



ECAL now



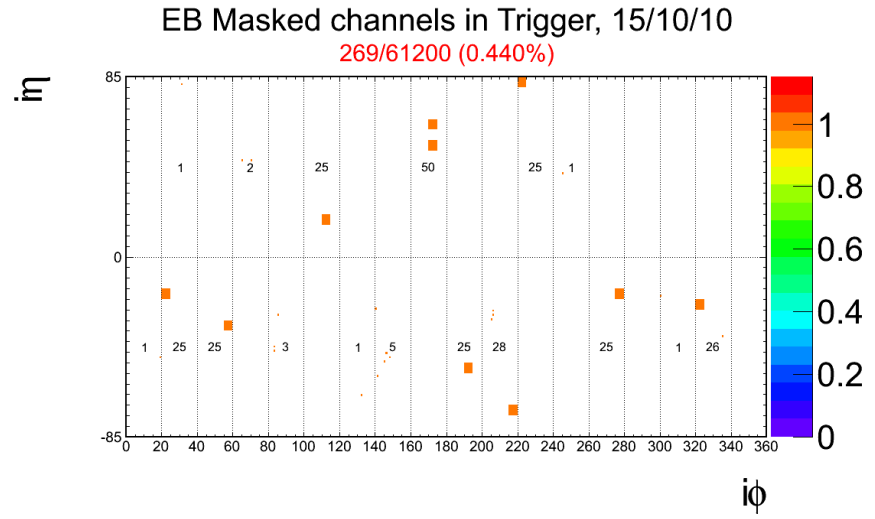
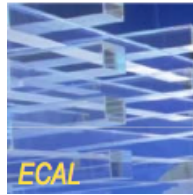
- ▶ ECAL is performing well
- ▶ Approaching TDR performance: any improvement at sub-percent level takes a lot of time and effort (calibration, stability, monitoring)
- ▶ Optical links are stable and working well

BUT

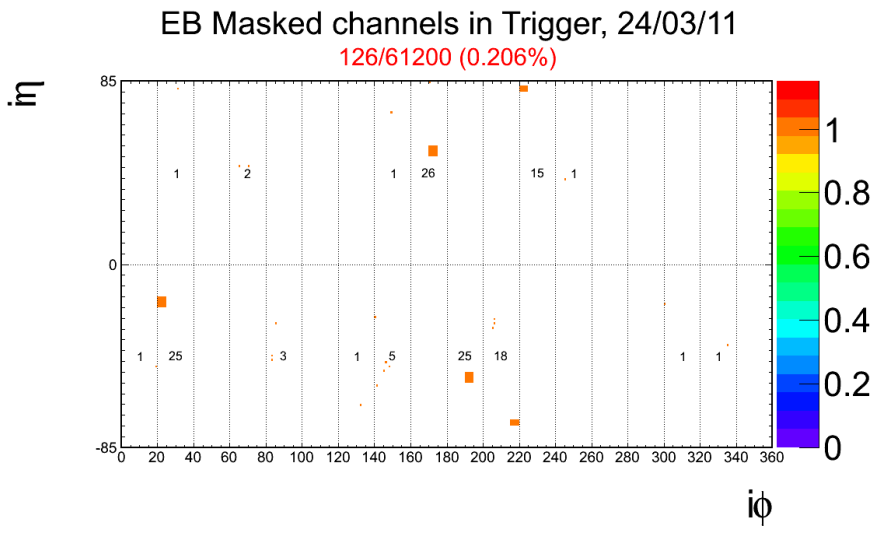
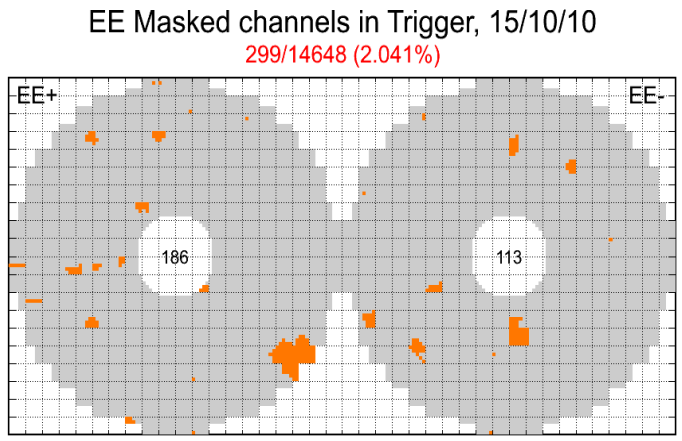
- ▶ Some new issues, which could be related to ageing and/or radiation damage of the optical components



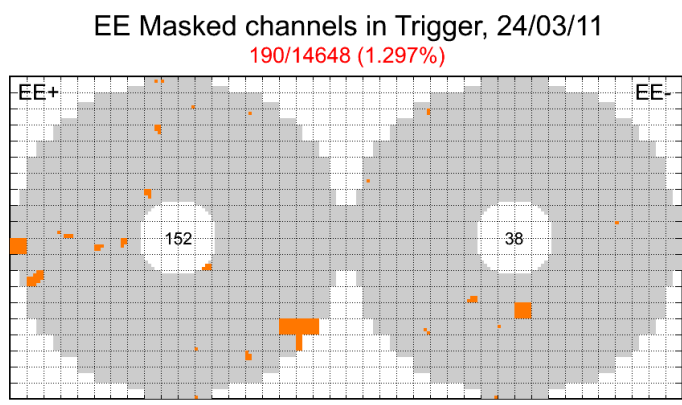
Good overall performance: reduced number of masked channels



2010
0.44% EB
2.04% EE



2011
0.21% EB
1.30% EE



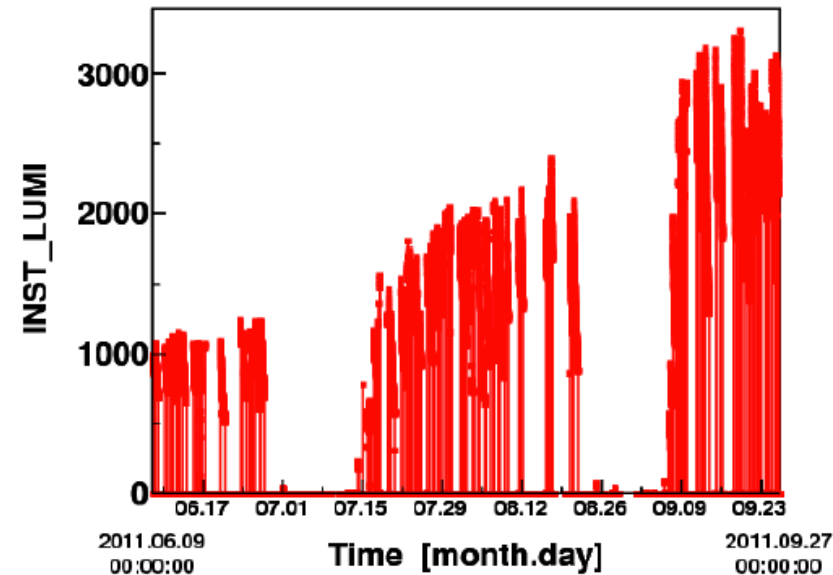


Data and Trigger links issues

- ▶ Instability of some data and trigger links: loss of sync, timeout, etc. were fixed by **decreasing** GOH laser bias current
 - ▶ 14 cases in 2011 (some new)
 - ▶ Both EE and EB
 - ▶ Bias current down to 16-22 (default = 32)
 - ▶ More or less uniform over the year → not directly linked to LHC luminosity
- ▶ In two cases: EE-7, TT3 and EB-12, TT15 decrease of laser bias current was not sufficient. The problem in both cases was fixed by the additional attenuator


Token ring issues

- 23 identified issues
 - 5 in EB, 17 in EE
 - [<http://goo.gl/ugHLJ>]
- Breakdown:
 - 1 before July TS
 - 0.5/fb during 155 hr SB
 - 7 from then to Sep TS
 - 1.4/fb during 305 hr SB
 - 15 since Sep TS
 - 1.2/fb during 160 hr SB



Token ring issues

- Huge variance:
 - 2105: 0 issues in 16:35 hours.
 - 2110: 4 issues in 06:19 hours.
- Very quiet this last week.
 - What changed in the LHC side?

All	EB	Part ials	Fill	CreateTime	Duration Stable	PeakInstLumi $\times 10^{30} \text{cm}^{-2} \text{sec}^{-1}$
			<i>LHC Fill Declared</i>		<i>HH:MM</i>	
			stable		122:60	3290.722
1			2103	2011.09.12 20:09:56	8:11	3157.045
			2104	2011.09.13 07:30:41	3:22	3096.048
4	1		2105	2011.09.13 19:17:18	16:35	3194.020
1	1		2110	2011.09.15 15:17:57	6:19	3203.089
			2117	2011.09.16 14:42:12	8:50	2901.064
			2124	2011.09.18 22:11:29	9:19	3264.458
			2126	2011.09.19 17:44:13	0:19	3144.483
			2127	2011.09.19 20:51:50	0:38	3290.722
2	1	2	2129	2011.09.20 05:50:33	10:20	3241.013
1			2135	2011.09.21 05:23:24	11:17	2328.413
2	1		2138	2011.09.22 00:52:13	6:30	2903.977
1			2140	2011.09.22 11:12:04	5:53	3020.304
			2143	2011.09.22 23:47:27	0:07	2801.635
			2144	2011.09.23 01:44:28	2:12	2338.992
			2147	2011.09.23 14:18:11	4:26	2787.667
			2150	2011.09.24 11:02:52	4:39	2712.181
			2151	2011.09.24 17:28:38	0:16	2690.606
1			2152	2011.09.24 22:28:36	2:17	2591.888
			2155	2011.09.25 11:38:49	0:36	3101.523
1			2156	2011.09.25 13:58:24	12:25	2965.965
			2157	2011.09.26 05:37:53	1:47	3162.532
			2158	2011.09.26 12:43:14	4:49	3020.358
			2160	2011.09.27 01:28:48	1:54	3027.555



Token ring issues, some details

Run time losses

- 1) DCC link errors or TO, FE settings not corrupted
3 cases, $3 \times 6 = 18$ minutes lost
stop-start sequence works
- 2) DCC link errors or TO, FE timing corrupted
3 cases, $3 \times 6 + 3$ next runs lost, 2.5 hours in total lost
stop-start sequence does not work, “green” reconfiguration works
- 3) The control on the TR completely lost.
1 case, 10 minutes lost, “red” reconfiguration works only

One of the possible explanations – loss of the optical signals from DOH, although other interpretations are considered.



ECAL optical system and related electronics Upgrade



- ▶ The possible VFE and FE upgrade (including optical links) will be discussed as soon as the experience on the existing system performance and radiation hardness will be gained (presumably 2013-2014). Right now no particular ECAL electronics upgrade plans

One particular issue: Spikes (NOT directly related to the optical system)

- ▶ Spike killing procedures, implemented both at trigger and reconstruction levels are working well. Hopefully will be sufficient at least for Phase I
- ▶ Possibilities of spike killing at the detector level (which imply VFE replacement, hence new optical links) are discussed “in a background” without significant investment of time and manpower