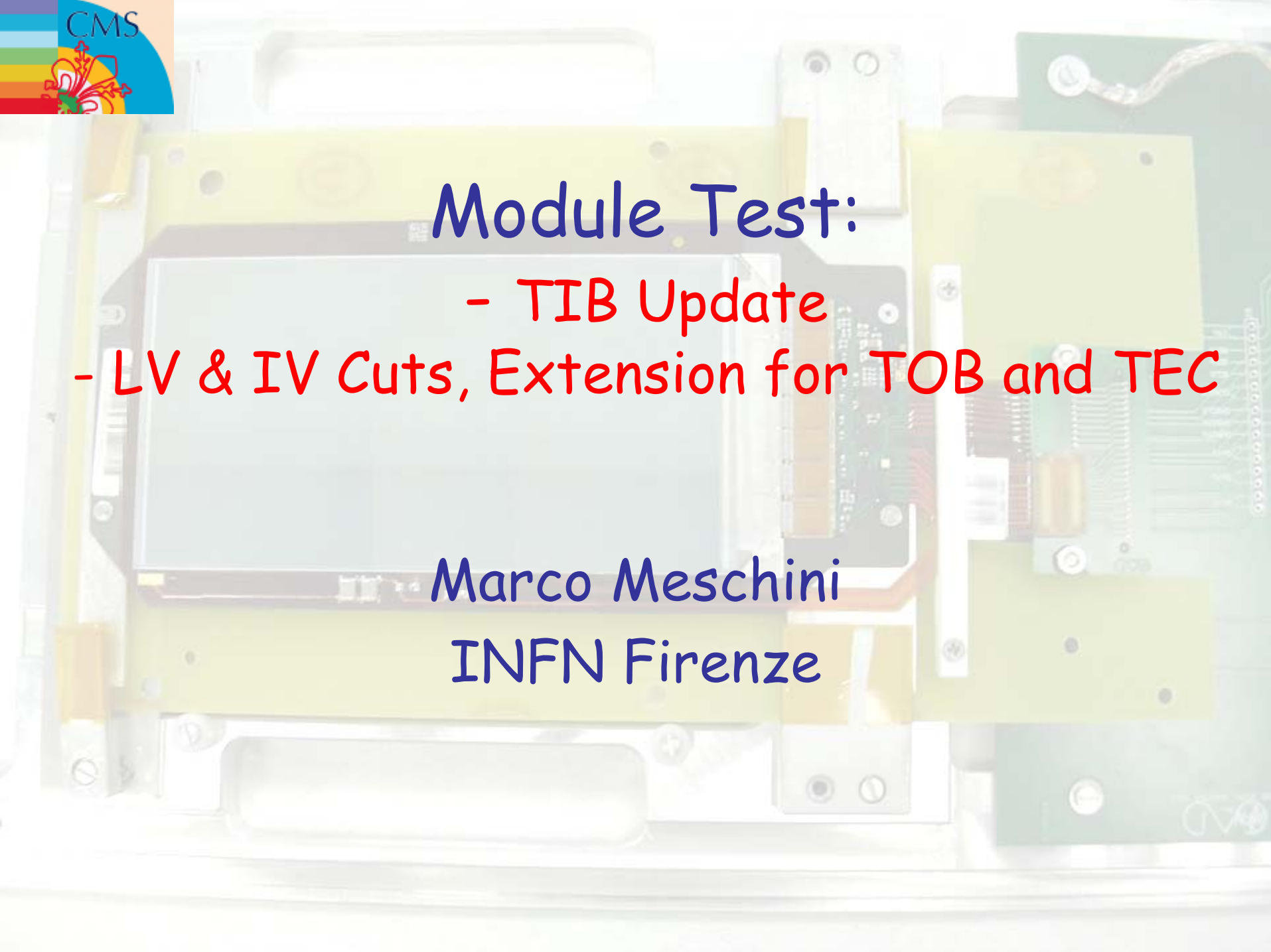


Module Test:

- TIB Update

- LV & IV Cuts, Extension for TOB and TEC

Marco Meschini

INFN Firenze

The Situation from Module Test Webpage

Last Update: Marco Meschini meschini@fi.infn.it 28 June 2005

Module Test Monitor (Results from Tracker DB)

28 June 2005	TIB	TOB	TEC
ARC Tested Modules	1840	1735	1481
Good Modules	1819	1728	1447
Bad Modules	21	7	34
Bad Strip % on Good Modules	0,09	0,09	0,14
LT Tested Modules	1796	1535	537
Good Modules	1793	1527	531
Bad Modules	3	8	6

Plots on Module Tests

- Module Test Results
- Module Test Meetings

Links

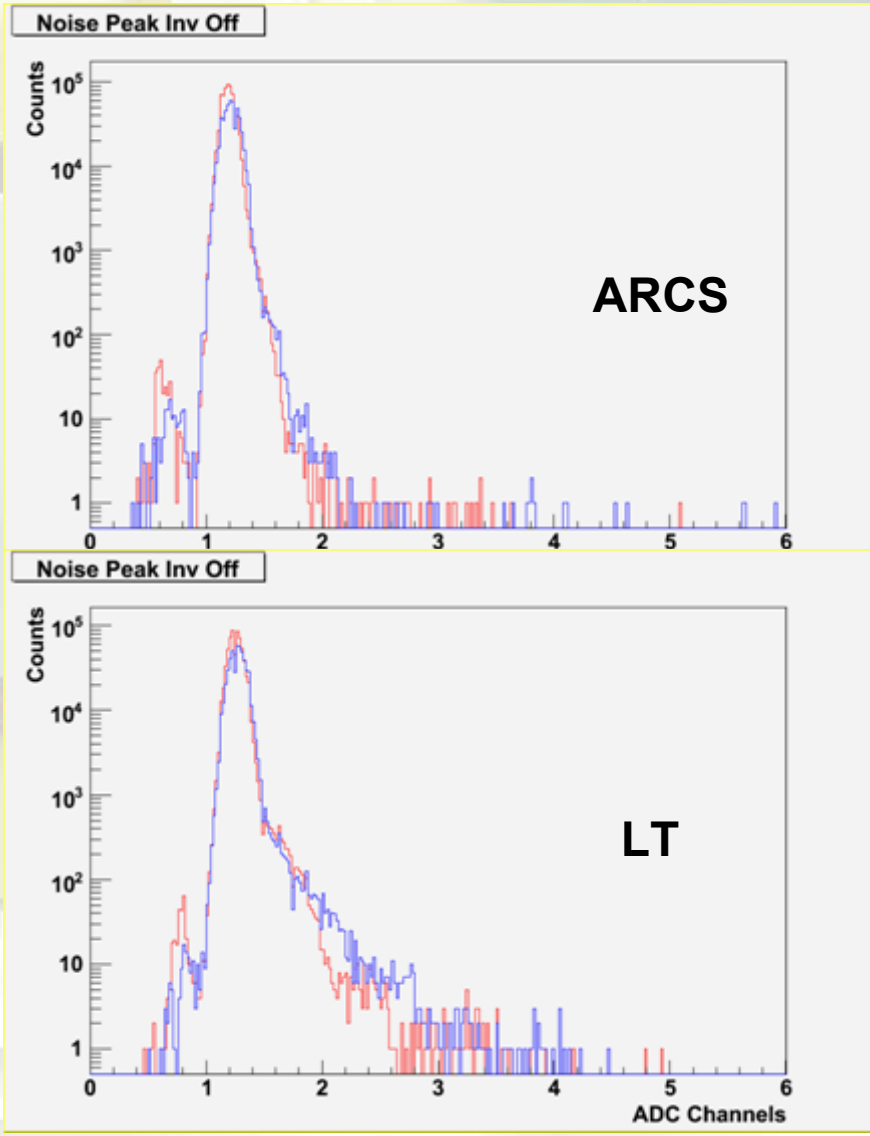
TIB Status

4 APVs

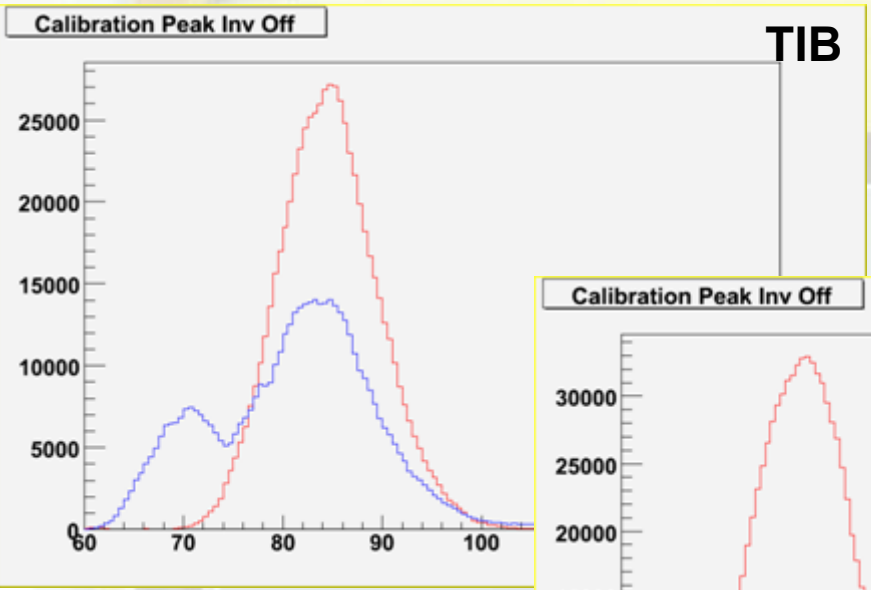
6 APVs

Results from DB, updated on June 15

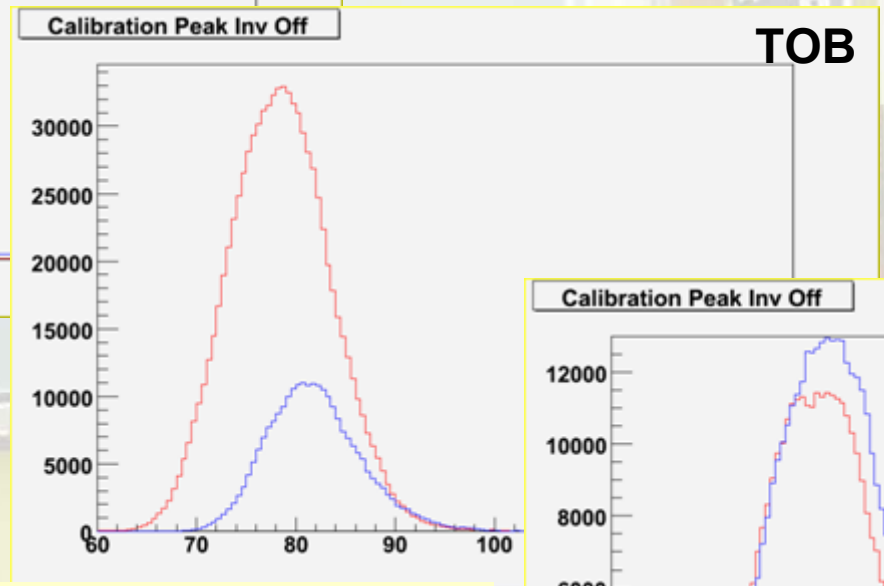
- Tested modules:
  - ARCS
    - Total: 1840
    - Good: 1819
    - Bad: 21
    - 0.15% bad strips incl. bad modules
    - 0.09% bad strips on good modules
  - LT
    - Total: 1796
    - Good: 1793
    - Bad: 3



Calibration

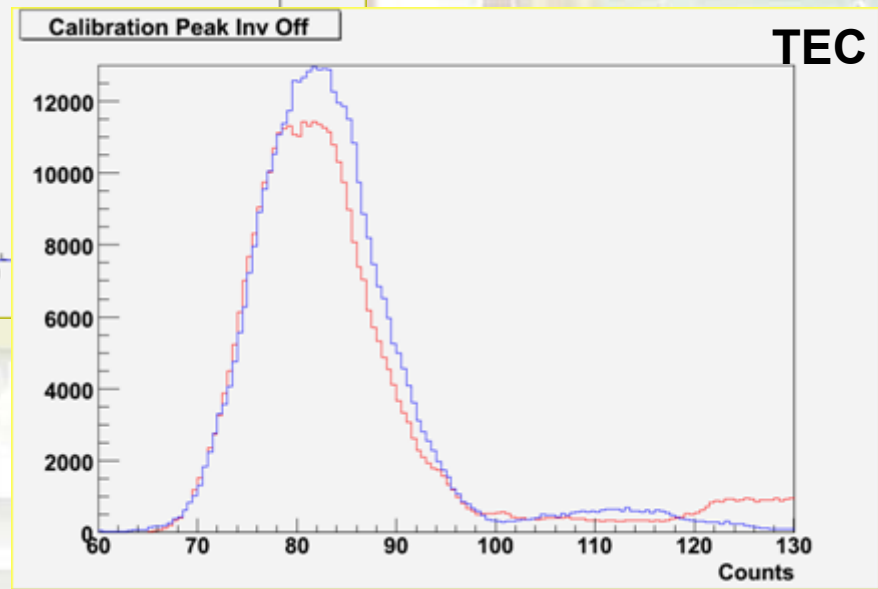


Calibration max amplitude in Peak Inv Off with ARCS

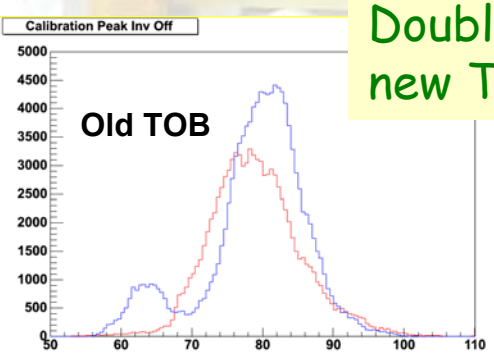


4 APVs

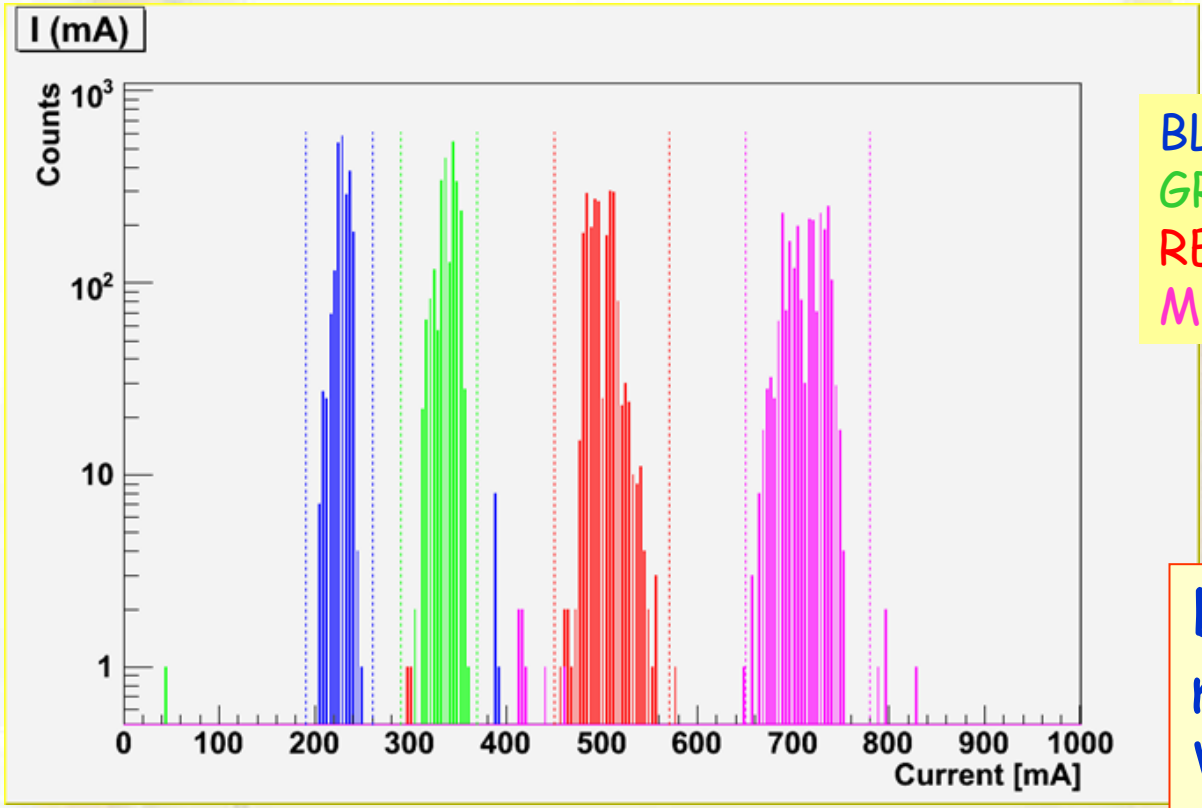
6 APVs



Double peak disappeared in new TOB data!



Low Voltage Currents (TOB+TIB+TEC)



BLUE = 1.25 V (4 APVs)
GREEN = 1.25 V (6 APVs)
RED = 2.50 V (4 APVs)
MAGENTA = 2.50 V (6 APVs)

Distribution from all modules in DB: Vertical bars cuts can be applied to TOB and TEC modules as well

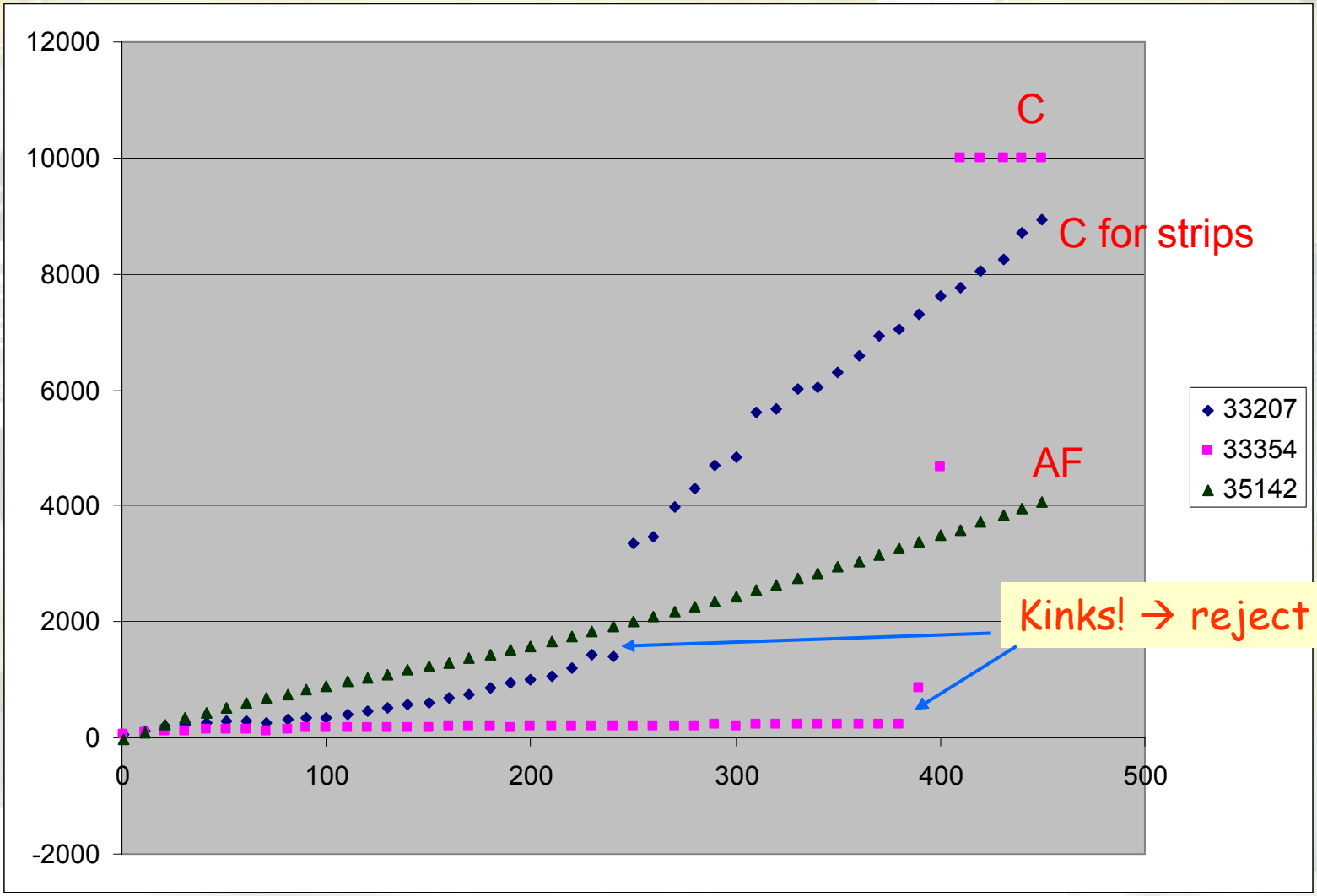
4 chips:
0.19 A < I125 < 0.26 A
0.45 A < I250 < 0.57 A
6 chips:
0.29 A < I125 < 0.37 A
0.65 A < I250 < 0.78 A

Cuts adopted in TIB (since ARC 8.0)

TIB Ileak Update

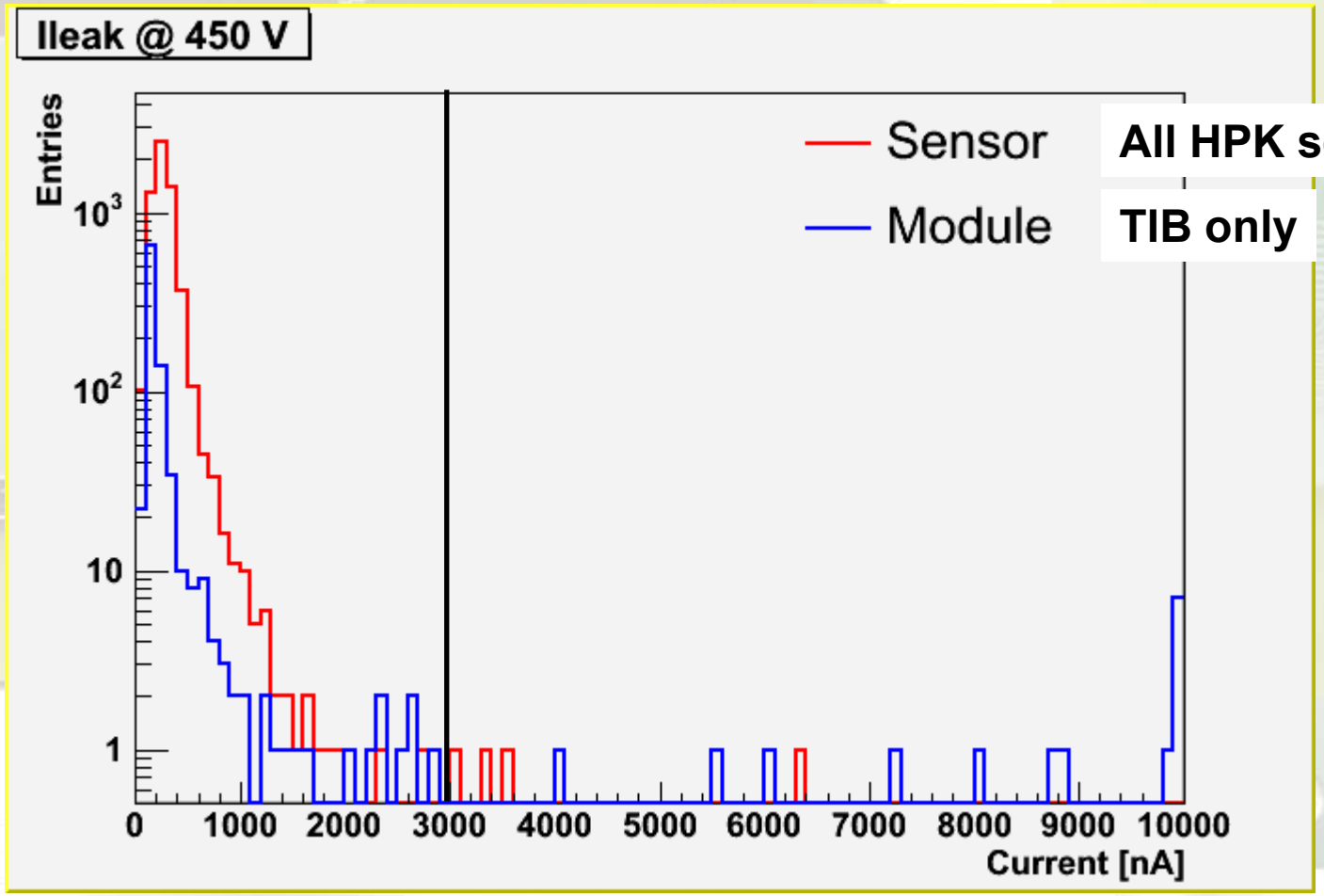
- From Ileak data on Tracker DB we found, on the overall TIB production (updated July 11, no change since June):
  - 8 modules with 3 μA < Ileak < 10 μA
    - 1 with 11 bad strips → grade C
    - 2 with "bad" IV curves → grade AF
    - 5 of them good → grade A
- Note: Many "good for strip" modules (grade A or B) flagged F for IV are not yet in the DB
- F meant (until June 05) Imod(@450V) > 5 x Isens(@450V)

Example of TIB Critical IVs (<10 μA)



Ileak for HPK Sensors & Modules

Last update May 20, 2005



ModTest TIB VRVS Meeting May 23

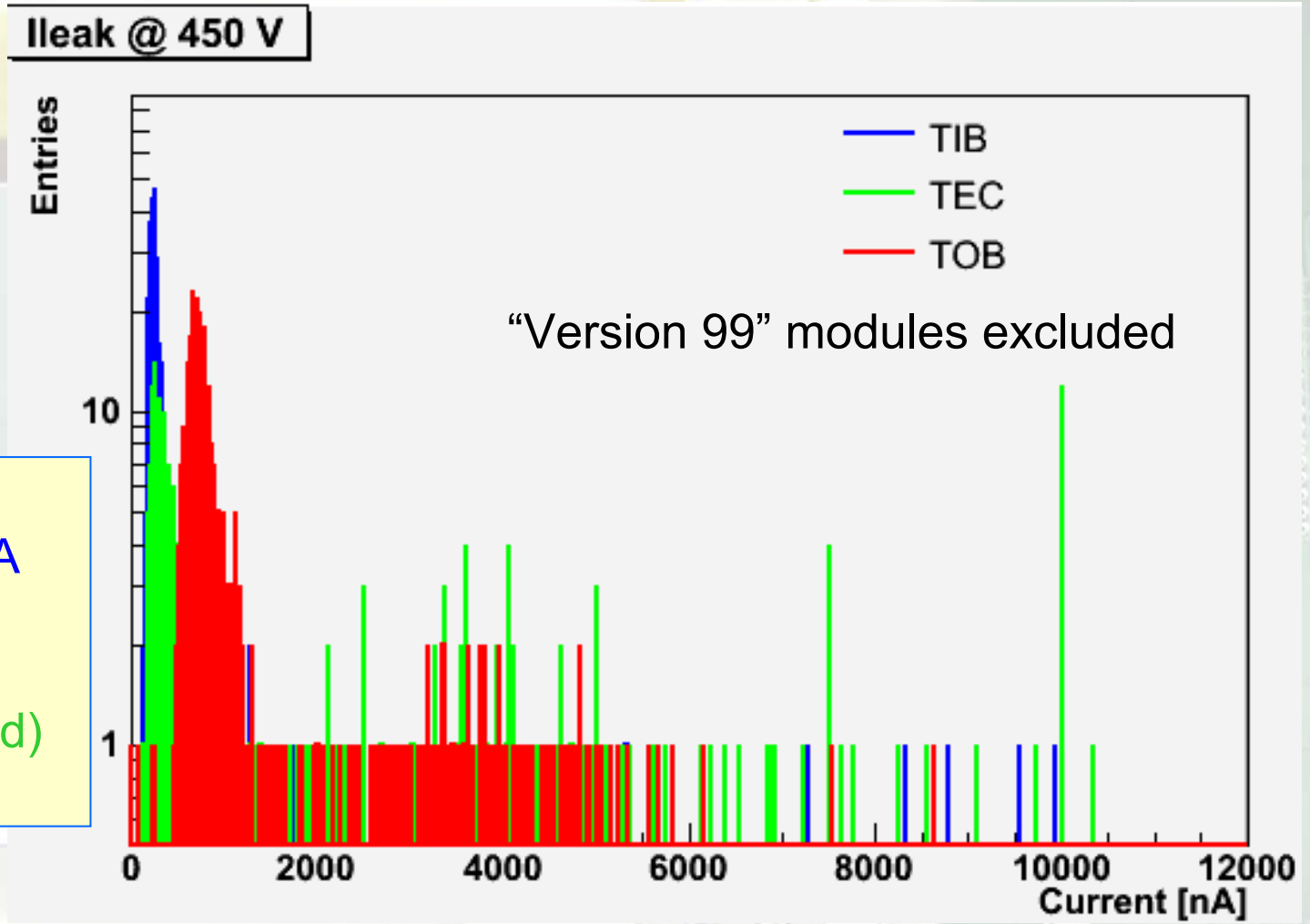
- The new TIB strategy is:
  - Remove the cut 5 x Isens
  - Compensate in xFLAG I(@450 V) wrt the temperature:
    - Rescale Ileak measured in ARC test to a temperature of 23°C
    - > 3 μA → grade F
      - Must be checked by hand (should be a small number of modules!)
    - > 10 μA → grade C
    - Local L3 should check and Accept/Reject modules

Open Issues on IV

- Discuss with TOB and TEC: are these new cuts applicable to TOB and TEC? Now many HPK sensors are in modules
- Rescale cuts for 2 sensor modules?
- Modules built with HPK vs ST sensors: need different cuts

- Bilei's table "BAD for IV" 65 modules in total, mostly (45, to be discarded) in TIB early production, no new ones

Leakage Current for All Modules in DB



Modules with
3μA<I(450V)<10μA

TIB 8 (6 good)
TEC 108 (101 good)
TOB 90 (90 good)

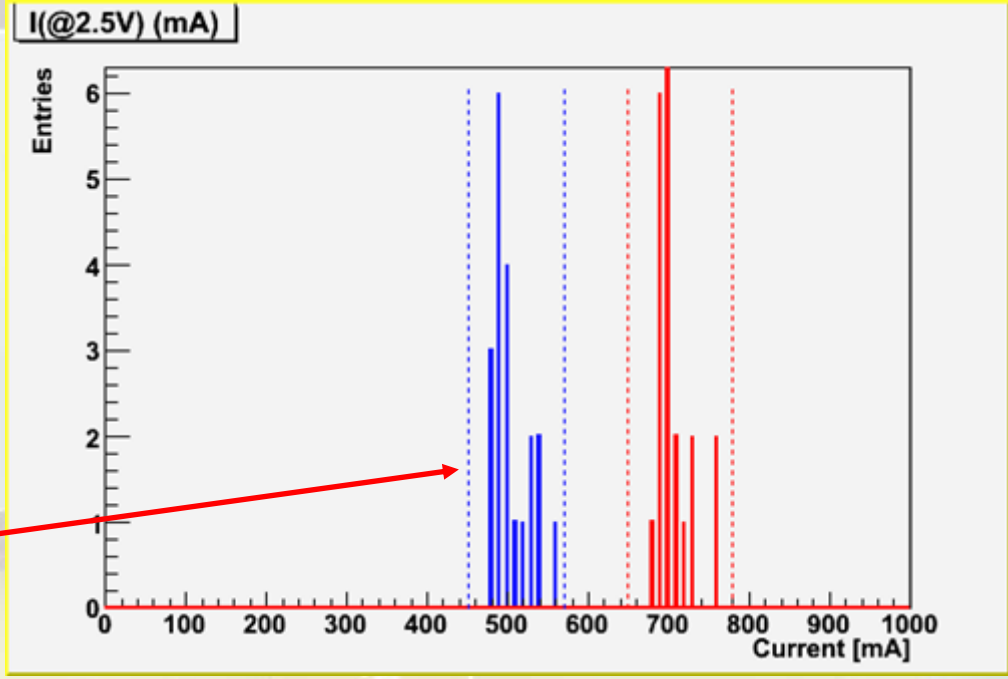
DEAD Channels

4 APVs

6 APVs

- In TIB we found 42 dead channels in the whole production
  - Some of them were identified as PHL- by the old versions of xFLAG
  - Only very few of these channels can cause an increase in 2.5 V current, almost invisible in LV Current distribution
- TOB has 2 dead ch's
- TEC has 66 dead ch's

Updated June 15



To avoid risks, the safest way is to remove bonding in all the PHL± and DEAD (SATURATED) channels identified by ARC, flag=2048

SW Update

- ARCS 8.0 and 8.1 released and tested, now operational in TIB (at least…)
- A new version of xFLAG (1.8.0) has been released in June:
  - Working on ARCS 8 output
  - Implementation of new F grading strategy
  - Control of I vs reached Vmax
  - Better control on DCU temperature readings
  - Now DEAD and channels with very low inverter output (INV) are identified correctly also in marginal cases
    - This has been tested in the whole TIB production with good results