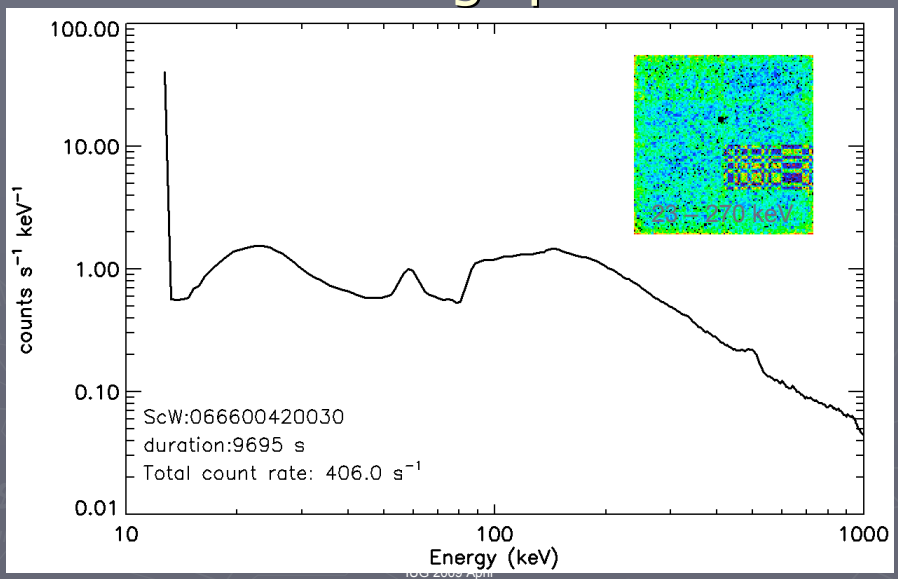
Test of the ISGRI strategy for Extremely bright transients

François Lebrun

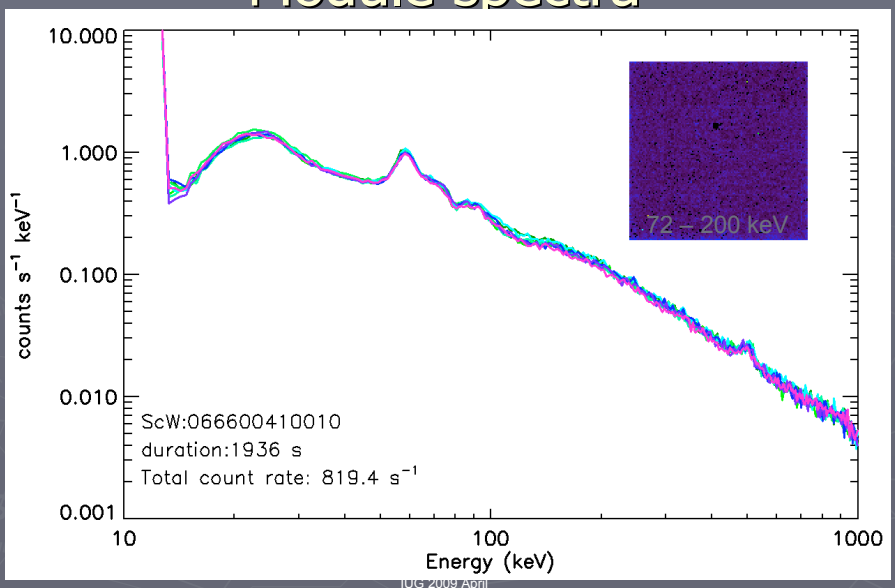
ISGRI Test configuration

- The idea is to preserve the ISGRI sensitive area at high energy while that at low energy (where most of the counts are) can be reduced
- 10 ks staring at Crab in revolution 666
- Low threshold raised to step 62 (= 75 keV, max value) for module 4
- Low threshold raised to step 62 (= 85 keV, max value) for modules 0,2,3,5,6,7
- Module 1 in normal configuration

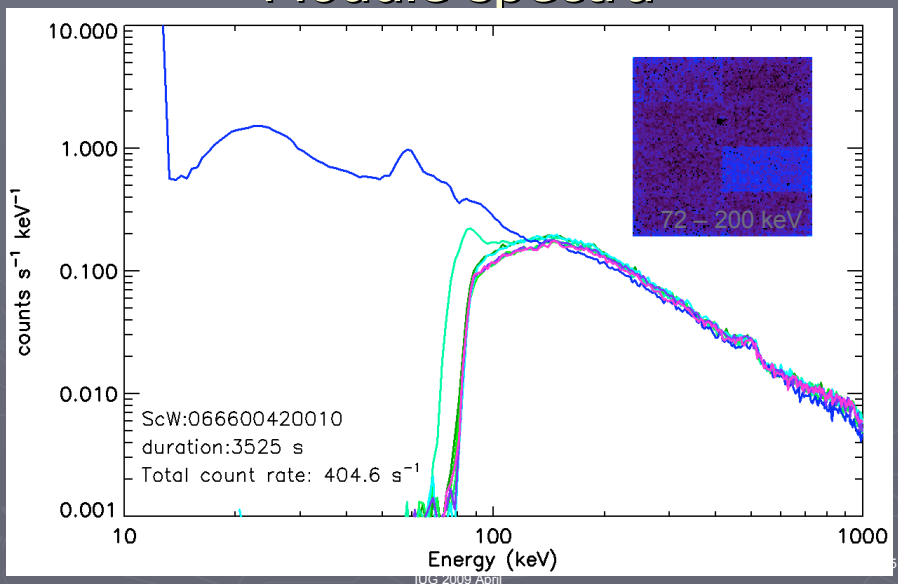
Total staring spectrum



Module spectra



Module spectra



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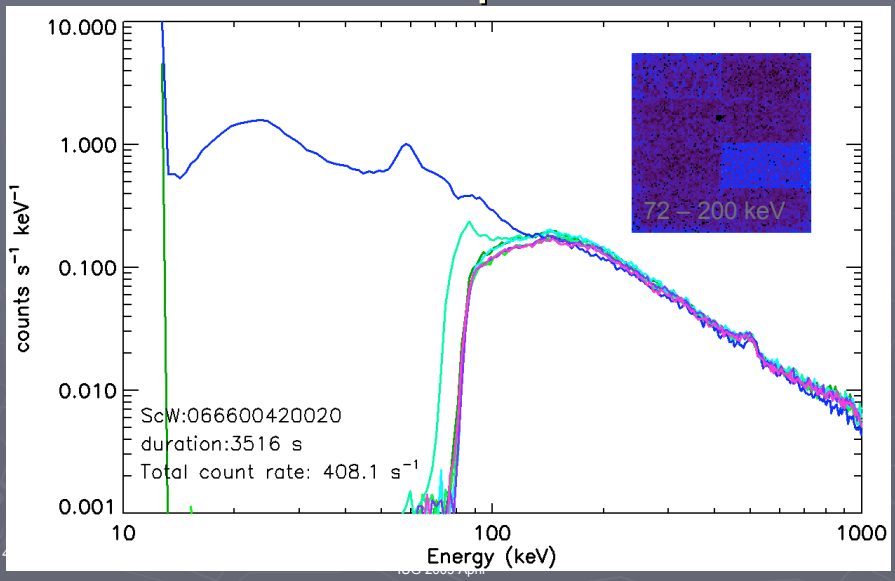
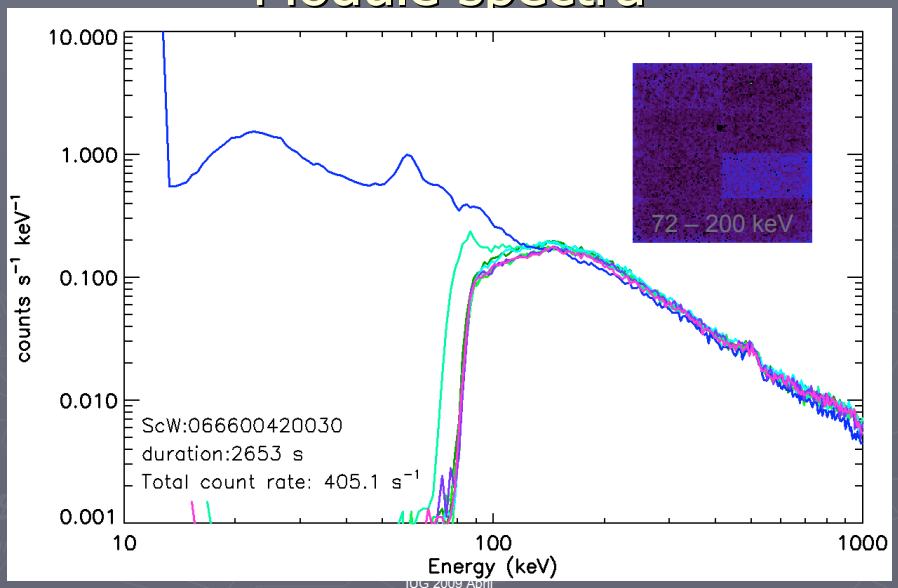
Module spectra



Module spectra



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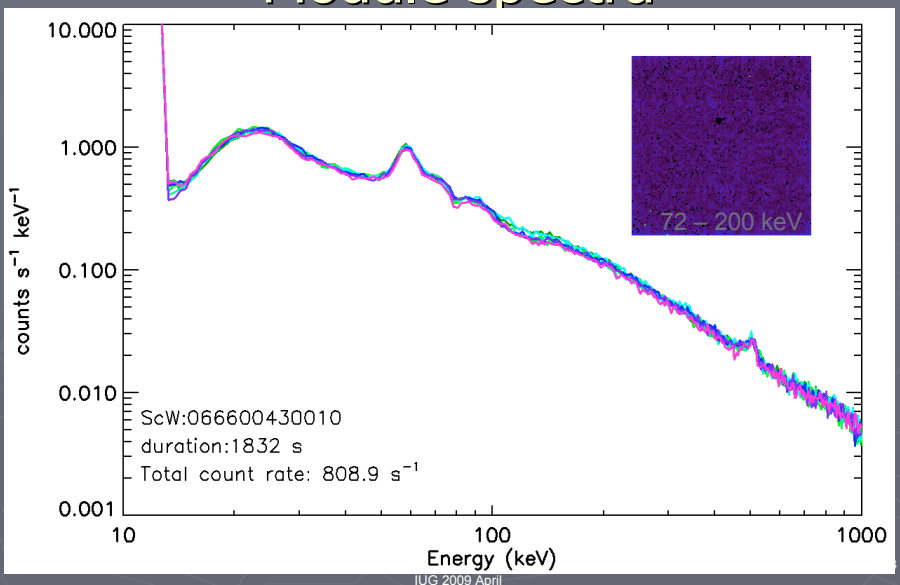
Module spectra



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Conclusions

- Setting the ISGRI low threshold at step 62 for modules 0,2,3,4,4,6,7 (as in the test) reduces the count rate by a factor 2 for a bkg+Crab spectrum. It can be taken as the first step for sources up to ~ 5-10 Crab
- If the TM is still saturated, the next step is to switch-off progressively modules 3,7,4,0 (in this order). At the end, the expected count rate reduction is a factor ~3
- Leaving only one module ON with a normal low threshold setting achieves a count rate reduction of a factor 8