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# Values

## Toy Models

under svn: <https://svn.cern.ch/repos/lhchcg/trunk/cms/tests/> (rev 124)

names for workspace, modelconfig, dataset: w, ModelConfig, data\_obs

Workspace	Method	Code	Result	Notes	
counting-B5p5-Obs6-Syst30B	PL	Giovanni	7.09868		
		Mingshui	7.09867		
		Aaron	7.09886		
	LEP	Giovanni		$7.30 \pm 0.06$	P-vals for r=7: CLb = $0.646 \pm 0.006$ ; CLsplusb = $0.0422 \pm 0.0013$
				$7.33 \pm 0.02$	Cross-check that running from a grid works
		Mingshui	$7.30 \pm 0.01$	P-vals for r=7: CLb = $0.655 \pm 0.005$ ; CLsplusb = $0.041 \pm 0.002$	
	LHC	Giovanni	$7.10 \pm 0.05$	P-vals for r=5: CLb = $0.608 \pm 0.003$ ; CLsplusb = $0.0939 \pm 0.0009$	
		Mingshui	$7.18 \pm 0.11$	P-vals for r=5: CLb = $0.608 \pm 0.004$ ; CLsplusb = $0.095 \pm 0.003$	
		Aaron	$7.13 \pm 0.02$	P-vals for r=5: CLb = $0.608 \pm 0.002$ ; CLsplusb = $0.0949 \pm 0.0005$	
	counting-B5p5-Obs6-Syst30S	PL	Giovanni	7.41476	
Mingshui			7.41452		
Aaron			7.41423		
LEP		Giovanni	$7.62 \pm 0.11$	P-vals for r=7: CLb = $0.418 \pm 0.006$ ; CLsplusb = $0.0876 \pm 0.0018$	
		Mingshui	$7.61 \pm 0.04$	P-vals for r=7: CLb = $0.687 \pm 0.005$ ; CLsplusb = $0.069 \pm 0.003$	
LHC		Giovanni	$7.38 \pm 0.02$	P-vals for r=5: CLb = $0.614 \pm 0.003$ ; CLsplusb = $0.0886 \pm 0.0009$	
				P-vals for r=5: CLb = $0.6105 \pm 0.0014$ ; CLsplusb = $0.0907 \pm 0.0004$ Again with RooStats, just larger statistics	
		Giovanni(2)		P-vals for r=5: CLb = $0.6121 \pm 0.0014$ ; CLsplusb = $0.0906 \pm 0.0004$ RooFit-independent code <a href="#">↗</a>	
		Mingshui	$7.40 \pm 0.06$	P-vals for r=5: CLb = $0.612 \pm 0.004$ ; CLsplusb = $0.0904 \pm 0.003$	
Aaron		$7.38 \pm 0.03$	P-vals for r=5: CLb = $0.616 \pm 0.002$ ; CLsplusb = $0.0909 \pm 0.0005$		

<sup>A</sup> It was typo "r=5"

Best fit values of the nuisance parameters for LHC frequentist:

Workspace	Code	Result ( $\mu = 0$ )	Result ( $\mu = 5.0$ )	Notes
counting-B5p5-Obs6-Syst30B	Giovanni	0.095151	-0.49363	
	Mingshui	0.095156	-0.49383	
counting-B5p5-Obs6-Syst30S	Giovanni	0 ( <i>exact</i> )	-0.46005	
	Mingshui	0 ( <i>exact</i> )	-0.46011	

## CMS Toy Models

under svn: <https://svn.cern.ch/repos/lhchcg/trunk/cms/toy-gg.WW.ZZ41-comb/> (rev 124)

names for workspace, modelconfig, dataset: w, ModelConfig, data\_obs

Workspace	Method	Code	Result	Notes
cms-zz-mh140	PL	Giovanni	1.16787	
	LEP	Giovanni	1.805 ± 0.018	P-vals for r=1.7: CLb = 0.329 ± 0.004; CLsplusb = 0.0189 ± 0.0006
	LHC	Giovanni	1.691 ± 0.004	P-vals for r=1.7: CLb = 0.285 ± 0.001; CLsplusb = 0.0139 ± 0.0001
		Mingshui	1.689 ± 0.008	P-vals for r=1.7: CLb = 0.295 ± 0.002; CLsplusb = 0.0144 ± 0.0004
	Aaron	1.66 ± 0.04	P-vals for r=1.7: CLb = 0.31 ± 0.01; CLsplusb = 0.013 ± 0.001	
cms-gg-mh140	PL	Giovanni	4.29972	
	LEP	Giovanni	3.805 ± 0.029	P-vals for r=4: CLb = 0.648 ± 0.006; CLsplusb = 0.0290 ± 0.0010
	LHC	Giovanni	3.96 ± 0.01	P-vals for r=4: CLb = 0.688 ± 0.003; CLsplusb = 0.0343 ± 0.0007
	LHC	Mingshui	3.98 ± 0.02	P-vals for r=4: CLb = 0.688 ± 0.003; CLsplusb = 0.0344 ± 0.0009
	LHC	Aaron	4.0 ± 0.04	P-vals for r=4: CLb = 0.662 ± 0.01; CLsplusb = 0.033 ± 0.002
	Asymptotic CLs	Aaron	3.96289	
cms-ww-mh140	PL			
	LHC	Mingshui	0.501 ± 0.007	
		Aaron	0.526 ± 0.006	P-vals for r=0.5: CLb = 0.186 ± 0.003; CLsplusb = 0.0110 ± 0.0003
		Giovanni	0.517 ± 0.003	P-vals for r=0.50: CLb = 0.183 ± 0.004; CLsplusb = 0.0110 ± 0.0006 P-vals for r=0.55: CLb = 0.182 ± 0.004; CLsplusb = 0.0075 ± 0.0005 (error could be underestimated, but it's definitely between 0.50 and 0.55)
cms-combined-mh140	PL			
	LHC	Mingshui	0.401 ± 0.005	
		Aaron	0.439 ± 0.005	
		Giovanni	0.418 ± 0.008 0.431 ± 0.006	New NLL code Old NLL code (and different random seed)
	Asymptotic CLs	Aaron	0.43459	

## ATLAS Toy Workspaces

under svn: `trunk/atlas` (rev 124)

Workspace	Method	Code	Result	Notes	Workspace/ModelConfig/Dataset
ZZ/ATLAS_H_4l_140_[...].root	LEP	Giovanni		P-vals for r=4: CLb = 0.755 ± 0.008; CLsplusb = 0.0421 ± 0.0020	combined, ModelConfig, asimovData
	LHC	Aaron	4.25 ± 0.02		
		Giovanni	4.32 ± 0.05	with fixed code	
gamgam/gg_140.root	LHC	Aaron	5.80 ± 0.03		WS, ModelConfig, dataset
		Giovanni	5.76 ± 0.02	P-vals for r=6: CLb = 0.498 ± 0.007; CLsplusb = 0.020 ± 0.001	
HWW_Njet_ext/ww2l_140.root	PL	Giovanni	0.707268		ws, modelConfig, data
	LEP	Giovanni		P-vals for r=0.7: CLb = 0.458 ± 0.010; CLsplusb = 0.0954 ± 0.0029	
	LHC	Aaron	0.76 ± 0.02	taken from email	
		Giovanni	0.760 ± 0.010	with fixed code	
	Asymptotic CLs	Aaron	0.746597		
comb_HWW_Njet_gamgam_zz/140_uncorr_zz.root	PL	Giovanni	0.594858		combWS, ModelConfig, combData
	LHC	Aaron	0.674 ± 0.022	taken from email	
		Giovanni	0.667 ± 0.009	with fixed code	

## Combination

ATLAS version:

## FrequentistLimitsHandshake < LHCPHysics < TWiki

- under svn:  
[https://svn.cern.ch/repos/lhchcg/trunk/combination/atlas\\_version/140\\_update.root](https://svn.cern.ch/repos/lhchcg/trunk/combination/atlas_version/140_update.root) (rev 203)
- names for workspace, modelconfig, dataset: combWS, ModelConfig, combData

CMS version:

- under svn:  
[https://svn.cern.ch/repos/lhchcg/trunk/combination/cms\\_version/toy-gg+ww+zz/comb\\_withzz-mh1](https://svn.cern.ch/repos/lhchcg/trunk/combination/cms_version/toy-gg+ww+zz/comb_withzz-mh1) (rev 193)
- names for workspace, modelconfig, dataset: w, ModelConfig, data\_obs

Workspace	Method	Code	Result	Notes
Atlas version	PL	Aaron	0.373875	
		Giovanni	??	
	LHC	Aaron	$0.408 \pm 0.014$	
CMS version	PL	Giovanni	0.37385	
		Aaron	0.373918	
	LHC	Giovanni	$0.410 \pm 0.005$	

# Timing

Workspace	Method	Code	Time/toy	Notes
Atlas ZZ	LEP	Giovanni	0.07 s	
	LHC	Giovanni	0.53 s	
Atlas WW	LEP	Giovanni	0.62 s	
	LHC	Giovanni	6.6 s	
Atlas Comb	LHC	Giovanni	13 s	
CMS	LEP	Giovanni	0.09 s	
	LHC	Aaron	1.8 s	
	LHC	Giovanni	1.0 s	
CMS Comb	LHC	Aaron	25 s	
CMS Comb	LHC	Giovanni	6.4 s	
All Comb	LHC	Aaron	77s	
All Comb	LHC	Giovanni	47 s !!	

Notes:

- for Giovanni's measurement, the time is averaged between S+B toys and B-only toys with fractions 80%/20% (that's the mixture the code throws when computing CLs)

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This topic: [LHCPhysics > FrequentistLimitsHandshake](#)

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