



Background analysis using FullSim: a preview

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Background Phone Meeting

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Bruno

- Long list of changes and fixes comparing to Frascati meeting (2 months ago)
 - Big memory leak when using TClonesArray (fixed by Eugenio)
 - Additional information on TParticle
 - After r430 the simulation is not running smoothly as before: hanging forever on some events, not only geometry dependent (same behavior using r465 with old geometry). More checks later, together with transition to packaged version...

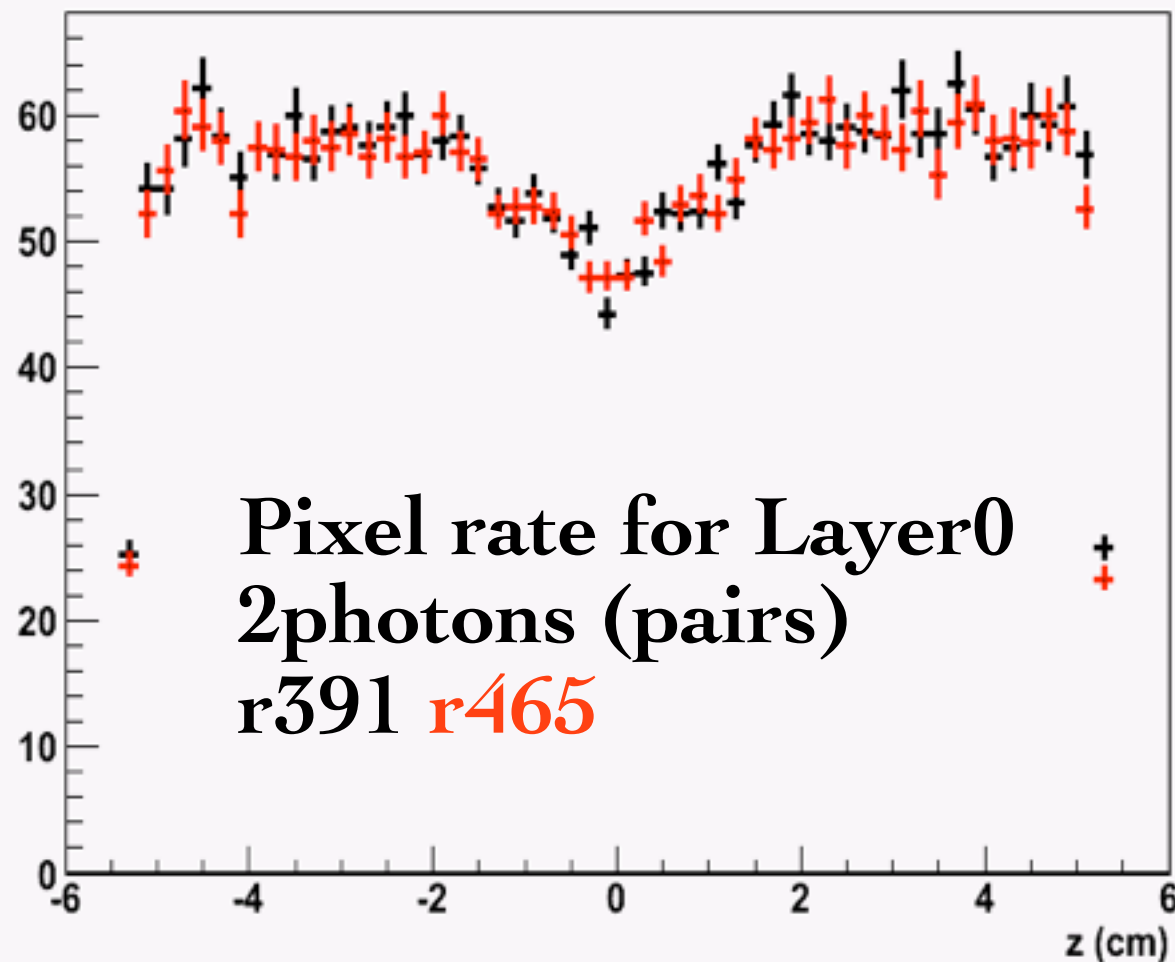
Productions

- New productions
 - RadBhabha, 20k evts, new final focus and magnetic configuration, 1mm step limit for Dch, full Truth Info
 - Issues when processing such a big ntuples, really slow, need to disable some minor features in my macro to run faster
 - Light version, 10k, no full Truth: much better...
- First look at the data, more plots in Elba talks

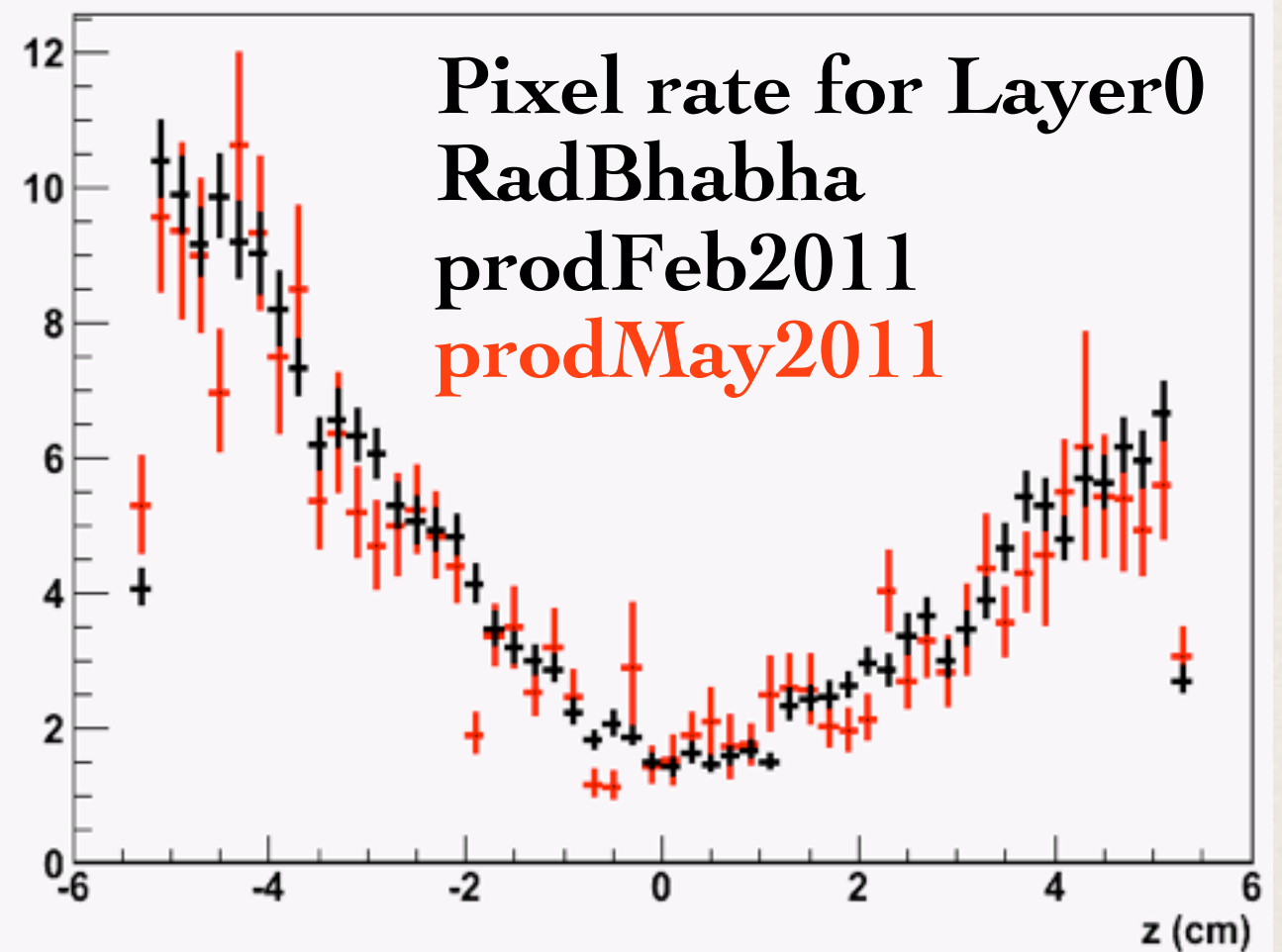
Svt Rates

- Not able to run the simulation using last revision for 2photon bkg (pairs)
 - Old geometry (pre-CIPE, V12-SF10 + plug and horse-shoe) and r465
- No significative changes in general

PixelsON distribution vs Z on Svt Layer 0



PixelsON distribution vs Z on Svt Layer 0



Rates L0,1,2, 2photons

- Serious bug in SVT outer layers geometry, now fixed
- Pixel rate, fluency and dose were under-estimated
- Cluster rate was overestimated

LAYER 1	Dec2010	May2011	
Cluster rate	0.43	0.22	MHz/cm2
Cluster multip	2.12	10.88	
Pixel rate	0.91	2.56	MHz/cm2
Fluency	5.40E+10	1.80E+11	cm-2
Dose	0.03	0.11	MRad

LAYER 0	Dec2010	May2011	
Cluster rate	6.44	6.37	MHz/cm2
Cluster multip	8.1	8.1	
Pixel rate	56.1	55.6	MHz/cm2
Fluency	4.79E+12	4.73E+12	cm-2
Dose	3.61	3.58	MRad

LAYER 2	Dec2010	May2011	
Cluster rate	0.23	0.12	MHz/cm2
Cluster multip	1.98	10.54	
Pixel rate	0.48	1.31	MHz/cm2
Fluency	2.91E+10	9.80E+10	cm-2
Dose	0.017	0.057	MRad

Rates L3,4,5 2photons

- Studies are still ongoing, need to estimate strip rates
- More details about real detector specifications (striplets, pitches)
- Here 50x50um pixels only

LAYER 4	Dec2010	May2011	
Cluster rate	7.2	5.8	kHz/cm2
Cluster multip	1.63	7.68	
Pixel rate	11.9	31.6	kHz/cm2
Fluency	5.90E+08	1.88E+09	cm-2
Dose	0.5	1.8	kRad

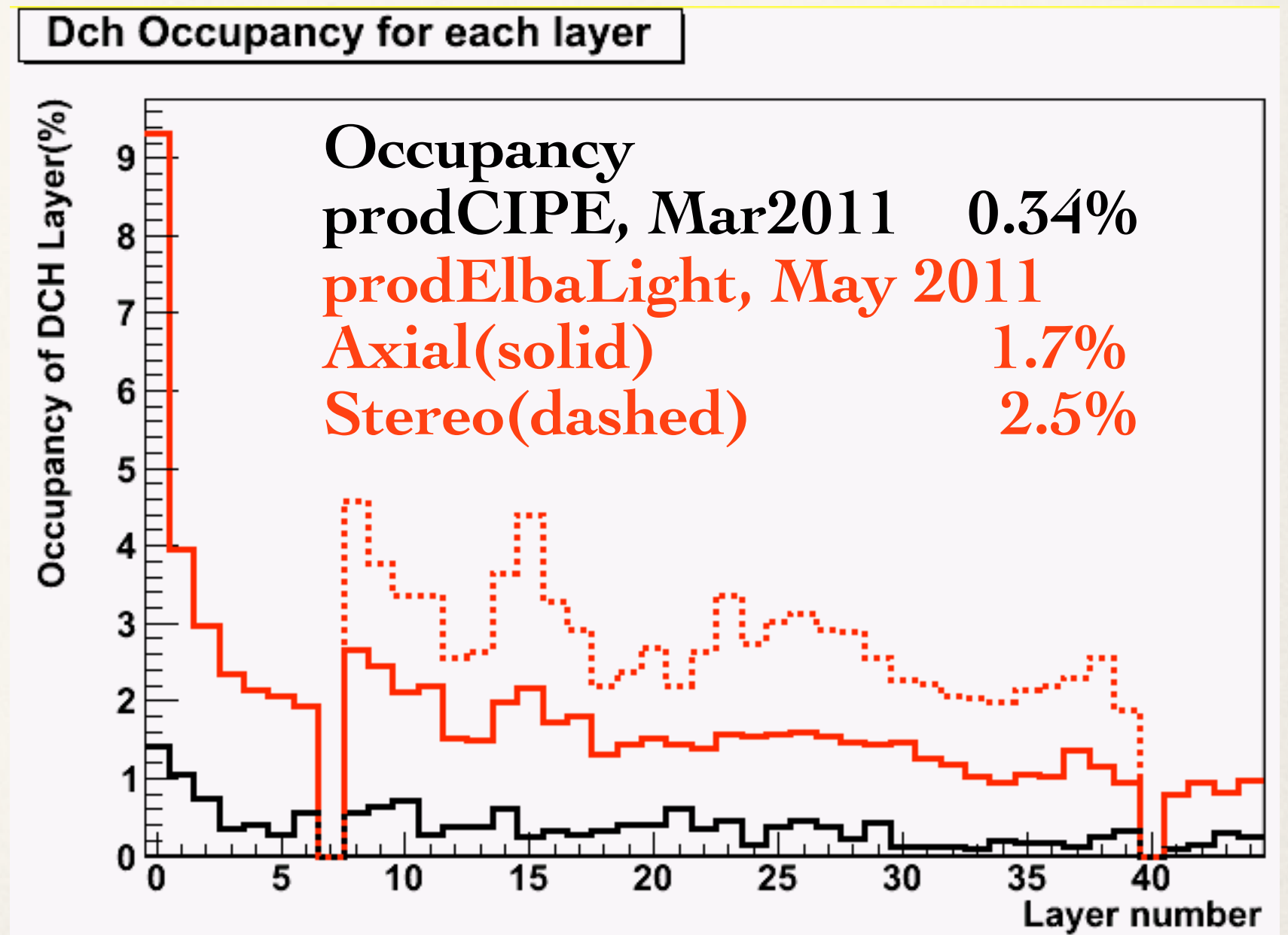
LAYER 3	Dec2010	May2011	
Cluster rate	67.2	37.6	kHz/cm2
Cluster multip	1.91	9.96	
Pixel rate	131	342	kHz/cm2
Fluency	7.95E+09	2.57E+10	cm-2
Dose	5	15	kRad

LAYER 5	Dec2010	May2011	
Cluster rate	3.8	3.4	kHz/cm2
Cluster multip	1.66	6.97	
Pixel rate	6.1	15.3	kHz/cm2
Fluency	2.18E+08	7.00E+08	cm-2
Dose	0.3	1.0	kRad

Dch occupancy

- Both productions with 1mm step limit
- Increase in occupancy?

- Stereo contribution is now evident



Conclusions

- Most of the time spent fixing and debugging the code, but still work to do and need to move to the packaged version
- Detailed study requested from SVT: multiplicity and strip rate (real detector pitches)
 - By-product, fix a bug in outer layers
- Dch occupancy is higher with new geometry?
- See you in Elba with more stuff also on Drc, Etd and detector hall

