

# Analysis status and plans for ECC “standard” tests

- ◆ What is done
  - ◆ Data sets
  - ◆ Observed problems
  - ◆ Finished analyzes
- ◆ Still to be done
  - ◆ Ongoing analyzes
  - ◆ More detailed studies
- ◆ Points for discussion
  - ◆ Where to put results
  - ◆ What to store

# Analysis status and plans for ECC “standard” tests

## ◆ What is done

- ◆ 8 measurements per half-quadrant, data on castor:  
[/castor/cern.ch/user/a/atlashec/wheeltest](http://castor.cern.ch/user/a/atlashec/wheeltest)  
the same format as during the modules cold tests
- ◆ Due to disk problem during measurement, we lost a noise data file from one run (Q7, FEBs 1,3,5)
- ◆ All noise, shape and standard ramp measurements analyzed, results sent around (see Leonid's talk)
- ◆ Some TDR results confirmed, some not seen so far
- ◆ Xtalk also analyzed for predefined pattern, level as expected ~2-3%, maximum seen 5%
- ◆ Some coherent noise study done, some still ongoing (comparison with the FEC test mainly)

# Analysis status and plans for ECC “standard” tests

## ◆ Problems

- ◆ Many bad channels in readout (wrong in all measurements)

List of not measured or problematic readout channels

Quadrant	FEB	FEB ch.	Mod.	L. seg.	Pad	RO ch.	ATLAS ch.
All	5	29	2	2	12		120 200
	3	33	1	1	13		145 161
	3	44	2	4	13	distorted - reflection	156 172
	5	71	3	3	18		215 327
	1	93	4	1	4		317 93
	1	124	4	4	7		332 124
	3	111	4	3	14		359 239
	6	29	6	2	12		120 200
	4	33	5	1	13		145 161
	6	44	2	4	13	distorted - reflection	156 172
	6	71	7	3	18		215 327

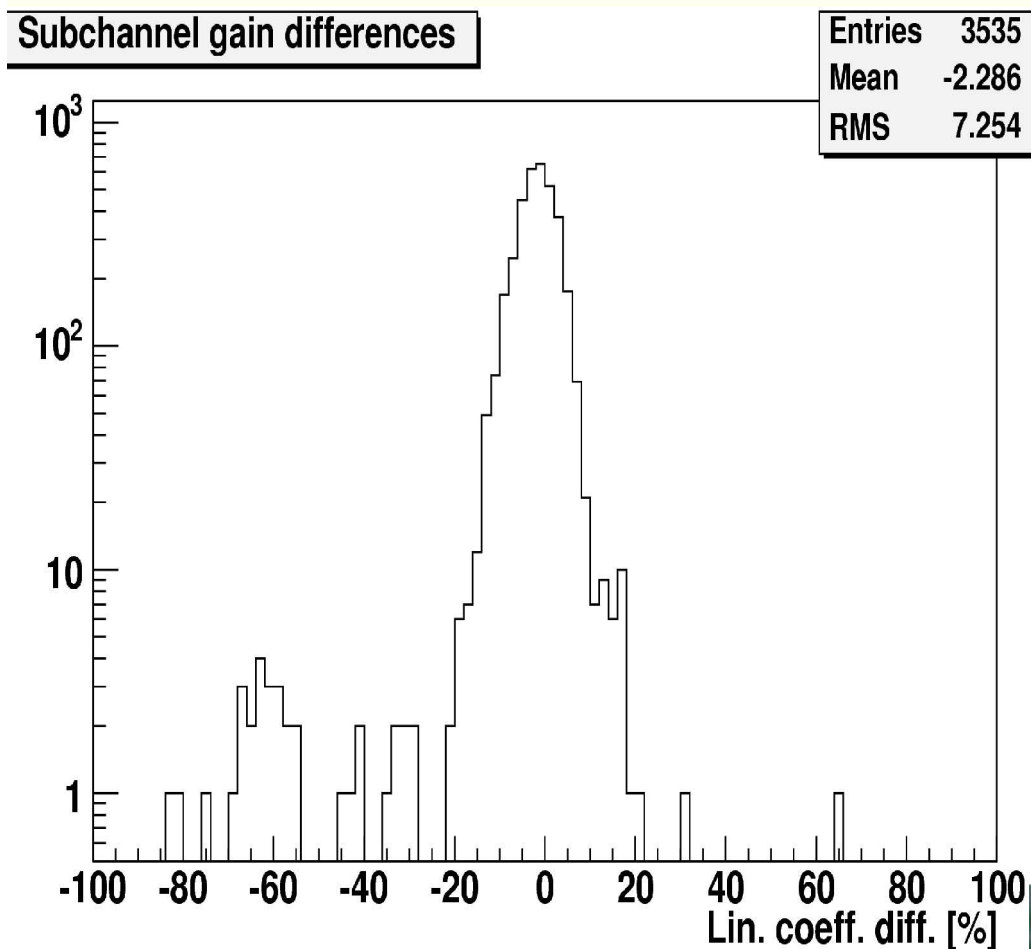
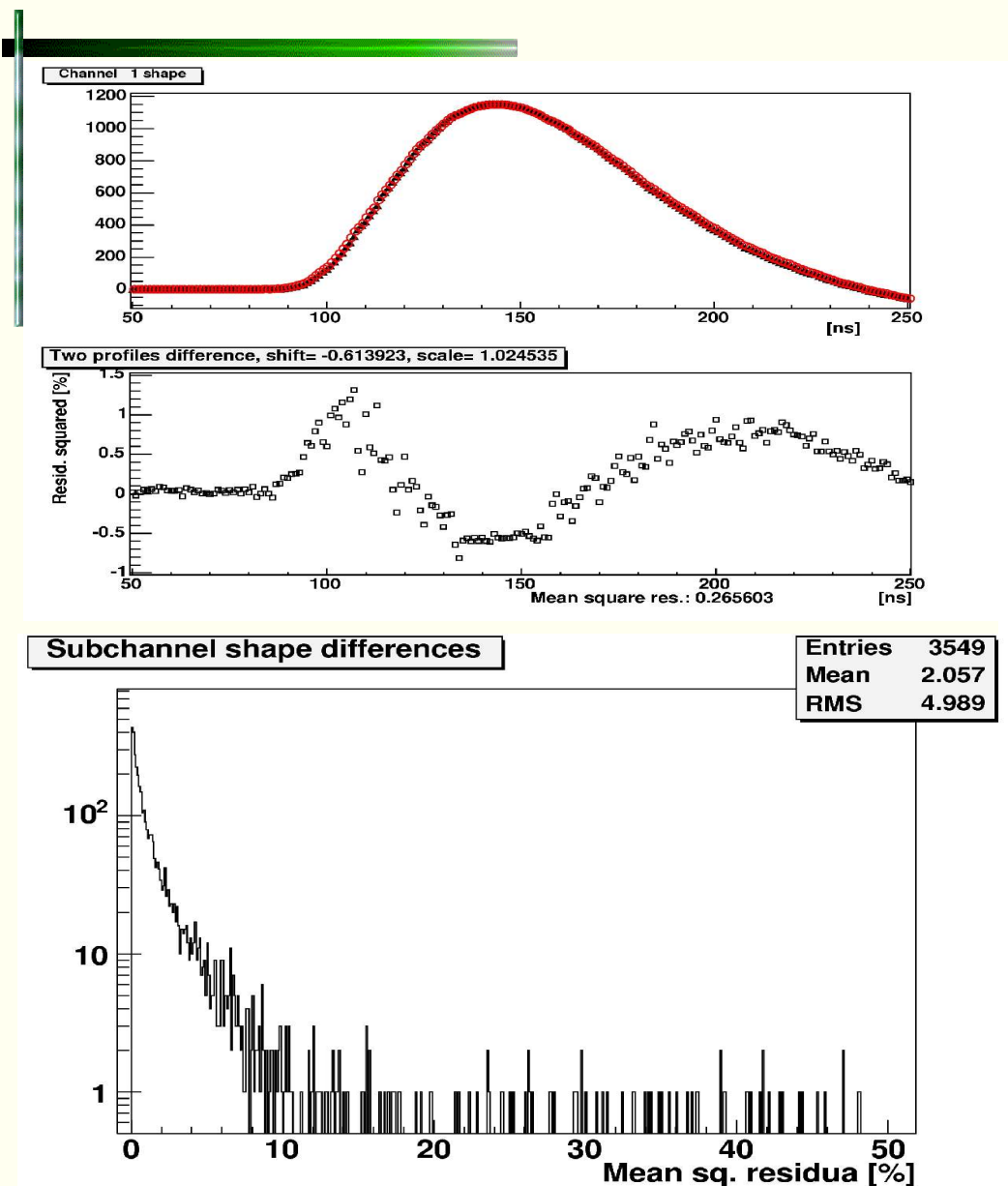
- ◆ **3 dead channels** (2 seen in TDR meas., 2 in Q5 already confirmed in FEC test data), could be more because chan. in previous table not analyzed (must be done “manually”)  
**1 broken calibration line** after splitting – no calibration for 2 channels,  
few problematic channels (lower gain, shape distortions)

# Analysis status and plans for ECC “standard” tests

## ◆ Still to be done

- ◆ Detailed checking of problematic channels (try to fit with the full electronics model ?)
- ◆ Try to draw some “overall picture” about wheel
  - ◆ First trial – compare the same channels from all 8 runs, they have the same electronics channels. Comparison for the shape differences and gain on next slide
  - ◆ More elaborated comparisons ?
- ◆ Finish the coherent noise study – other clustering than per module layer (groups of 4/8/16/32 neighboring ch. on FEB going on, other suggestions ? )
- ◆ Current (**very preliminary**) estimation of coherent noise  $\sim 4\%$ , coming from the direct noise excess factors

# Analysis status and plans for ECC “standard” tests



# Analysis status and plans for ECC “standard” tests

- ◆ Open questions (for me)
  - ◆ Should we put anything in the DB ?
    - ◆ If yes, to which one (production only ?, CondDB)
    - ◆ If yes, what exactly
  - ◆ Where we will store the non-DB results (shapes, x-talk values,.....) ?
  - ◆ Do we store results from both wheels together, or separately for each one ?