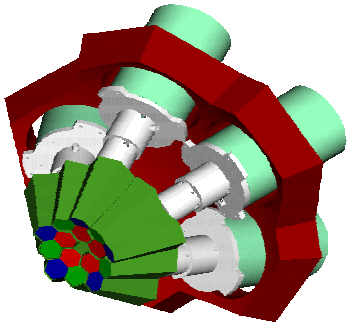
INFN - Milano
University of Milano
Department of Physics



Core-Preamplifier Adjustments for ToT Tests at GSI

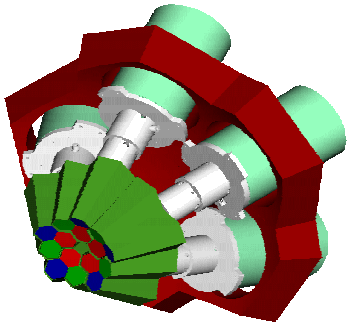
Alberto Pullia

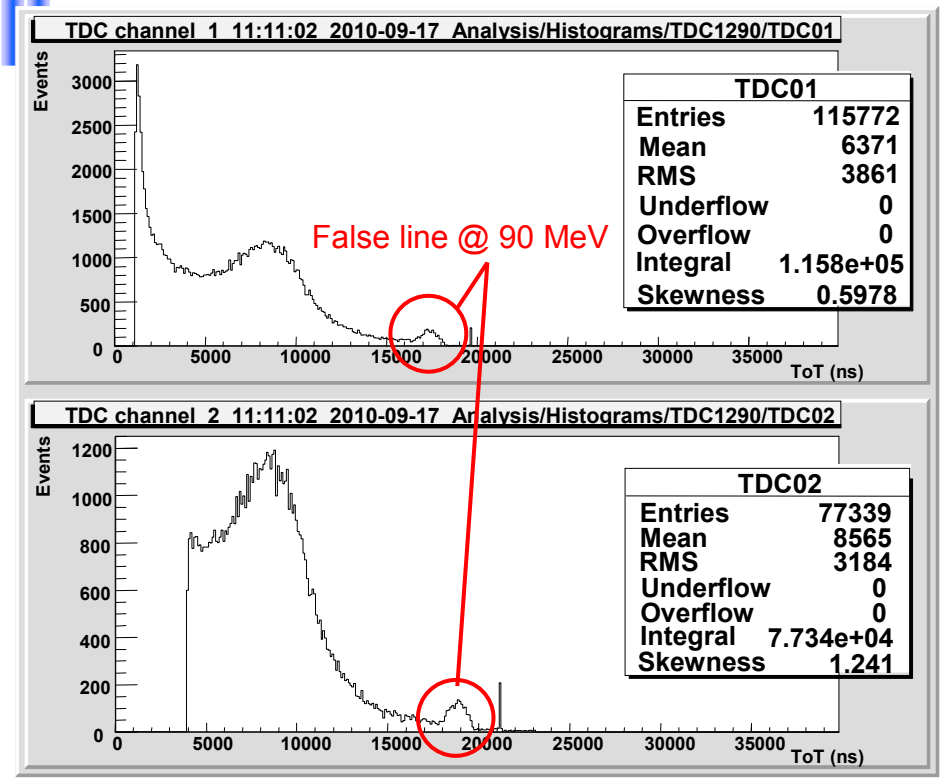
on behalf of AGATA preamplifier team

10th AGATA Week
Nov. 22- 26, Lyon, France

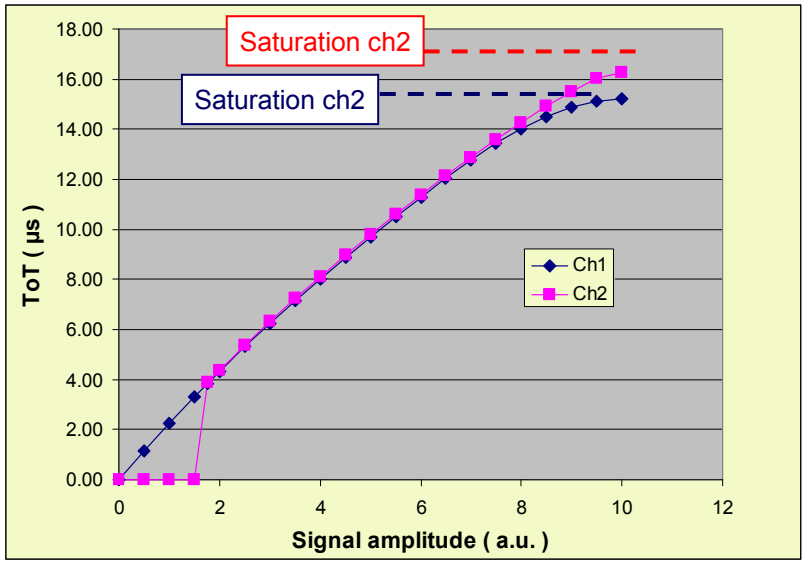
Speaker: **Alberto Pullia**
Nov. 25, 2010

Issue: ToT saturation



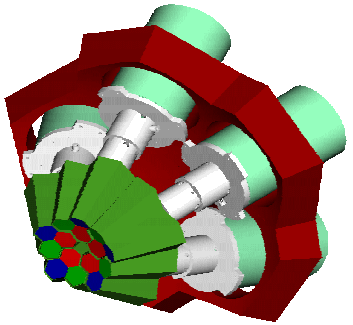


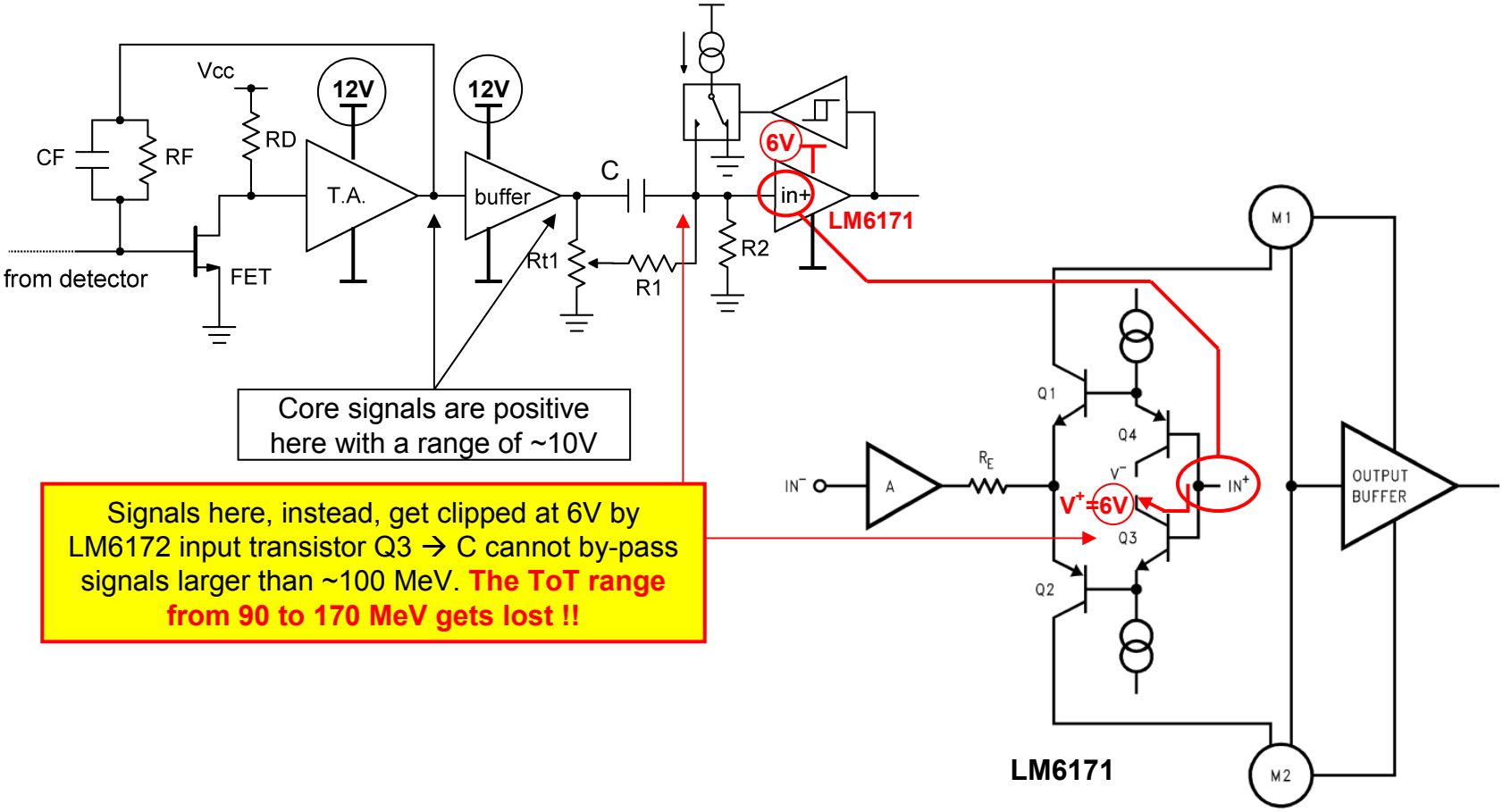
ToT calibration curve



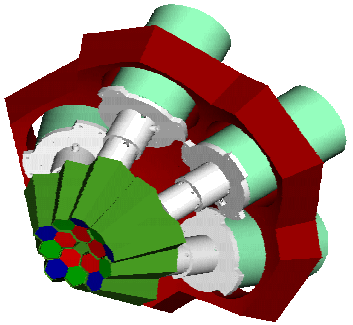
Saturation of the Time-over-Threshold parameter is observed at ~16µs, well below the expected value of ~30µs !!

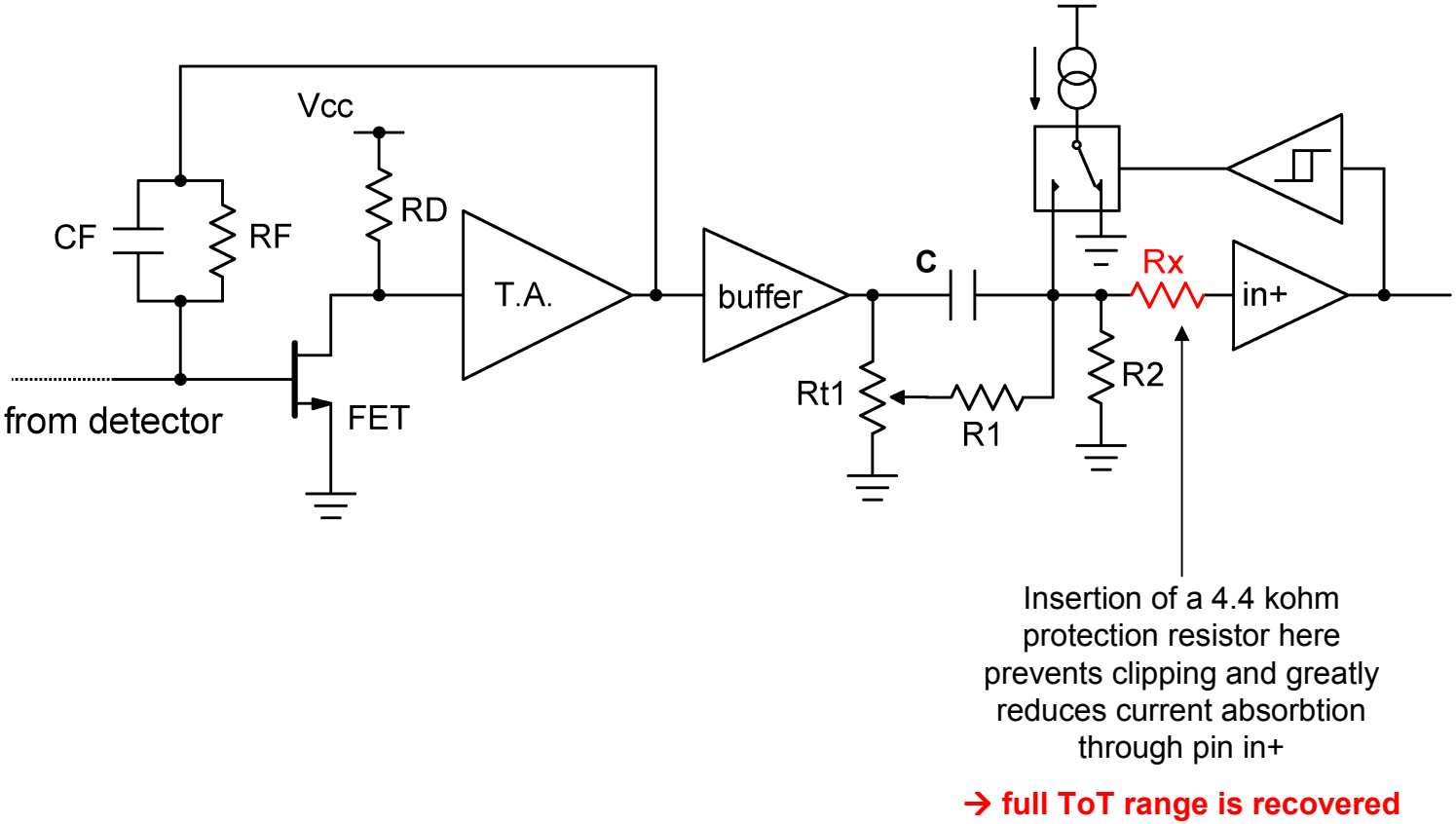
Little but nasty bug





The cure

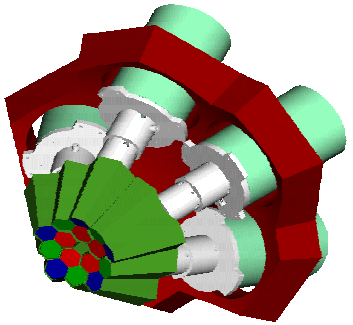


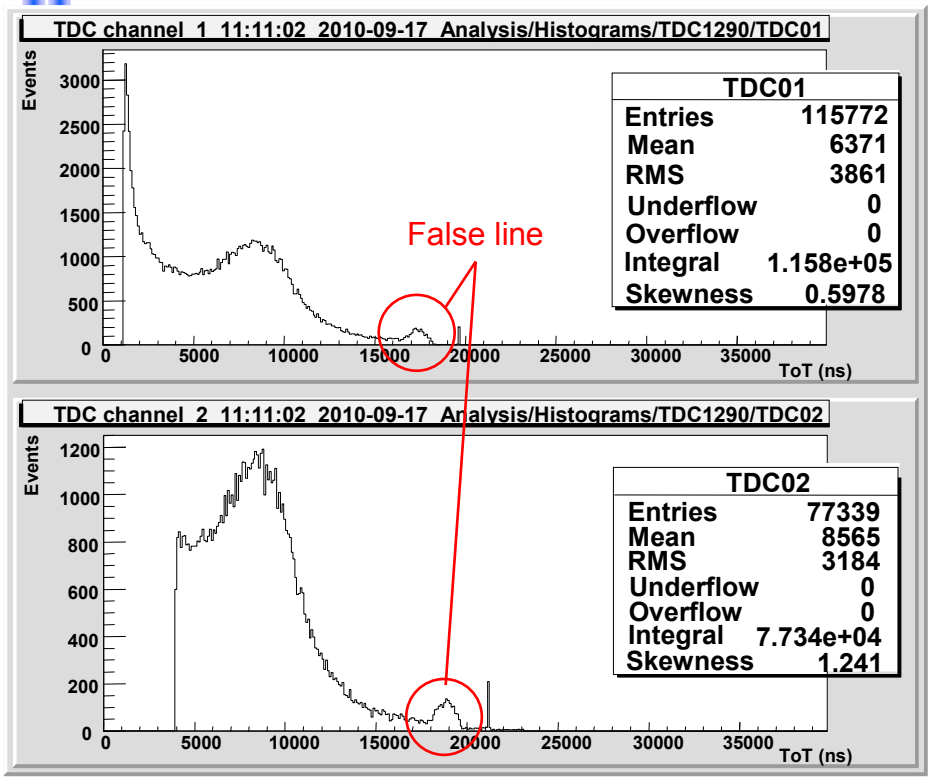


Insertion of a 4.4 kohm protection resistor here prevents clipping and greatly reduces current absorbtion through pin in+

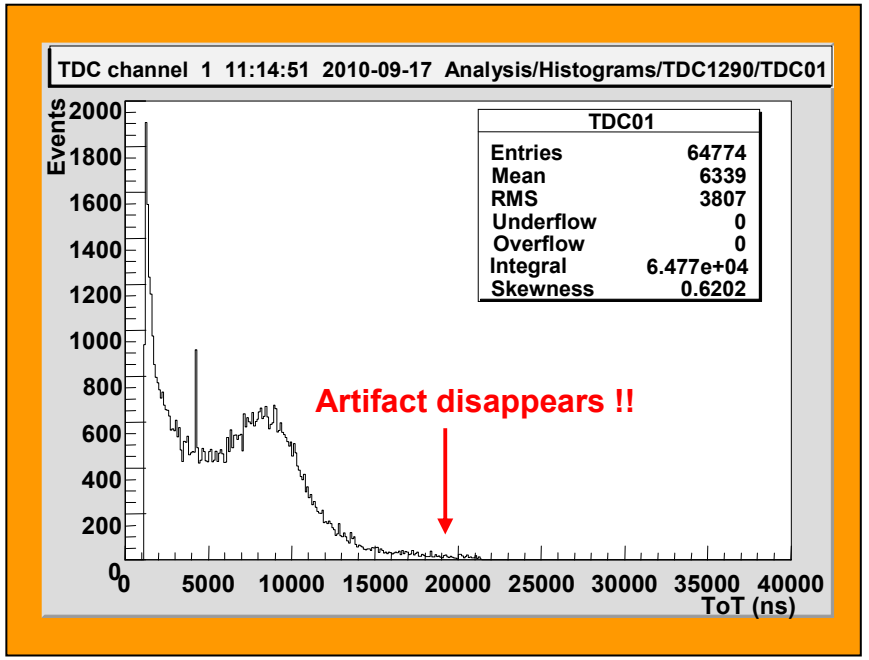
→ **full ToT range is recovered**

Spectrum after adjustment



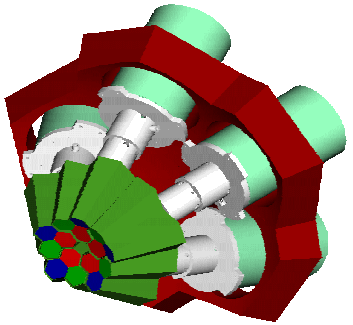


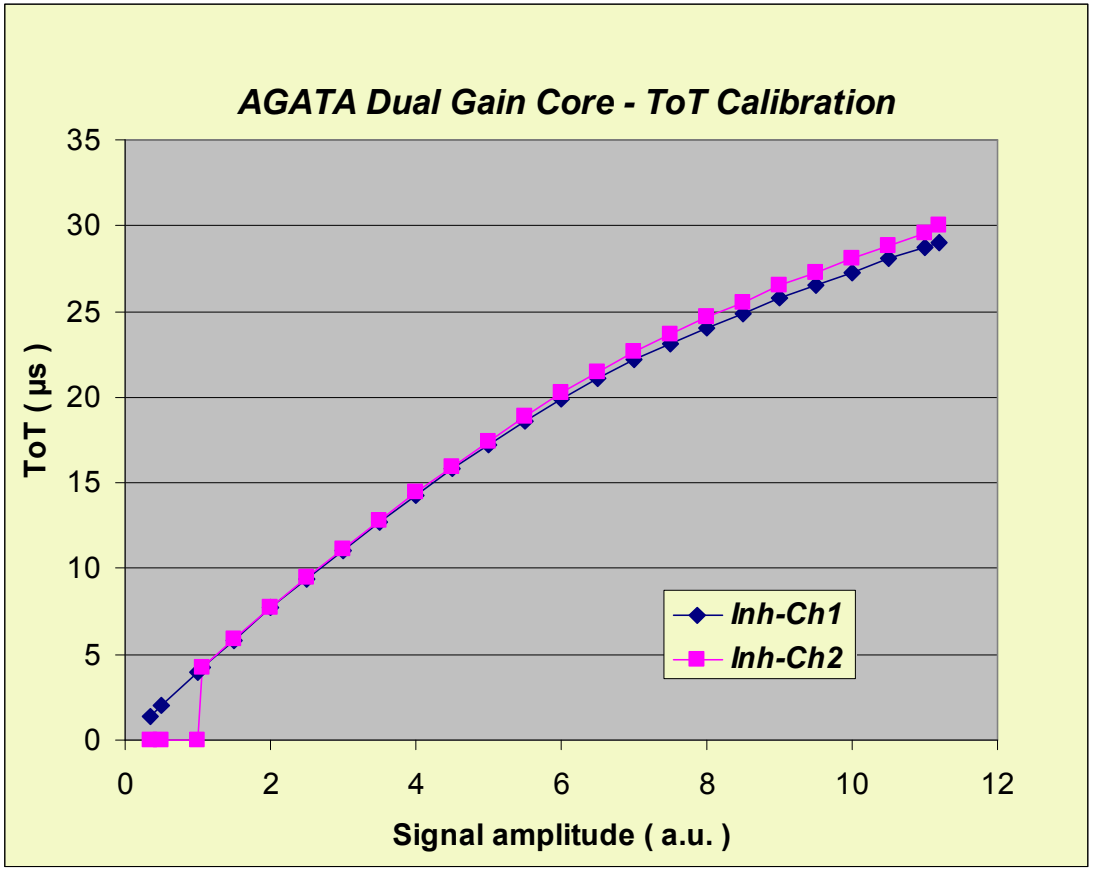
Before modification



After modification

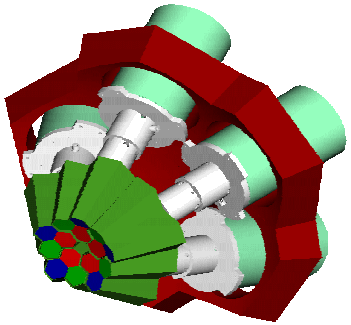
New ToT calib. curve





Now ToT saturation is no longer observed. As can be seen the ToT can grow up to 30 µs, as expected, which corresponds to a range of 170 MeV for the equivalent energy absorption in the detector.

Conclusion



- A little but nasty bug has been found in the core preamplifier during the first GSI in-beam test of the ToT functionality with an AGATA capsule
- All core preamplifiers need an adjustment for delivering full ToT range
- A proper time frame should be individuated for dismounting, servicing and reinstalling the core preamplifiers