



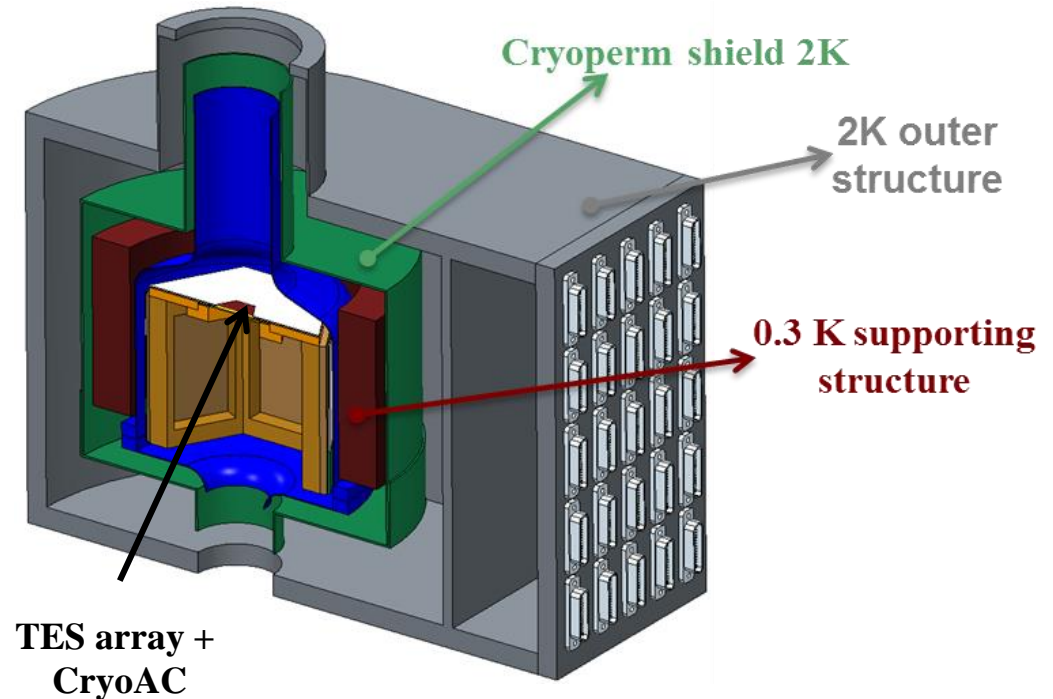
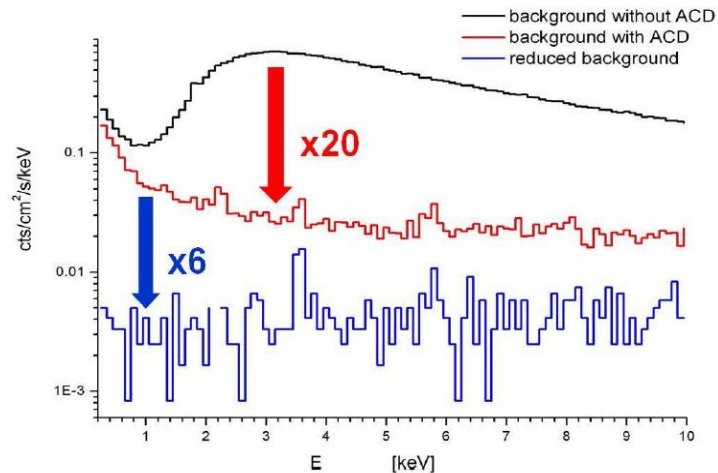
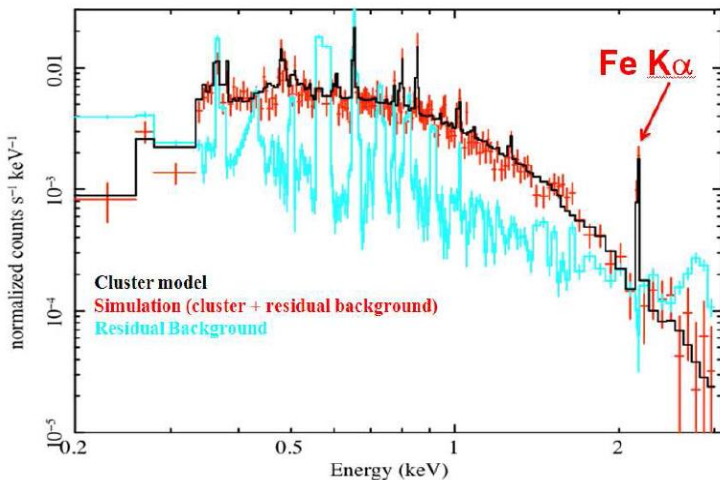
Superconducting TES array for large area cryogenic anti-coincidence detector for the ATHENA space mission

Athena (Advanced Telescope for High ENergy Astrophysics)

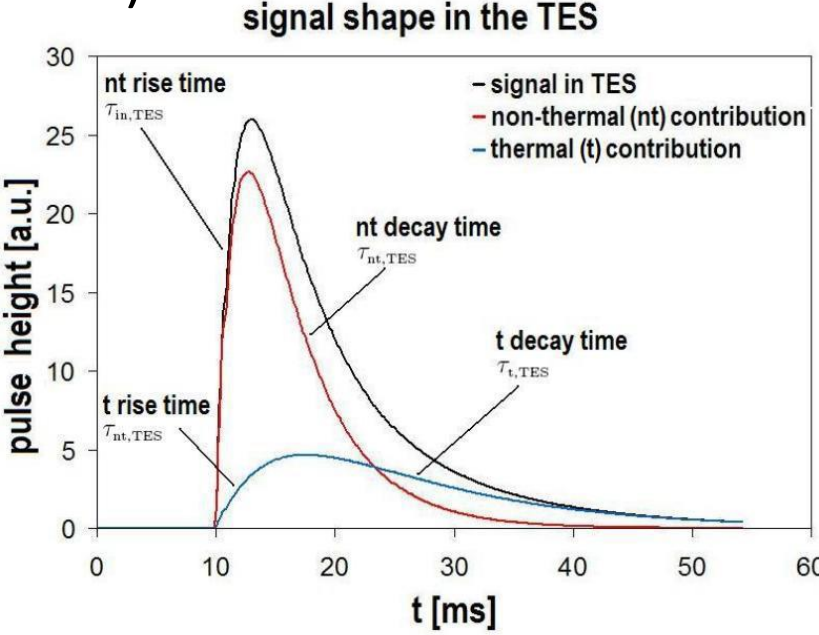
- Next generation X-Ray space telescope
- TES based focal plane assembly

Needs for an anticoincidence detector to disentangle fake signals produced by cosmics (protons mostly) and obtain high energy resolution on single elements' lines

CLJ1449-0856 z=2.07 250ks

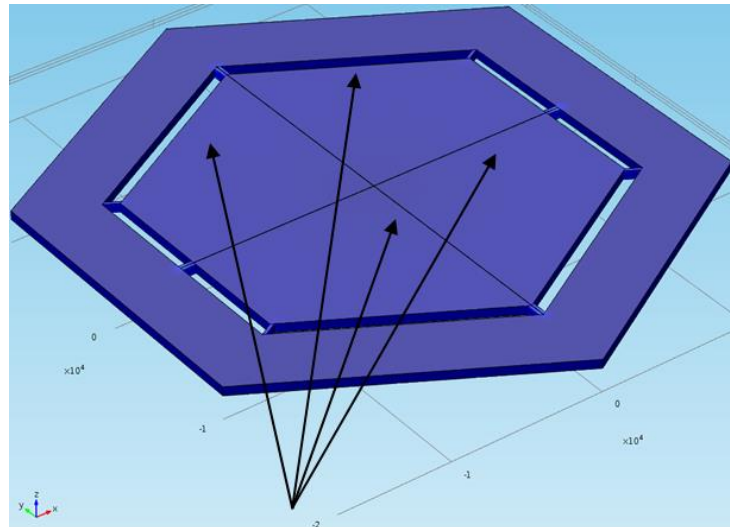
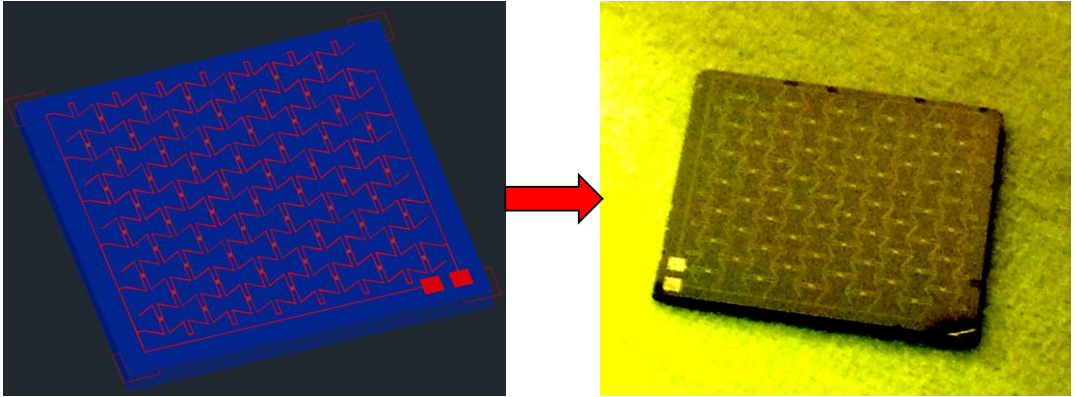


These all micro machined detectors work on the principle of collecting the fast a-thermal signal produced by interaction in the absorber (Silicon) with a grid of transition-edge sensors (iridium TES)



The final concept will consist of four silicon pixels covered by hundreds of small TESs. They will be suspended by mean of silicon bridges. The whole process will be made starting from a single silicon wafer

Ongoing work @ Genova INFN:
-thermal/mechanical simulations
-design and fabrication
-preliminary tests down to 50mK



TES patterns on surfaces