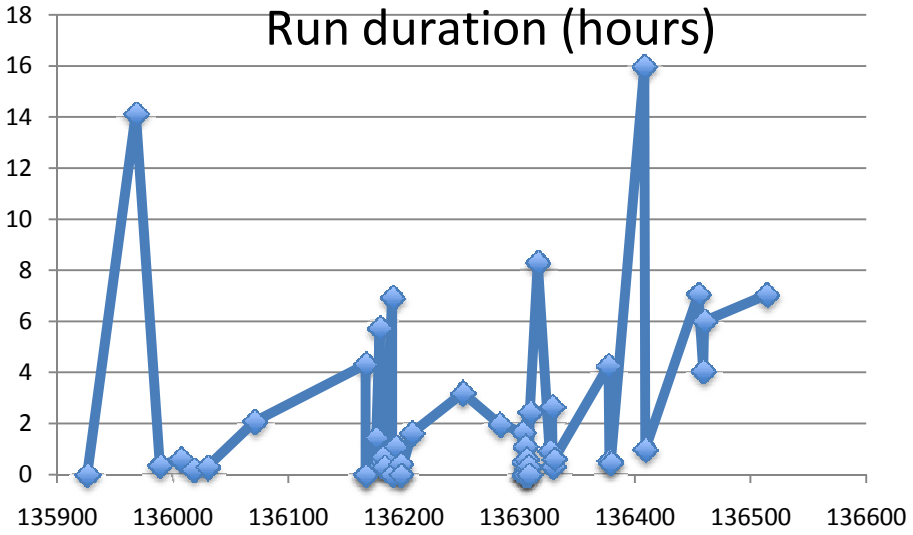
Trigger Offline DQ Monitoring

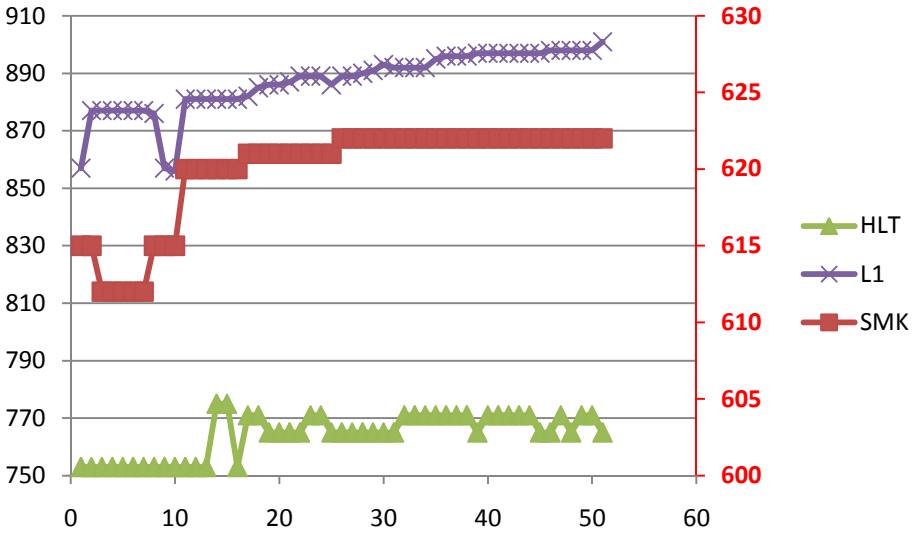
DQ Meeting – 27 Oct 2009

Ricardo Goncalo for Trigger Offline Monitoring

Runs since Thursday

- Around 50 runs since 135926 (22nd Oct.09)
- 5 Super Master Keys (SMK)
- 14 High-Level Trigger prescale keys (HLT)
- 21 L1 prescale keys (L1)
- 32 different configurations
- NOTE: HLT prescale keys shown here are the first ones in each run





- SMK 612:
  - Based on 611
  - New dead times: simple 7
- SMK 615:
  - Based on 612
  - No random triggers
  - Long dead time: Simple 2500, Complex 2/570 (for LAr 32 samples)
- SMK 220:
  - Based on 616 (based on 615)
  - Re-introduce random triggers
  - Dead Time Simple 2500, Complex 2/570
- L1 prescales:
  - 856: L1Calo
  - 857: L1Calo + TRT
  - 876: L1Calo & Calib + TRT
  - 877: RD0 @ 150Hz
  - 881: RD0 @ 2Hz + TRT + L1Calo
- HLT prescales:
  - 753: simple L1 calib + laser + random
  - 775: simple L1 calib

135926	Wed Oct 21 13:50:08 2009	615	753	857	(1-)
135968	Thu Oct 22 03:58:12 2009	615	753	877	(1-)
135989	Thu Oct 22 04:20:16 2009	612	753	877	(1-)
136007	Thu Oct 22 04:57:15 2009	612	753	877	(1-)
136018	Thu Oct 22 05:09:47 2009	612	753	877	(1-)
136030	Thu Oct 22 05:27:01 2009	612	753	877	(1-)
[illegible]	Oct 22 07:32:02 2009	612	753	877	(1-)
136167	Thu Oct 22 11:51:08 2009	615	753	876	(1-7)
136167	Thu Oct 22 11:51:08 2009	615	753	857	(8-9)
[illegible]	22 11:51:08 2009	615	753	856	(10-)
136176	Thu Oct 22 13:18:30 2009	620	753	881	(1-)
136179	Thu Oct 22 19:02:59 2009	620	753	881	(1-)
136180	Thu Oct 22 19:25:05 2009	620	753	881	(1-)
136181	Thu Oct 22 19:56:40 2009	620	775	881	(1-)
136182	Thu Oct 22 20:37:15 2009	620	775	881	(1-)
136183	Thu Oct 22 20:55:26 2009	620	753	881	(1-)

- SMK 621:
  - Based on 618 with nWeightedClustersMin=8 (for InDetTrigCosmicsScoringTool)
- SMK 622:
  - Based on 621
  - Fix for L1 menu (EM5I pT cut changed from 7 to 5GeV)
- L1 prescales:
  - 882: RD0 @ 30kHz + L1 muon triggers + Calo, TRT, Lucid, ZDC, laser
  - 885: RD0 @ 30kHz + L1 muon triggers + J10_win6, Calo, TRT, Lucid, ZDC, laser
  - 886: RD0 @ 30kHz + L1 muon triggers + Calo, TRT, ZDC, laser
  - 889: RD0 @ 10kHz + L1 muon triggers + Calo, TRT, ZDC, laser
  - 890: RD0 @ 10kHz + L1 muon triggers + Calo, TRT, ZDC, laser_nocalo
- HLT prescales:
  - 765: simple L1 calib + PS + random + no silicon
  - 771: simple L1 calib + PS + random

136190	Fri Oct 23 03:51:33 2009	621	771	882 (1-8)
136190	Fri Oct 23 03:51:33 2009	621	771	885 (9-)
136193	Fri Oct 23 04:56:39 2009	621	765	886 (1-)
136197	Fri Oct 23 [illegible] 2009	621	765	886 (1-12)
136197	Fri Oct 23 05:21:11 2009	621	765	887 (13-8)
136197	Fri Oct 23 05:21:11 2009	621	765	889 (9-)
136207	Fri Oct 23 06:59:04 2009	621	771	889 (1-)
136251	Fri Oct 23 10:11:03 2009	621	771	889 (1-)
136283	Fri Oct 23 12:09:15 2009	621	765	886 (1-)
136303	Fri Oct 23 13:49:48 2009	622	765	889 (1-)
136304	Fri Oct 23 14:19:51 2009	622	765	889 (1-6)
136304	Fri Oct 23 14:19:51 2009	622	765	890 (7-10)
136304	Fri Oct 23 14:19:51 2009	622	765	891 (11-)
136305	Fri Oct 23 15:25:57 2009	622	765	893 (1-2)
136305	Fri Oct 23 15:25:57 2009	622	765	892 (3-)
136306	Fri Oct 23 16:02:41 2009	622	771	892 (1-)
136307	Fri Oct 23 16:17:38 2009	622	771	892 (1-)
136308	Fri Oct 23 16:37:09 2009	622	771	892 (1-7)
136308	Fri Oct 23 16:37:09 2009	622	771	895 (8-11)
136308	Fri Oct 23 16:37:09 2009	622	771	896 (12-)
136309	Fri Oct 23 19:04:33 2009	622	771	896 (1-)

- SMK 622:
  - Based on 621
  - Fix for L1 menu (EM5I pT cut changed from 7 to 5GeV)
- L1 prescales:
  - 896: RD0 @ 10kHz + MU_PS + Calo, TRT, ZDC, Lucid, laser, muon changes
  - 897: RD0 @ 30kHz + MU_PS + Calo, TRT, ZDC, Lucid, laser, muon changes
  - 898: RD0 @ 30kHz + MU_PS + Calo, TRT, ZDC, Lucid, laser, muon changes
  - 901: RD0 @ 30kHz + Calo, TRT, ZDC, laser, muon changes
- HLT prescales:
  - 765: simple L1 calib + PS + random + no silicon
  - 771: simple L1 calib + PS + random

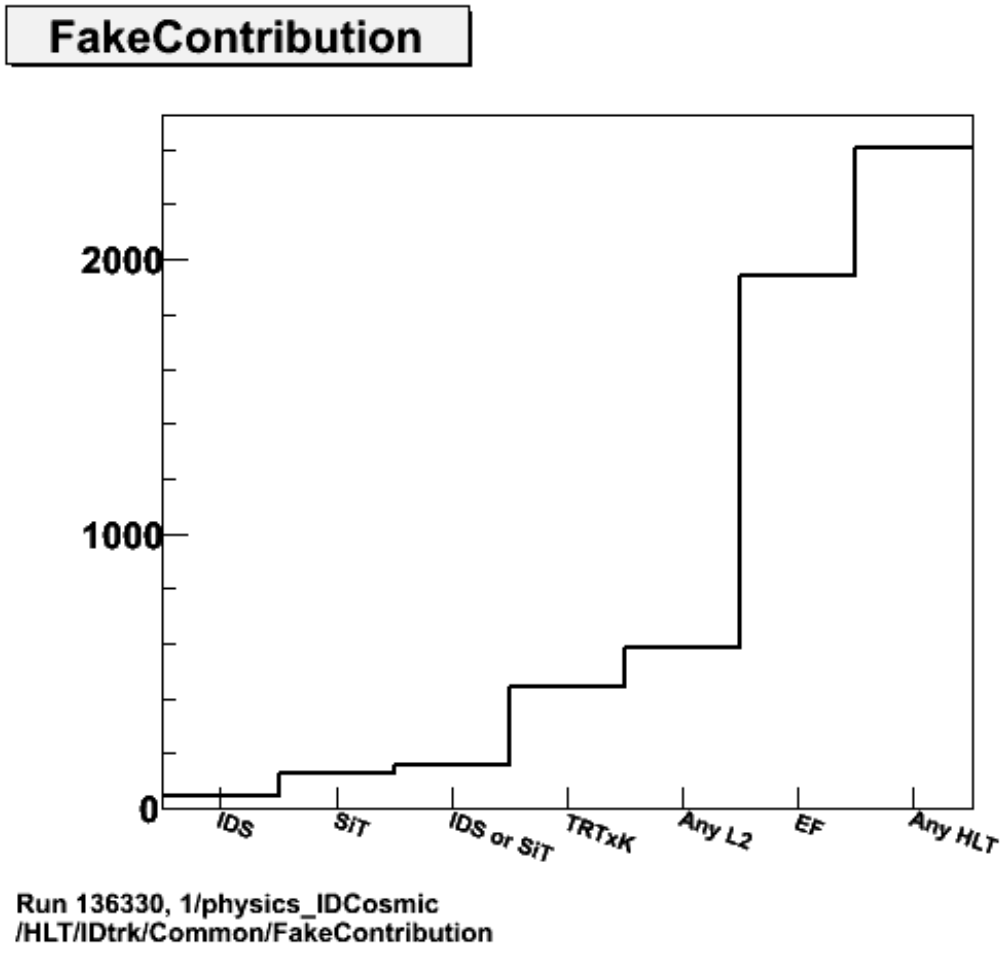
136316	Sat Oct 24 03:22:16 2009	622	771	896 (1-)
136326	Sat Oct 24 04:18:59 2009	622	765	897 (1-)
136328	Sat Oct 24 06:57:39 2009	622	771	897 (1-)
136329	Sat Oct 24 07:16:49 2009	622	771	897 (1-)
136330	Sat Oct 24 07:52:02 2009	622	771	897 (1-)
136377	Sat Oct 24 12:08:52 2009	622	771	897 (1-)
136378	Sat Oct 24 12:41:53 2009	622	771	897 (1-)
136379	Sat Oct 24 13:09:31 2009	622	765	897 (1-)
136408	Sun Oct 25 05:08:56 2009	622	765	898 (1-)
136409	Sun Oct 25 06:07:55 2009	622	771	898 (1-)
136455	Sun Oct 25 13:11:28 2009	622	765	898 (1-)
136459	Sun Oct 25 17:15:09 2009	622	771	898 (1-)
136460	Sun Oct 25 23:15:29 2009	622	771	898 (1-)
136514	Mon Oct 26 06:18:22 2009	622	765	901 (1-)

Issues

- A few events being sent to the debug stream(s)
  - Nothing alarming, just usual issues, but being investigated – more on this tomorrow
- L2 spikes in endcaps disappeared but not clear why (Savannah: #57182)
- Many more fake tracks compared to offline tracks:
  - Shows up in L2 and EF - and is not the spike problem
  - More evident in segment finder, but also present in non-TRT-only tracks
  - Using IDCosmics stream - TRTfastOr or accepted by IdScan, SiTrack, SegFinder, or EF tracking

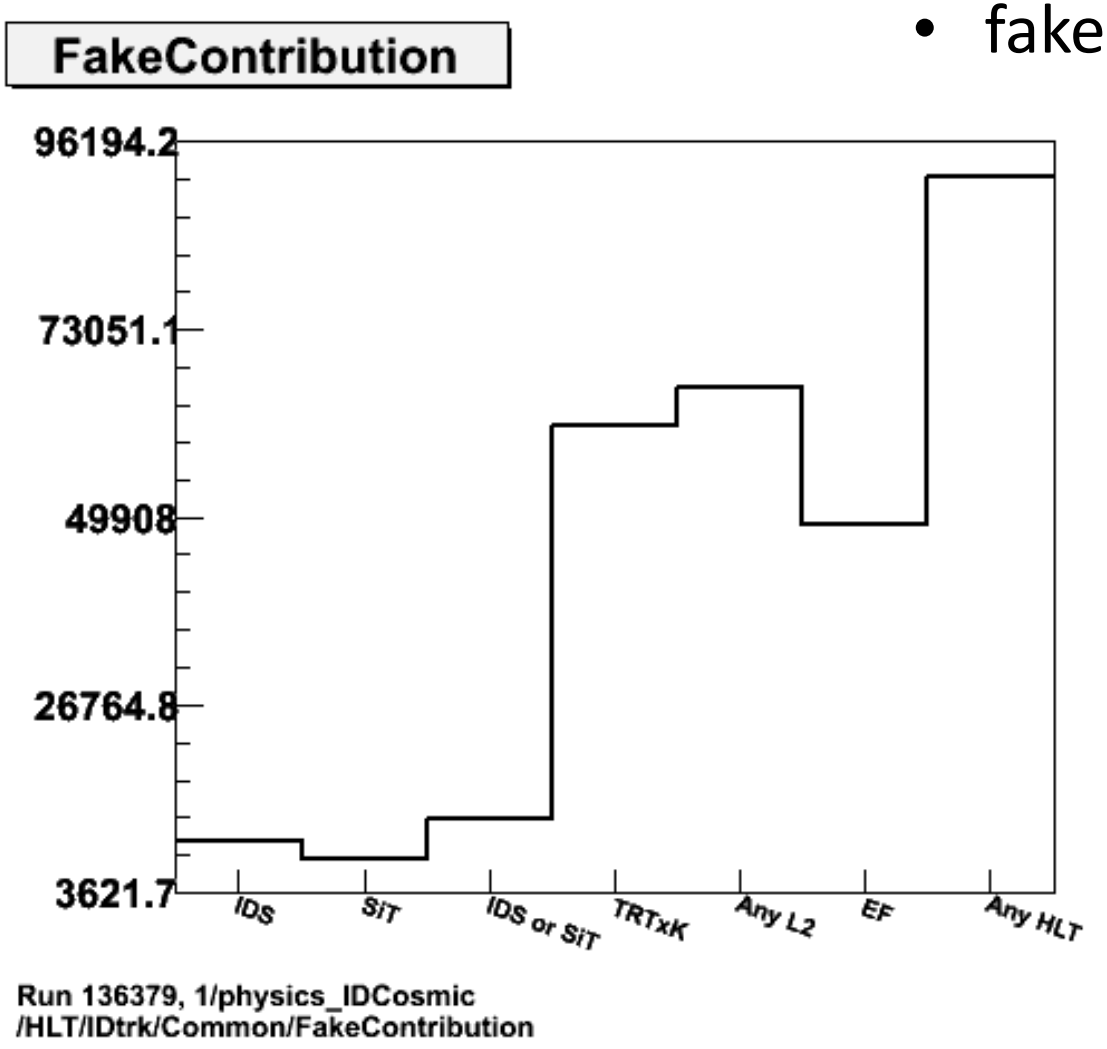
Good run

- fake=2200/39000=5.6%



“Bad run”

- fake=100k/230k=43.5%



Trigger DQ Flags

- Level 1:
  - L1CAL 401 : L1 calorimeter trigger
  - L1MUB 402 : L1 Muon Barrel
  - L1MUE 403 : L1 Muon EndCap
  - L1CTP 404 : L1 CTP
- Detectors:
  - TRCAL 411 : calorimeter trigger
  - TRIDT 431 : inner detector tracking
- Trigger slices/reconstruction:
  - TRBJT 421 : b-jet slice
  - TRBPH 422 : B physics slice
  - TRCOS 423 : cosmics slice
  - TRELE 424 : electron slice
  - TRGAM 425 : photon slice
  - TRJET 426 : jet slice
  - TRMET 427 : missing ET slice
  - TRMBI 428 : minimum bias slice
  - TRMUO 429 : muon slice
  - TRTAU 430 : tau slice

- Not filling DQ flags yet…
- Experts should be activated from 2nd November
- Inner Detector Trigger will probably start before that

Bugs…

- bug #57665: FATAL L2Result created with configuration keys (SMK,PSK) = (623,779) while EF uses (623,765)
  - https://savannah.cern.ch/bugs/?57665
- bug #54731: 15.3.1.1 - ERROR in TrigMuonEFTrackBuilderConfig (HLT taking too long)
  - https://savannah.cern.ch/bugs/index.php?54731
- bug #43990: Monitoring of L1 errors at HLT (Limit in nr. of L1 ROIs)
  - https://savannah.cern.ch/bugs/index.php?43990