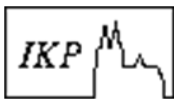


Summary:

Detector module and Preamplifiers

- A. Wiens, IKP Cologne
- A. Goergen, CEA Saclay
- D. Quirion, Canberra
- G. Pascovici, IKP Cologne

Detector	Delivery	Owner	Status
A001*	11/2005	GANIL	rejected – hole trapping
A001	06/2006	GANIL	accepted
A002*	04/2006	TU Munich	rejected – leakage currents
A002	06/2007	TU Munich	accepted
A003*	11/2006	Liverpool	rejected – leakage currents
A003	10/2007	Liverpool	accepted
A004	09/2007	Ankara	rejected – segments out of specification
A004*	07/2008	Ankara	CAT at IKP, Cologne
A005	12/2007	Stockholm	CAT at CEA, Saclay & IKP
B001*	11/2005	Padova	rejected – segments out of specification
B001	06/2007	Padova	rejected – leakage currents
B002	08/2006	GANIL	accepted
B003	06/2007	Liverpool	accepted
B004	12/2007	Ankara	rejected – missing segment in capsule
B004*	06/2008	Ankara	CAT at IKP, Cologne
B005	12/2007	Stockholm	CAT at CEA, Saclay
C001	12/2005	Padova	accepted
C002	07/2006	GANIL	accepted
C003	03/2007	Liverpool	accepted, broken, leakage currents
C004	09/2007	Ankara	accepted
C005	12/2007	Stockholm	CAT at CEA, Saclay



Summary customer acceptance tests

B001	06/07	Padova	Rejected - damage of contacts of segments A3 & C3
A002	06/07	München	Accepted
C004	09/07	Ankara	Accepted
A004	09/07	Ankara	Rejected – six segments out of E specs
A003	10/07	Liverpool	Accepted
B004	12/07	Ankara	Rejected - missing segment
B004	06/08	Ankara	Tested - not in specification
A005	12/07	Stockholm	Test ongoing (Saclay & Cologne)
C005	12/07	Stockholm	Test at Saclay
B005	12/07	Stockholm	Test at Saclay
A004	07/08	Ankara	Test at Cologne

- Detector tests since last AGATA week
- Tests are done at CEA, Saclay and IKP, Cologne

Summary available detector

Available detectors for AGATA triple clusters

A1, A2, A3

B2, B3

C2

Detectors for period fall and winter 2008/09

- 13 detectors may be available

A1, A2, A3, A4, A5, A6

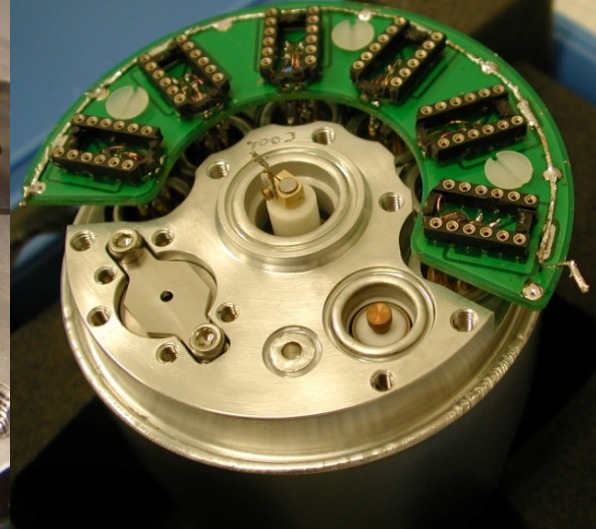
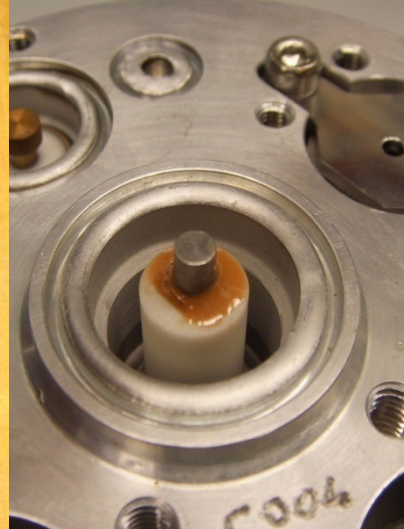
B1, B2, B3, B4, B5, B6

C1, C2, C4, C5

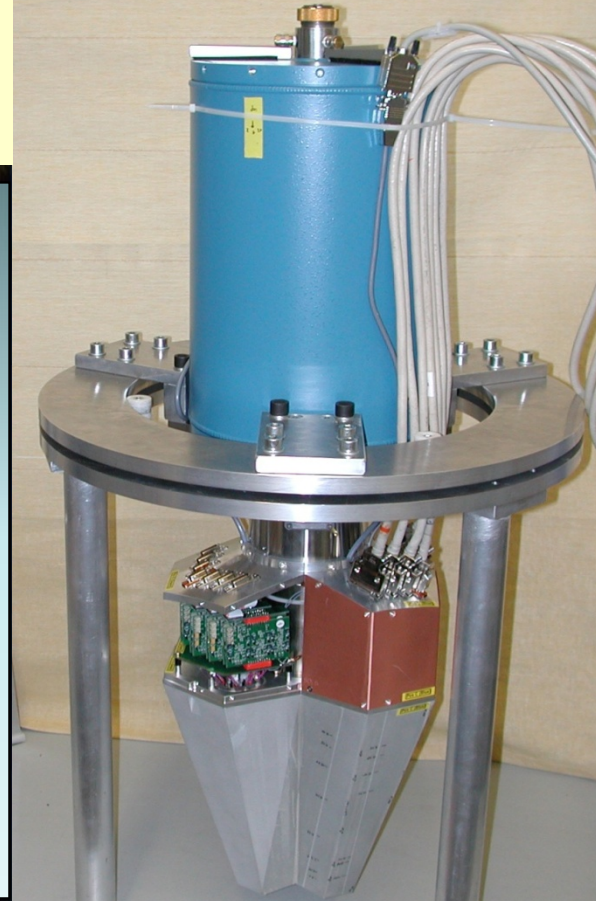
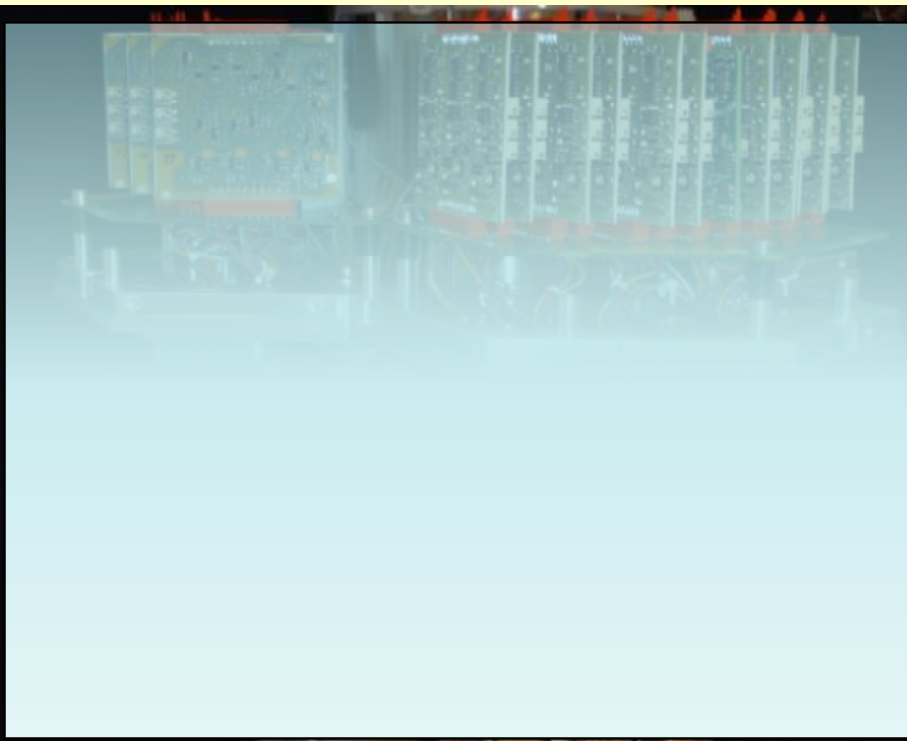
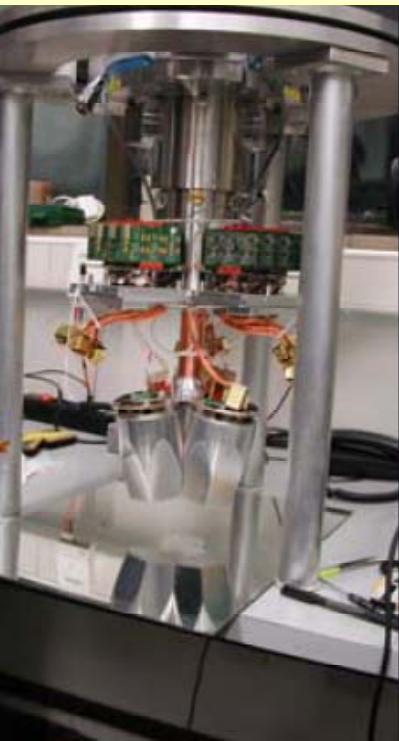
- **A6, B1, B6** delivery July 2008
- redelivery of turkish detectors **A4, B4, C4**

Future detectors

- January - June 2009 italian detectors **C6, A7**
- detector repair of **C3**
- summer 2008 order of german detectors **A8, B7, C7**



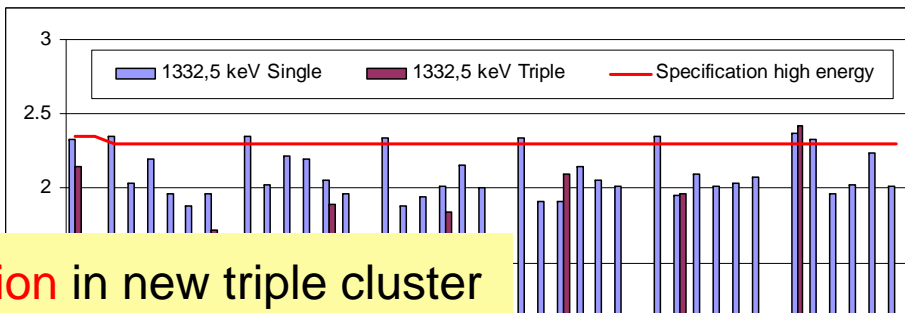
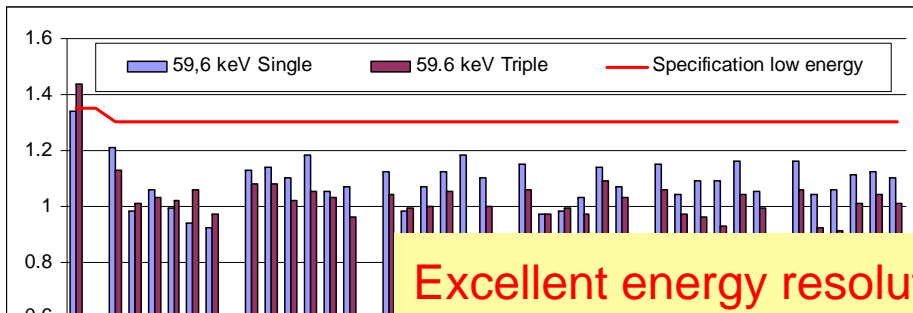
First AGATA triple cluster detector
IKP Cologne, H.-G. Thomas CTT Montabaur



Resolution 60keV line

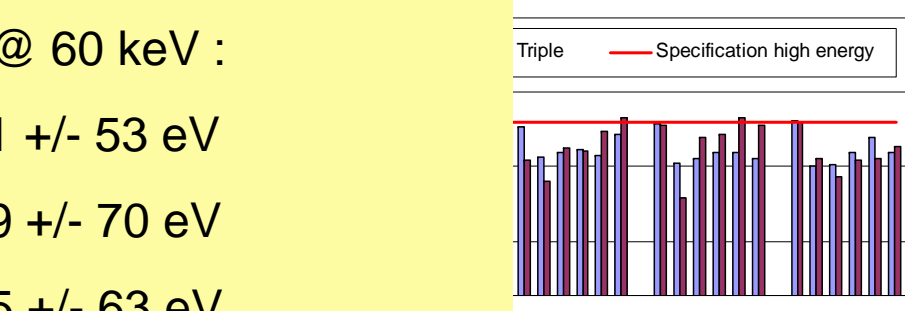
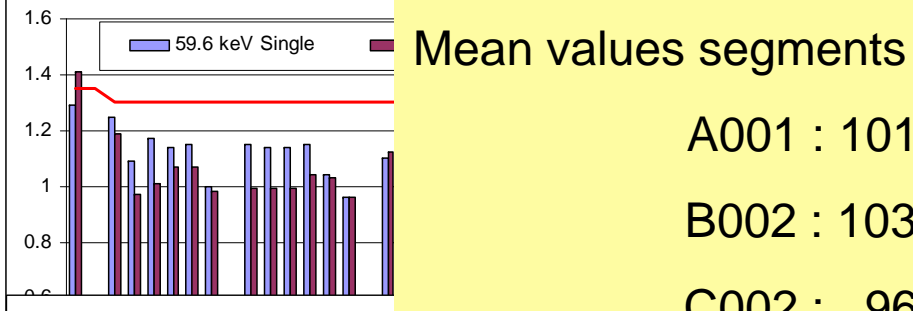
Resolution 1.33MeV line

A001 - FWHM [keV]

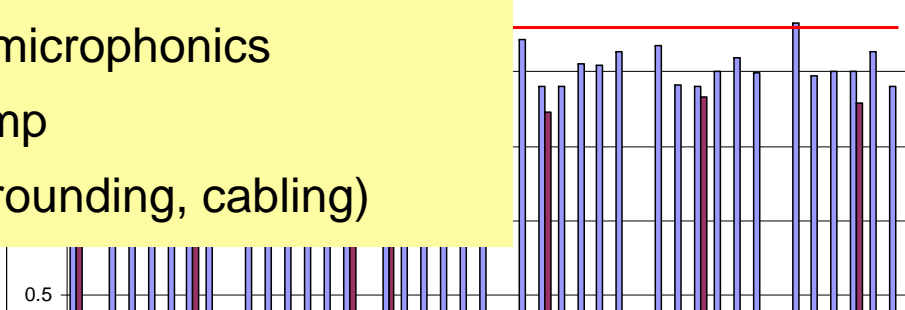
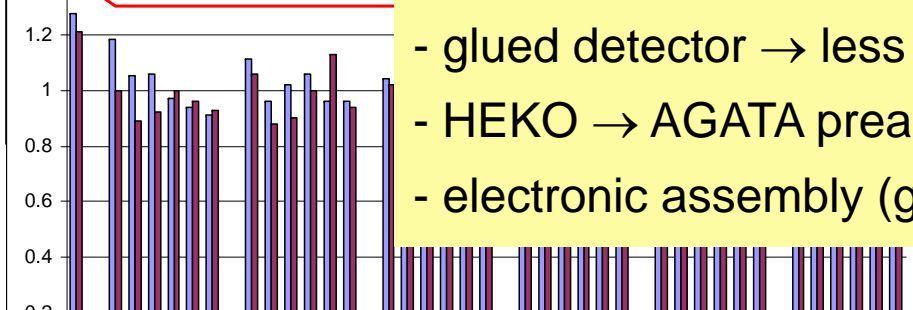


Excellent energy resolution in new triple cluster
 Mean values segments @ 60 keV :
 A001 : 1011 +/- 53 eV
 B002 : 1039 +/- 70 eV
 C002 : 965 +/- 63 eV
especially at low energies (electronic noise):
 - glued detector → less microphonics
 - HEKO → AGATA preamp
 - electronic assembly (grounding, cabling)

B002 - FWHM [keV]

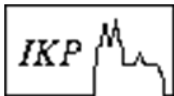


C002 - FWHM [keV]



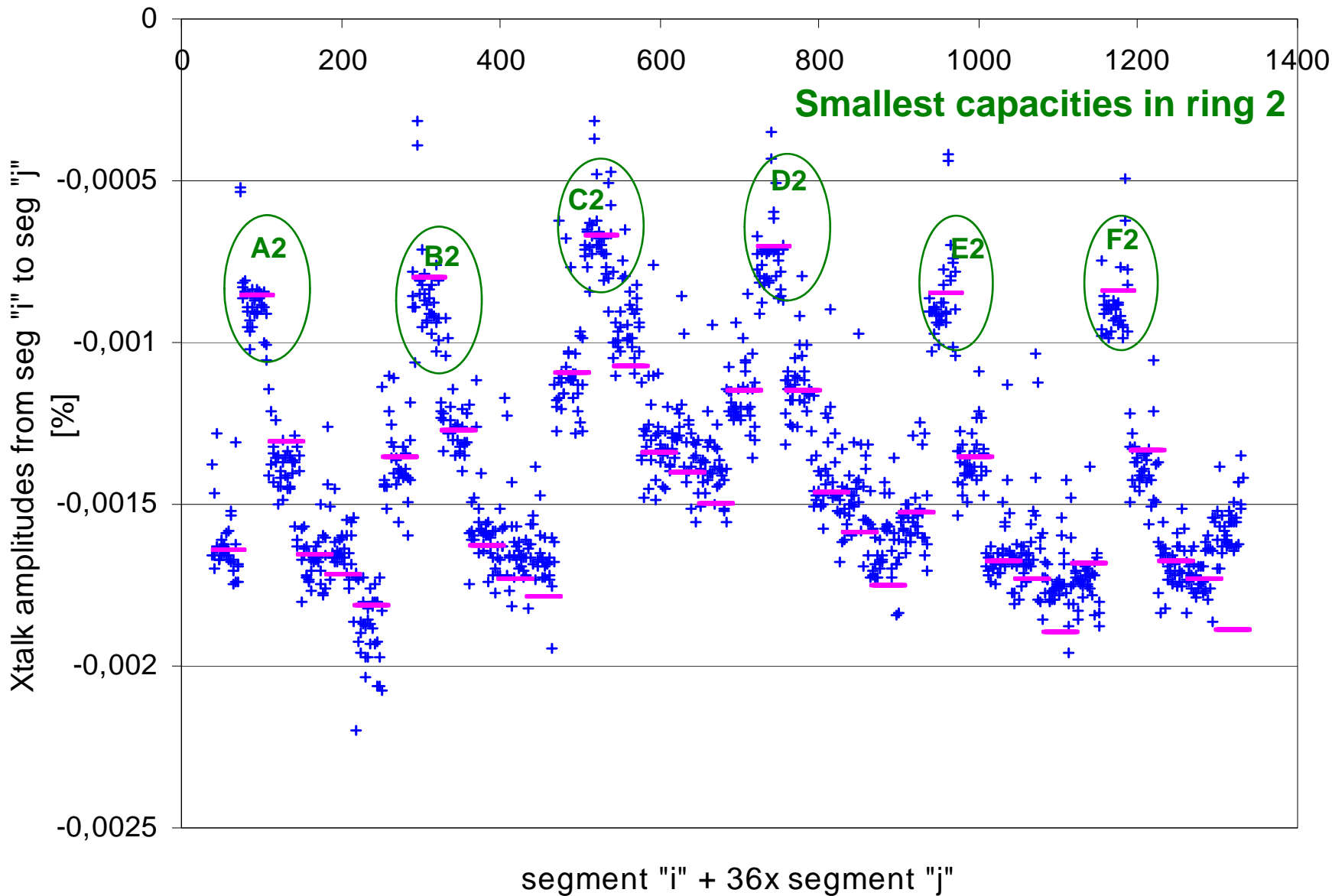
Core A1 A2 A3 A4 A5 A6 B1 B2 B3 B4 B5 B6 C1 C2 C3 C4 C5 C6 D1 D2 D3 D4 D5 D6 E1 E2 E3 E4 E5 E6 F1 F2 F3 F4 F5 F6

Core A1 A2 A3 A4 A5 A6 B1 B2 B3 B4 B5 B6 C1 C2 C3 C4 C5 C6 D1 D2 D3 D4 D5 D6 E1 E2 E3 E4 E5 E6 F1 F2 F3 F4 F5 F6

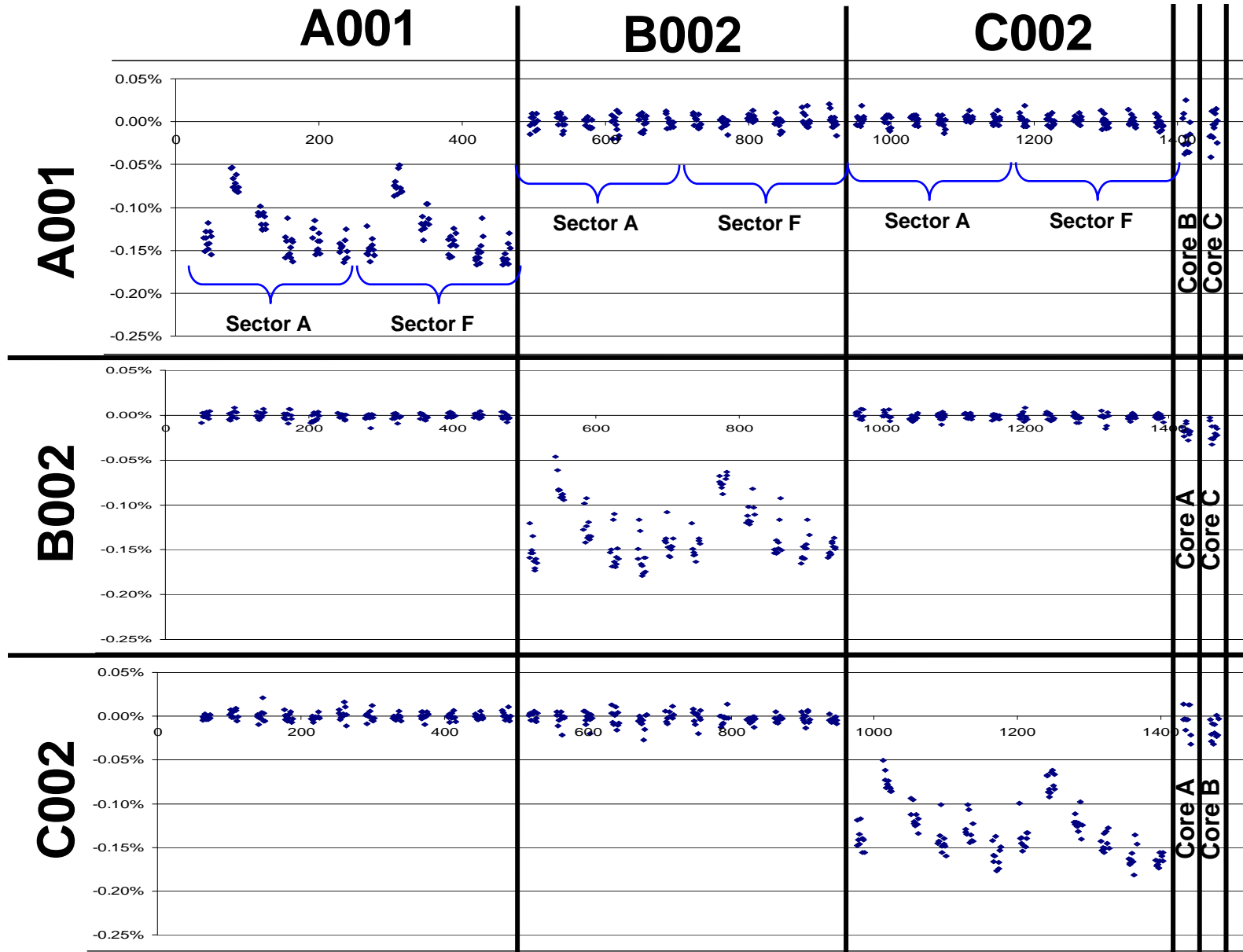


A001 in Triple Cryostat 5000 V

- + Measured Cross talk
- Core to Seg Xtalk (theory)



No cross talk between detectors in Triple Cryostat



AGATA Triple Cluster Detectors operational:

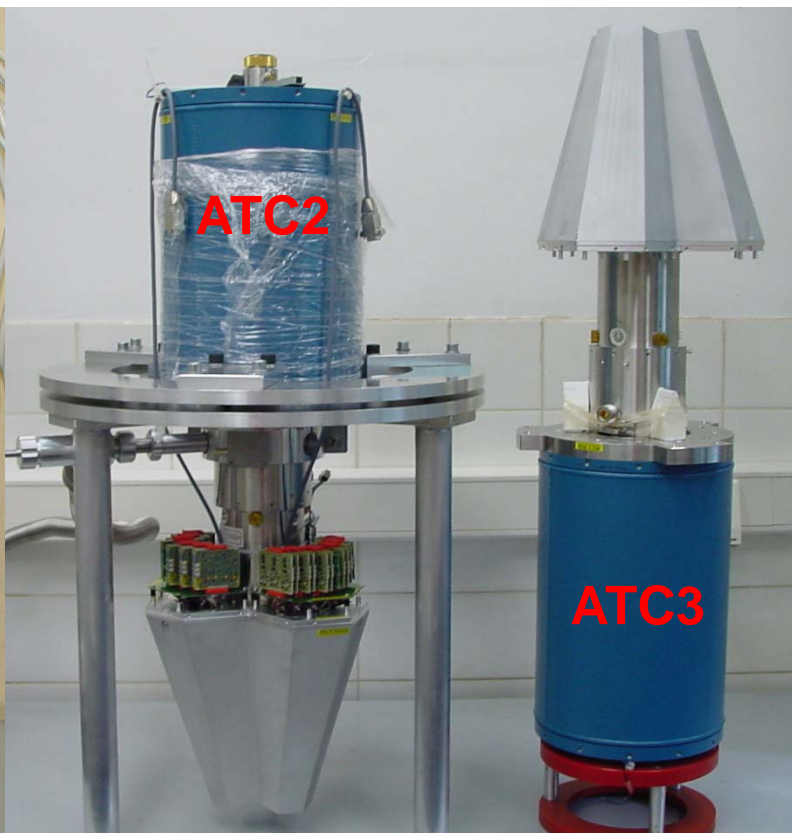
· first triple:

- cryostat, mechanics, vacuum o.k.
- seg-preamps, core preamp & pulser o.k.
- energy resolution o.k.
- no cross talk between detectors

· second triple: commissioning phase

Outlook:

- transport to Legnaro of ATC1
- in July 2008
- assembly of third triple
- constrained by available detectors



AGATA Core - upgraded front end electronics

- ***Upgraded Charge Sensitive Preamplifier***
- new frequency compensation for Single & Dual Gain Core
- ***Reworked Dual Gain Core, reconfigurable:***
- either Single or Dual; either LV-CMOS or LVDS
- ***Programmable Spectroscopic Pulser***
- as a tool for self-calibrating energy, time, dead time, time alignment, detector characterization etc.)

G. Pascovici for the AGATA Preamplifier- and Detector Group

F. Zocca, A. Puglia, D. Bazzacco

Conclusions

- *very low noise, very wide dynamic range charge-sensitive pre-amplifier*
- *spectroscopic range successfully extended by more than one order of magnitude with new TOT technique up to 180 MeV*
- *two modes of operations ⇔ four sub-ranges: 0-5 (20) MeV and 5(20)-180 MeV*
- *very clean transfer function improvement: 'Dominant pole compensation'*
- *Programmable Spectroscopic Pulser*

