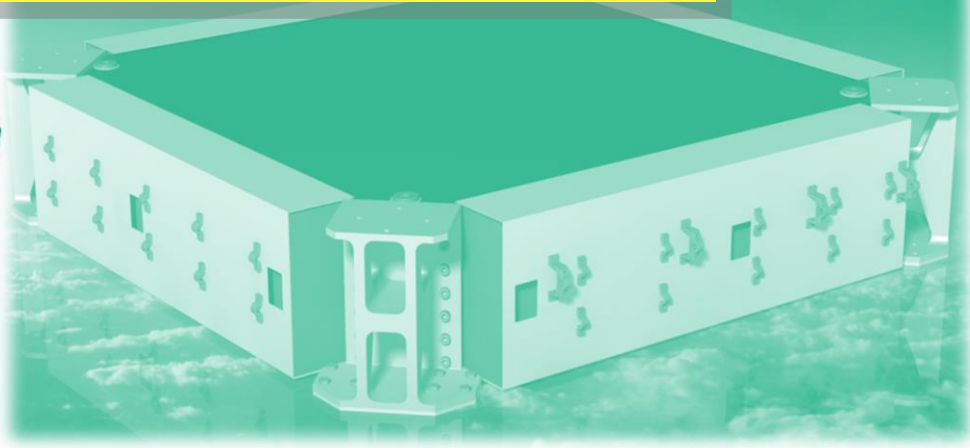
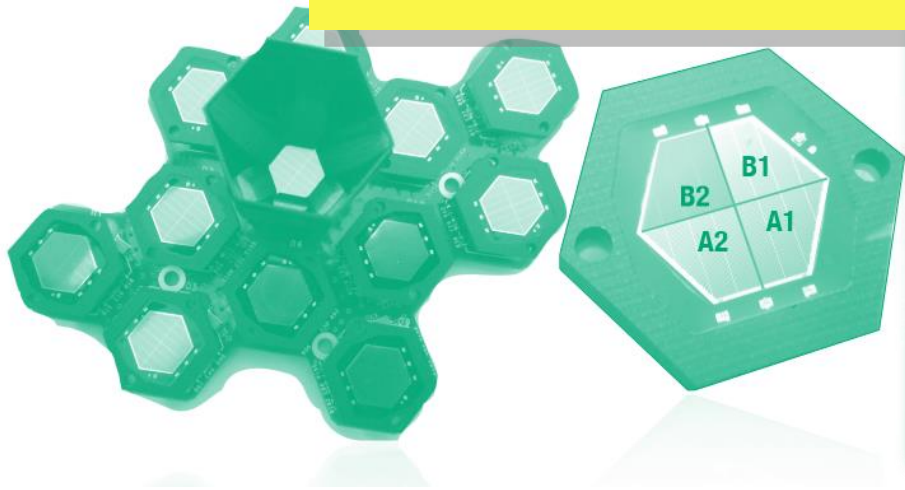




**Mechanical Group**  
*Activities in 2013... and beyond*



**Workshop & Clean room**

**Coralie,  
Laurent,  
Maarten,  
Maxime**



+ *Ilona (IBL), M'Barka, Franco and Mario (EMR) ...useful temporary help*

**Design & Engineering**

**Gérard,**



**Laurent, and Maarten** *in overlap with Workshop activities*

**Sébastien** *(Engineer ...taking over Gerard), and Augusto* *(European fund)*

**Franck** *(Mechanical Group manager)*

+ **William** *(1 year on ATLAS), Nianpeng* *(3 months on DAMPE) and other Students...*

*... without forgetting Catherine, Liliane, Nathalie, Marie-Anne, Yann  
& our “Central” workshops*

BIG THANKS FOR THE GOOD JOB

**Current projects...**

**ATLAS** (IBL project...Stave Integration in 2014),

**EMR** (Delivery to RAL in September 2013)

**POLAR** (Qualification Models... FM by mid 2014!)

**CTA** (Camera prototype, by mid 2014)

**DAMPE** (Silicon Tracker in Space, China...2015)

**Towards futures commitments...**

**TASD + MIND (AIDA), Mu3e ?**(Neutrinos)

**ATLAS** Upgrades Phase 2

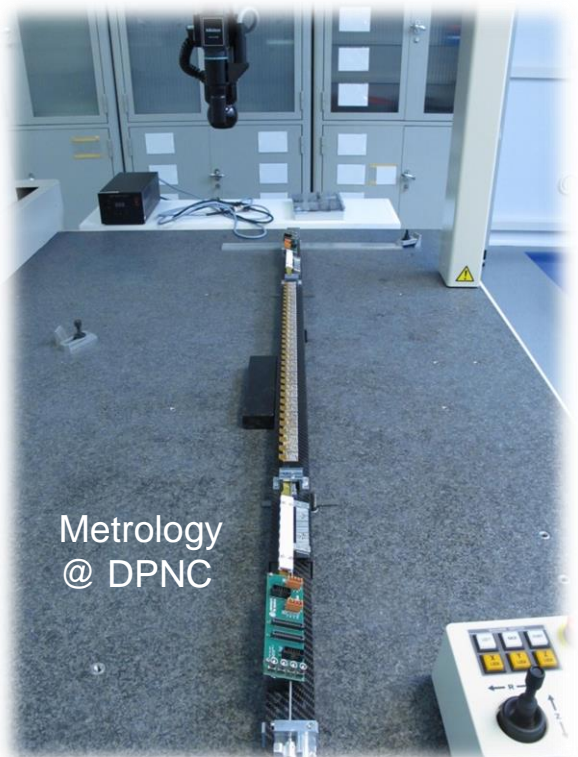
**LOFT ?** (ESA project, design competition...TBD)



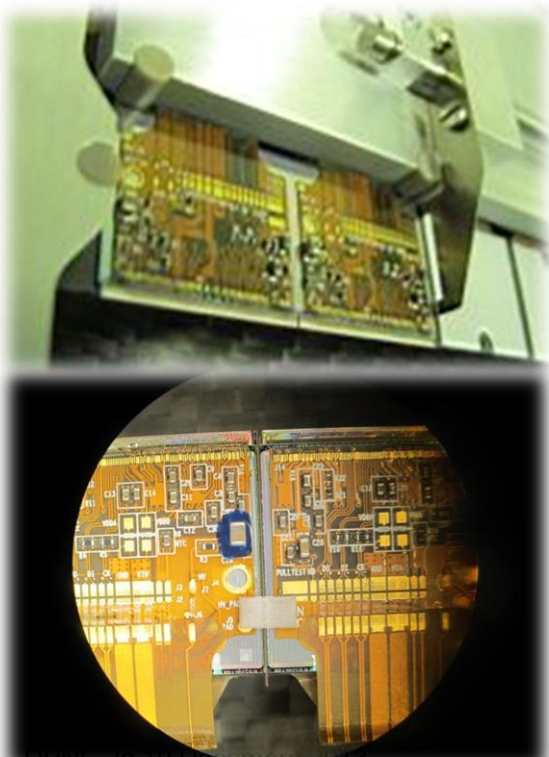


**IBL project (Atlas)**  
*Stave Module Loading*

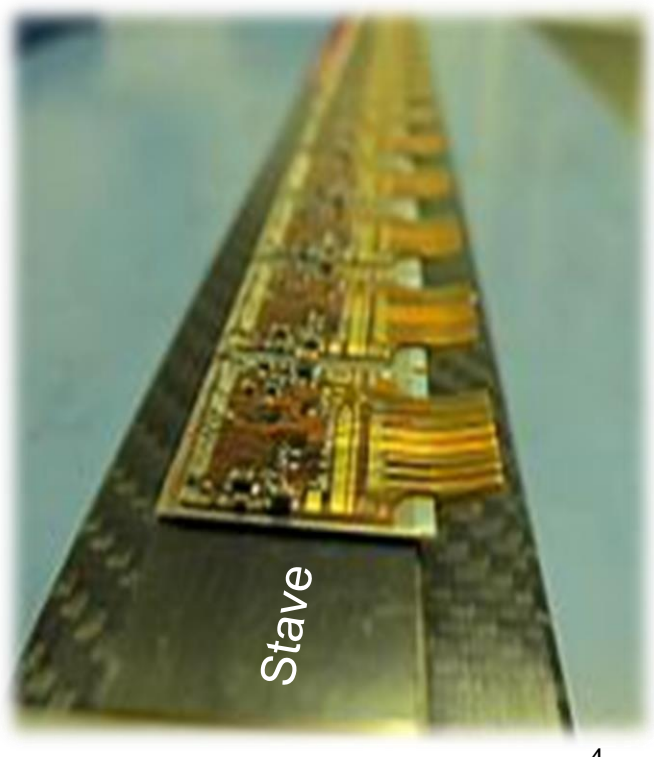
- Status of the work in 2013 (Thanks to Coralie, Maarten, Illona + managing team):**
- All the STAVES are being loaded (Modules) at DPNC (some reworks have been done)
  - 19 STAVES ready for integration (2 are NOK... used for training on integration stand)



Metrology  
@ DPNC



DPNC, le 19 Decembre 2013



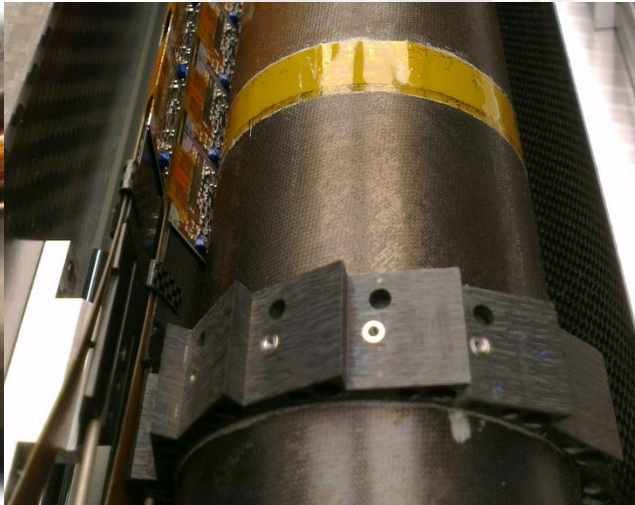
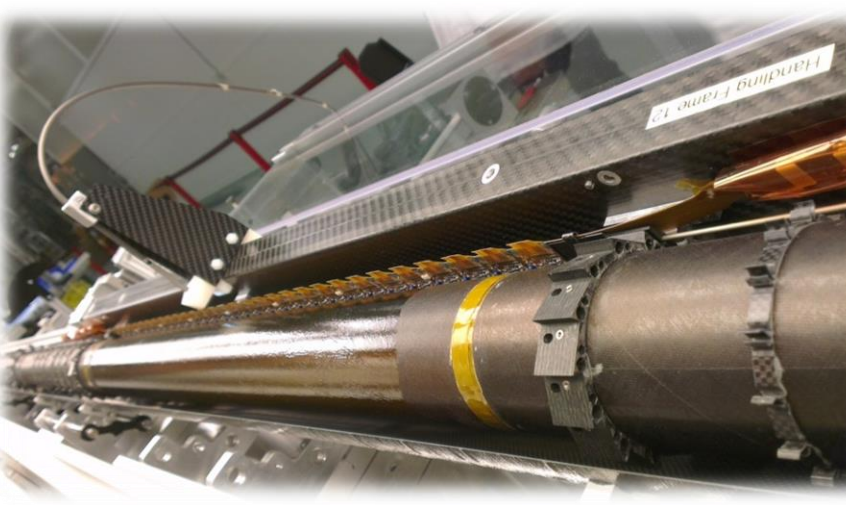
Stave



**IBL project (Atlas)**  
*Stave Integration on support*

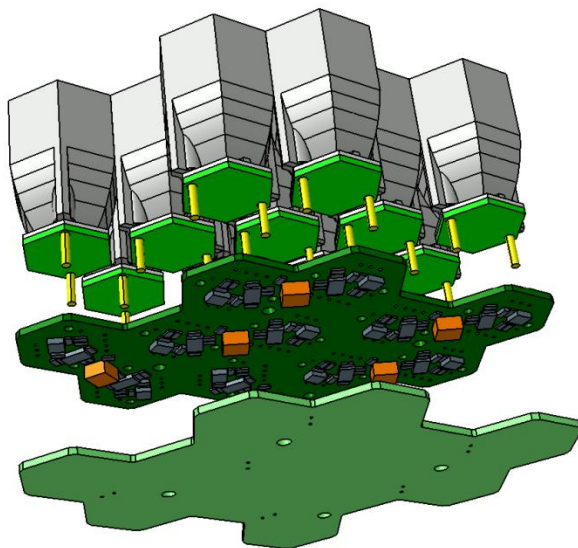
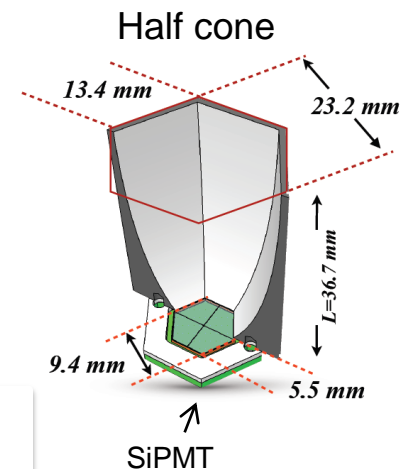
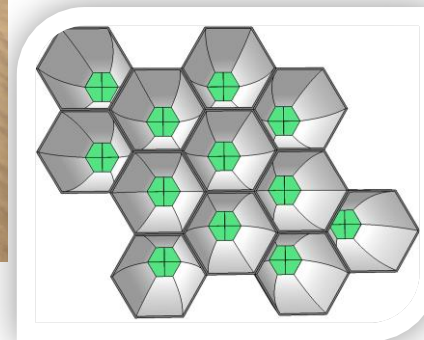
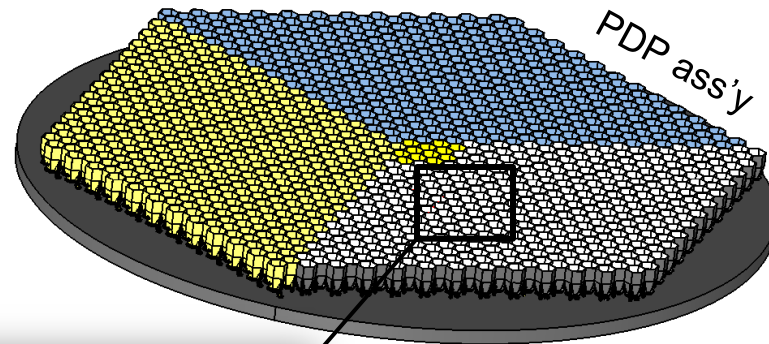
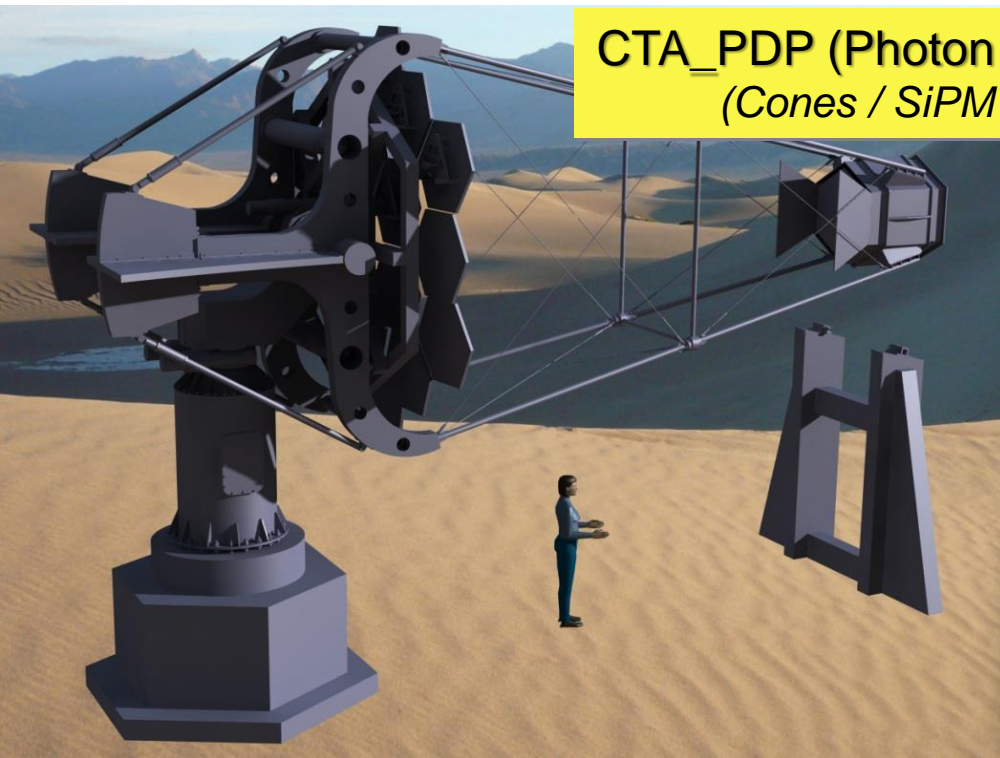


- Status of the work in 2013 (Gerard, Sébastien, Augusto):**
- First STAVE integration tests performed and successful!
  - Ready to start with final integration (next 2-3 months)



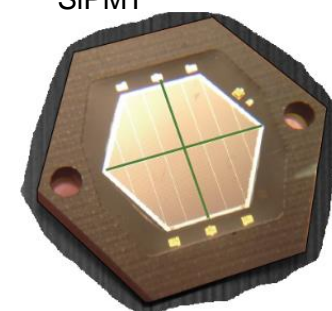


CTA\_PDP (Photon Detector Plane)  
(Cones / SiPMT / FEE+...)



R&D on 1 Module assembly (12 Cones)

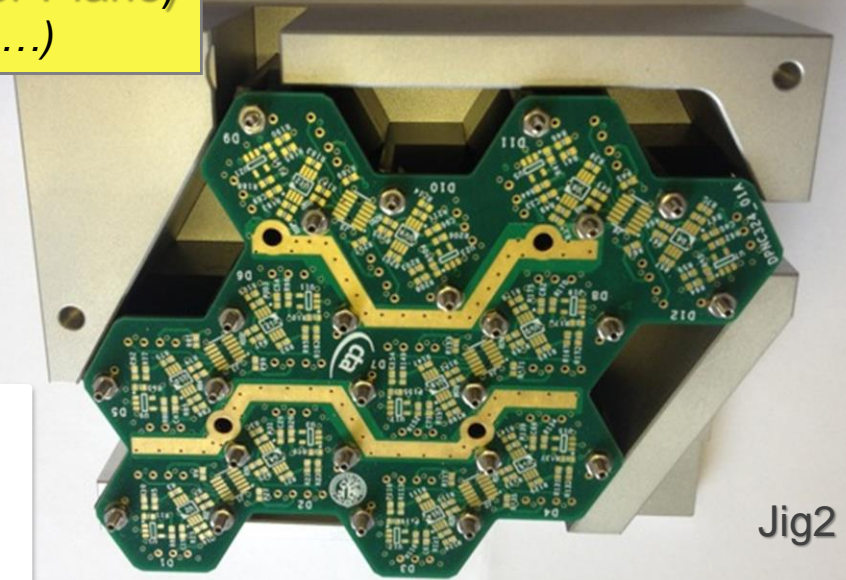
- Electronic integration (Yannick)
- Half cone production + coating (CH)
- Module integration and FEA (Franck)
- Assembly jig
- Target is 12 Modules assembly by mid 2014



CTA\_PDP (Photon Detector Plane)  
(Cones / SiPMT / FEE+...)



Jig1



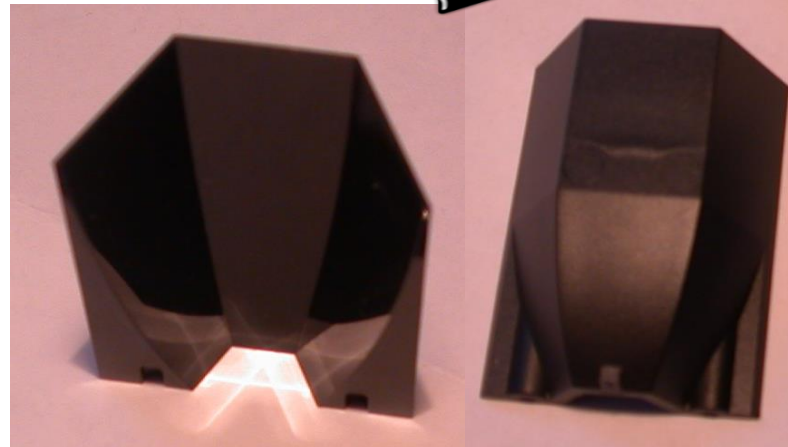
Jig2

- Jig development @ DPNC (Maxime)
- Jig 1 (individual cone)
  - Jig 2 (12 cones glued together)
  - Gluing by Coralie

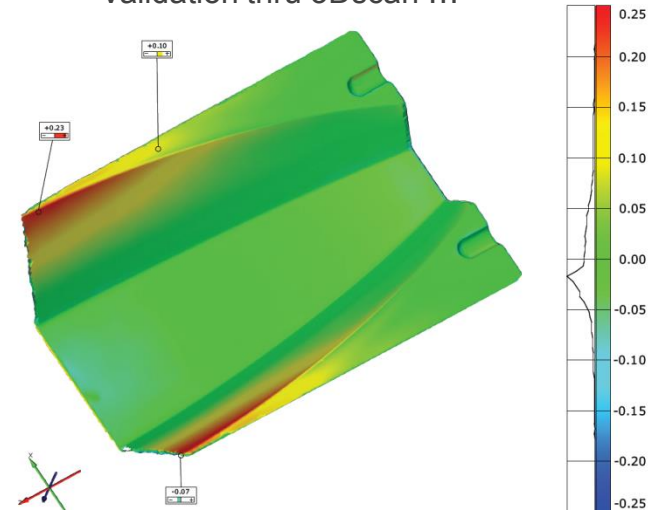
From fast prototyping...



...to the plastic injection process

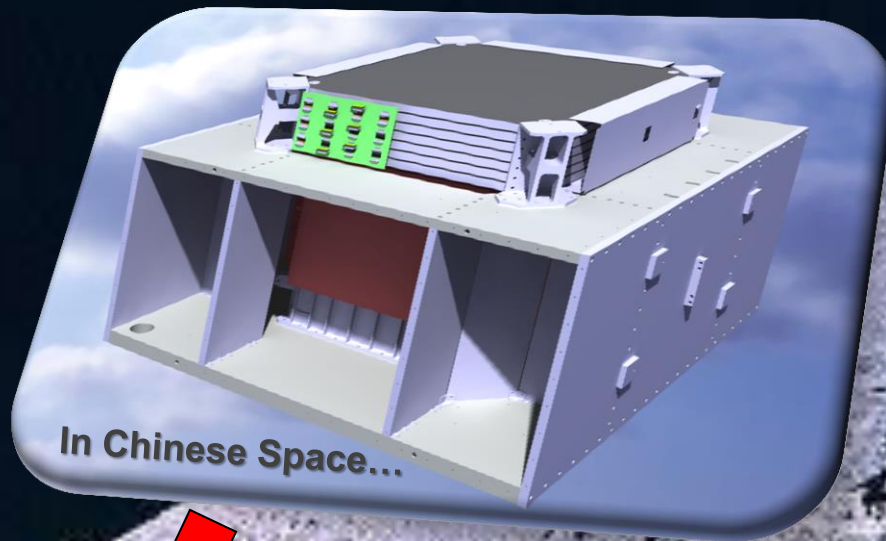


Validation thru 3Dscan ...





DAMPE \_ STK (Silicon Tracker)

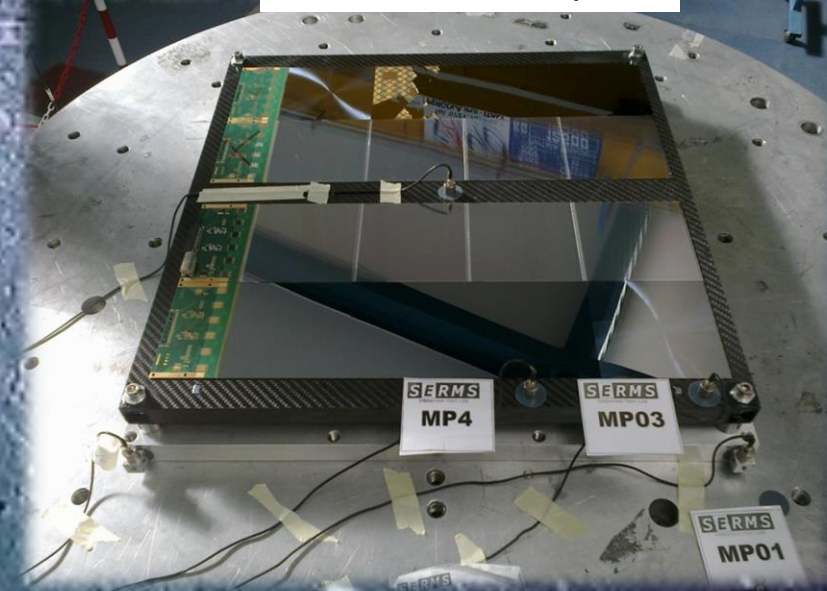


In Chinese Space...

Overall design  
by DPNC

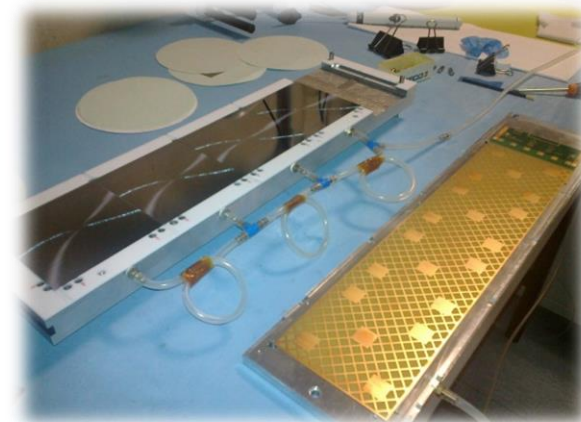
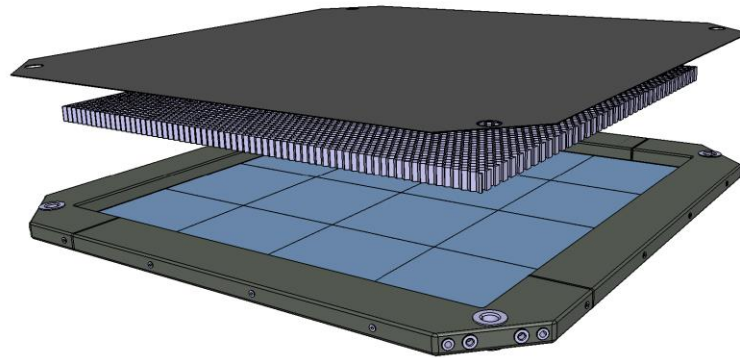
Tests on Quarter proto

STK  
1m x 1m x 23cm

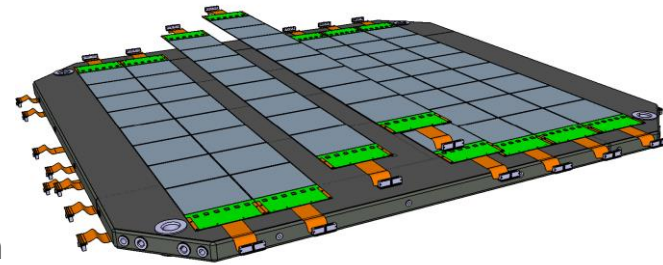




DAMPE \_ STK (Silicon Tracker)

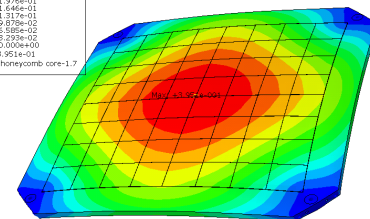
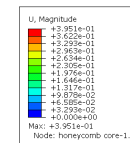
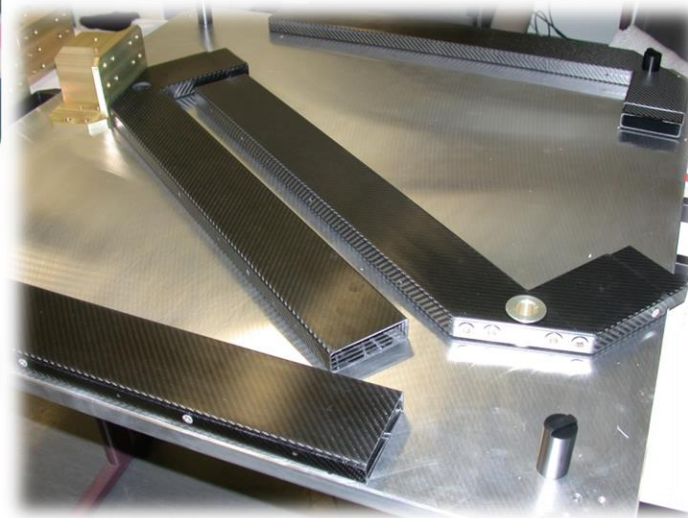


Ladder assembly @ INFN



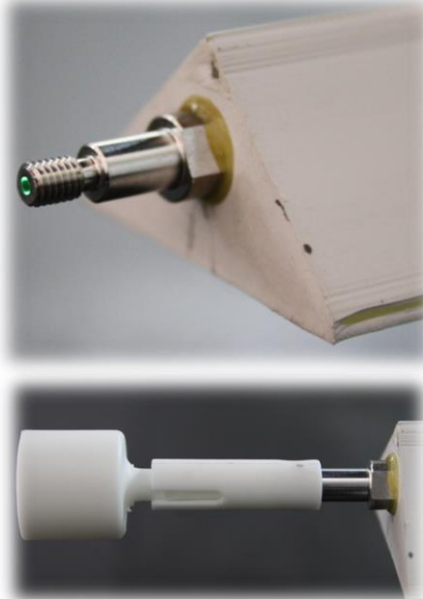
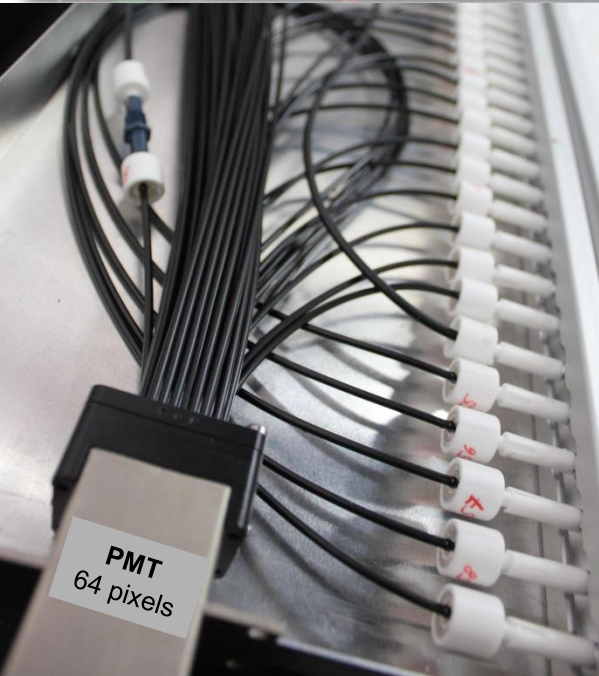
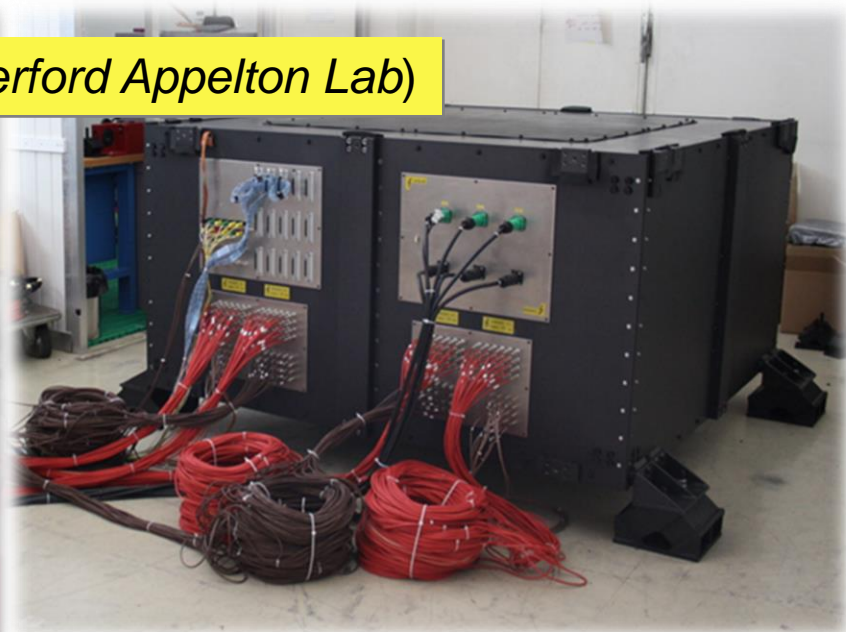
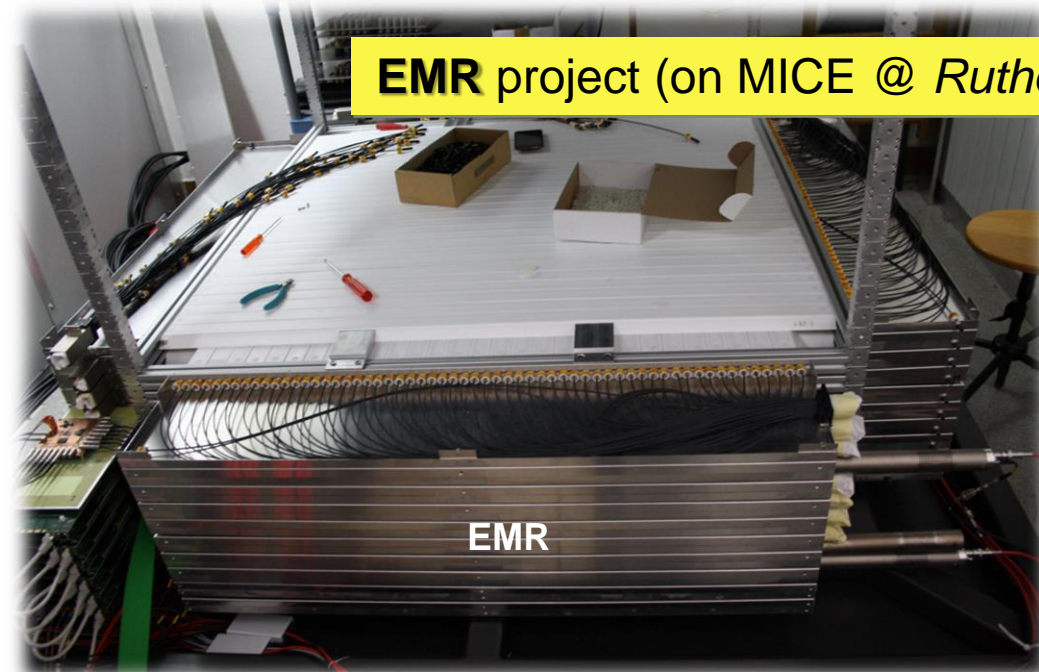
STK support plane (key part)

- Perugia on Ladders constr.
- DPNC on STK Design + Tests
- *Composite Design* on fabrication





**EMR project (on MICE @ Rutherford Appelton Lab)**



**2013 status (Laurent, Maxime, Coralie... + M'Barka, Franco and Mario):**

- EMR completion (including magnetic shield)
- Polishing of the 2832 bars has been successful
- Delivered to RAL in September 2013 (see next)





EMR project (on MICE @ Rutherford Appelton Lab)  
Delivery to RAL in the MICE experiment



Direct transport to RAL (safe...)



Shock absorber...!  
See next Slides (POLAR)



Tricky Rotating operation



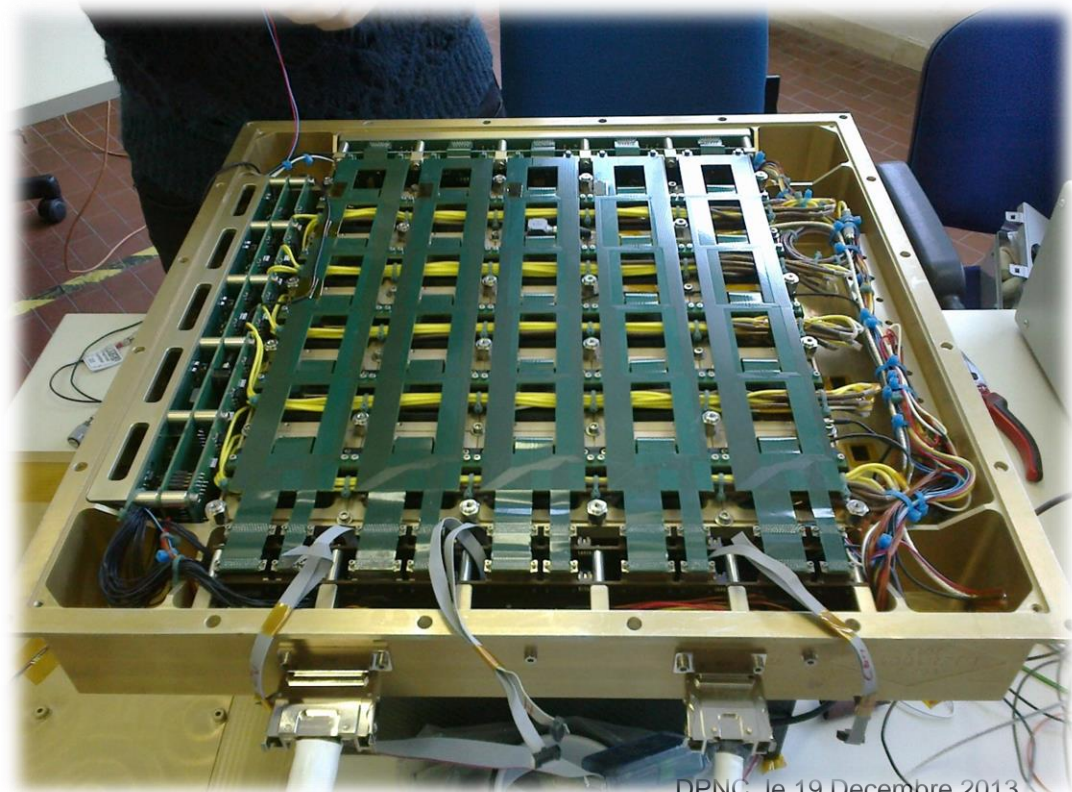
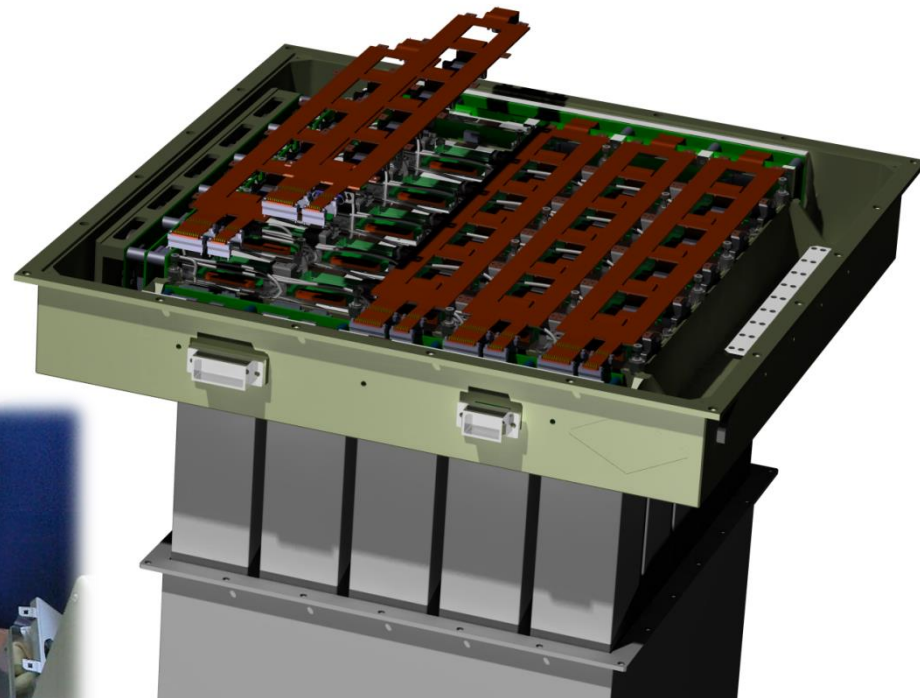
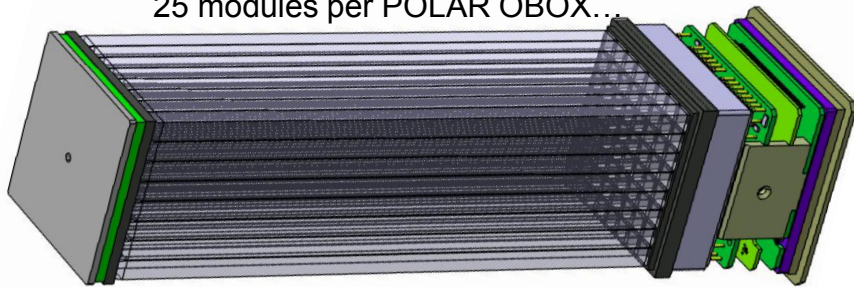
To its final location...





**POLAR project (on TG#2, Chinese Space Station)**  
**2 Qualification Models (QM) built in 2012...and 1 fully tested in 2013**

25 modules per POLAR OBOX...



**UNIGE responsibilities in 2013**

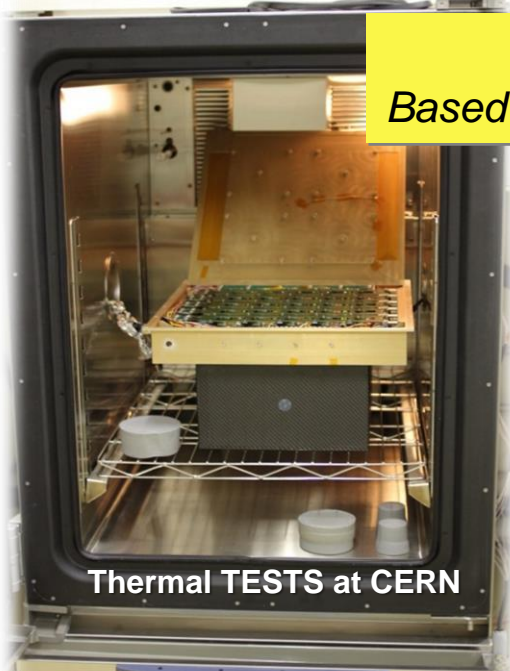
- Assembly of the whole QM2 complete
- Vibration and TVT OK...
- but something occurred during shock tests (acceleration up to 850 G!!!) in June... see next



# POLAR project

*Based on the «shock» experience... some redesign needed urgently!*

- QM2 failed during shock tests in June 2013
- Damper system at Interface level (TG2) + within the modules (damper material)
- Tests in China and Europe to validate the design (TERNI, Valence and Beijing)
- Early this week, some good news from China!..



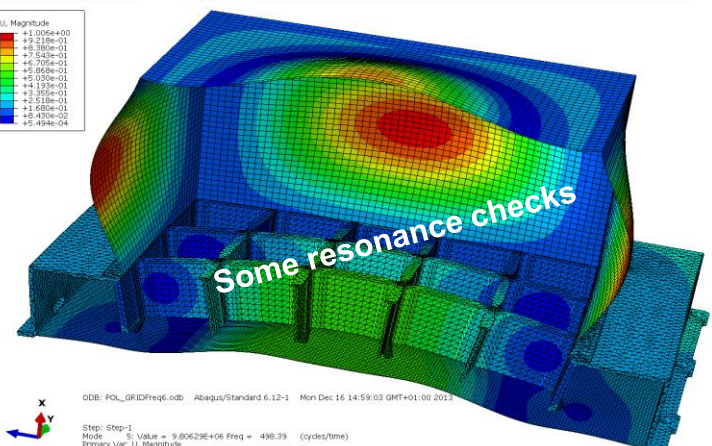
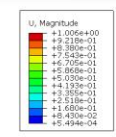
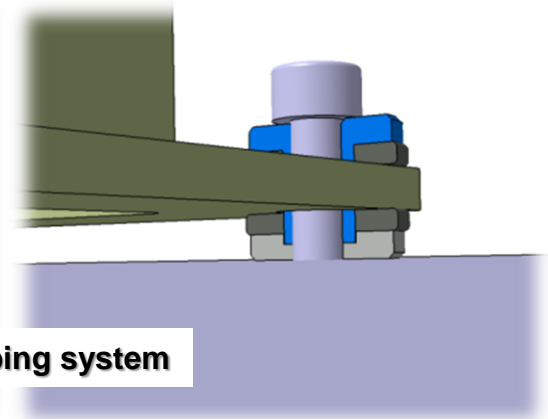
Thermal TESTS at CERN



Vibrations TESTS in TERNI



Damping system



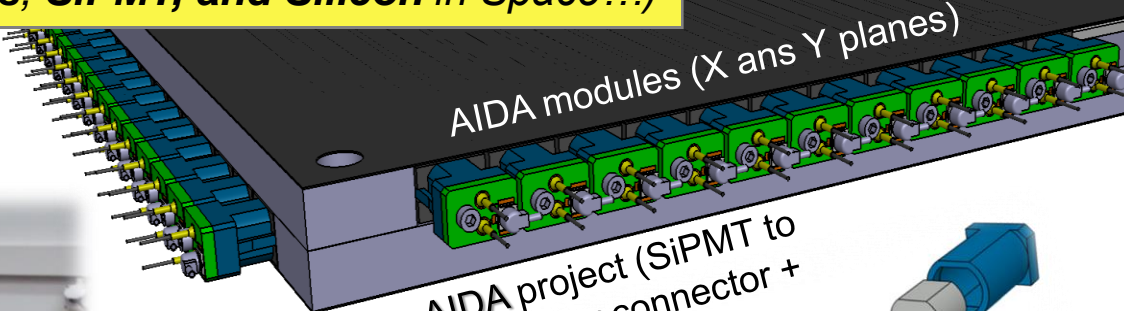


R&D on Mu3e, AIDA, LOFT  
(all about **Fibers**, **SiPMT**, and **Silicon** in Space...)

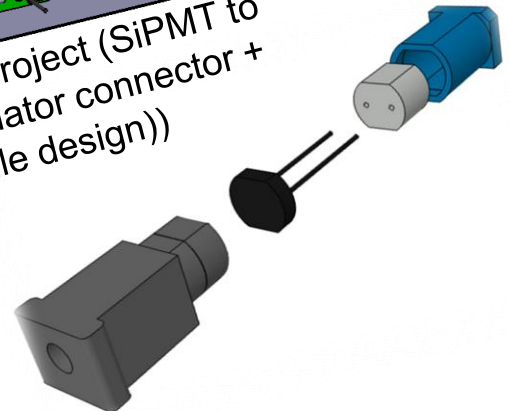
Mu3e: tooling development at DPNC



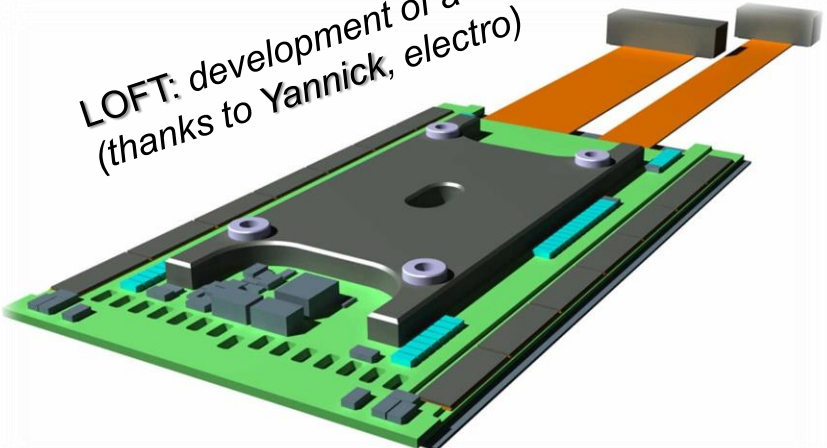
3 to 5 layers of 0.25mm scintillating fibers



AIDA project (SiPMT to Scintillator connector + module design)



LOFT: development of a FEE + Si design  
(thanks to Yannick, electro)



*A few words on what's coming next...!*





# Un petit résumé de la vie de Gérard au DPNC... et ailleurs!





# *Un petit résumé de la vie de Gérard au DPNC... et ailleurs!*





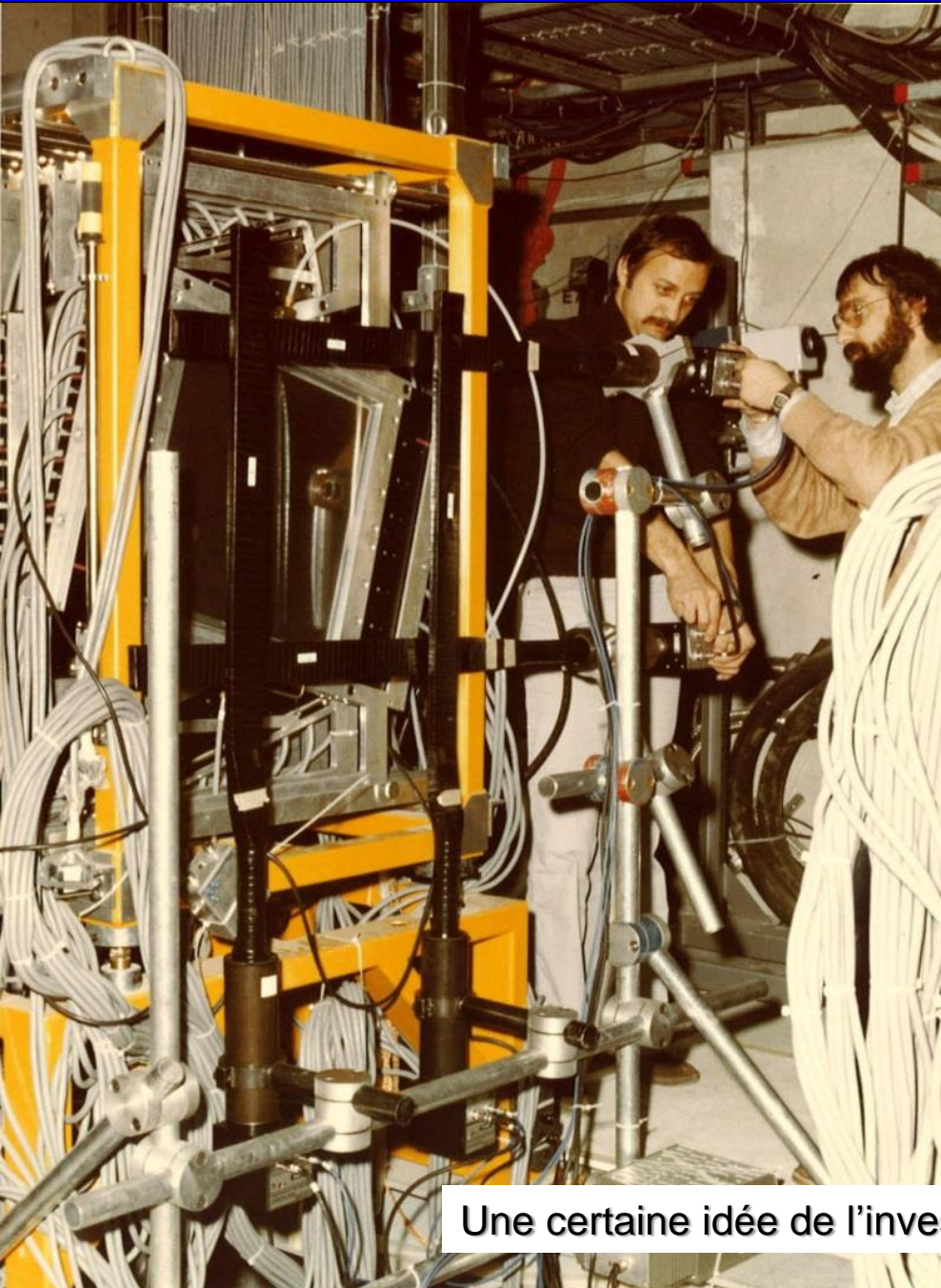
# Un petit résumé de la vie de Gérard au DPNC... et ailleurs!



Mais évidemment on ne résume pas sa carrière qu'à cet aspect...



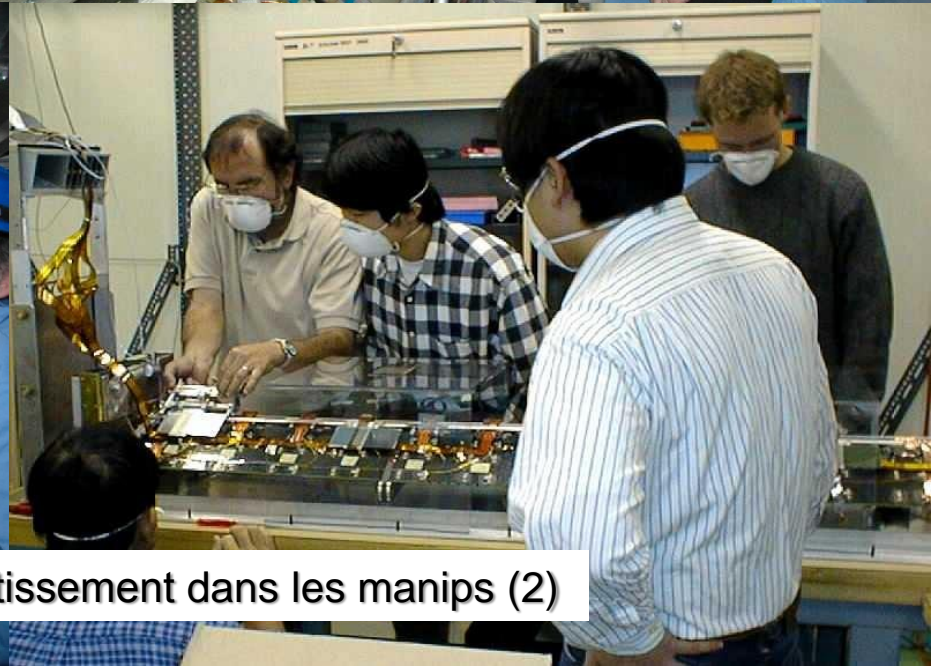
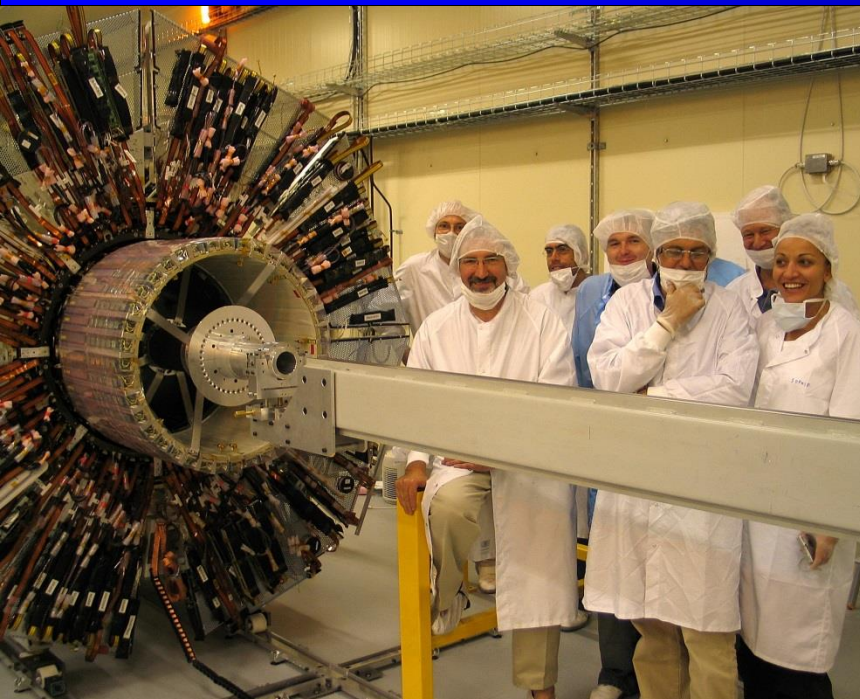
*Un petit résumé de la vie de Gérard au DPNC... il y a un certains temps!*



Une certaine idée de l'investissement dans les manips (1)



# Un petit résumé de la vie de Gérard au DPNC... sur ATLAS SCT



Une certaine idée de l'investissement dans les manips (2)



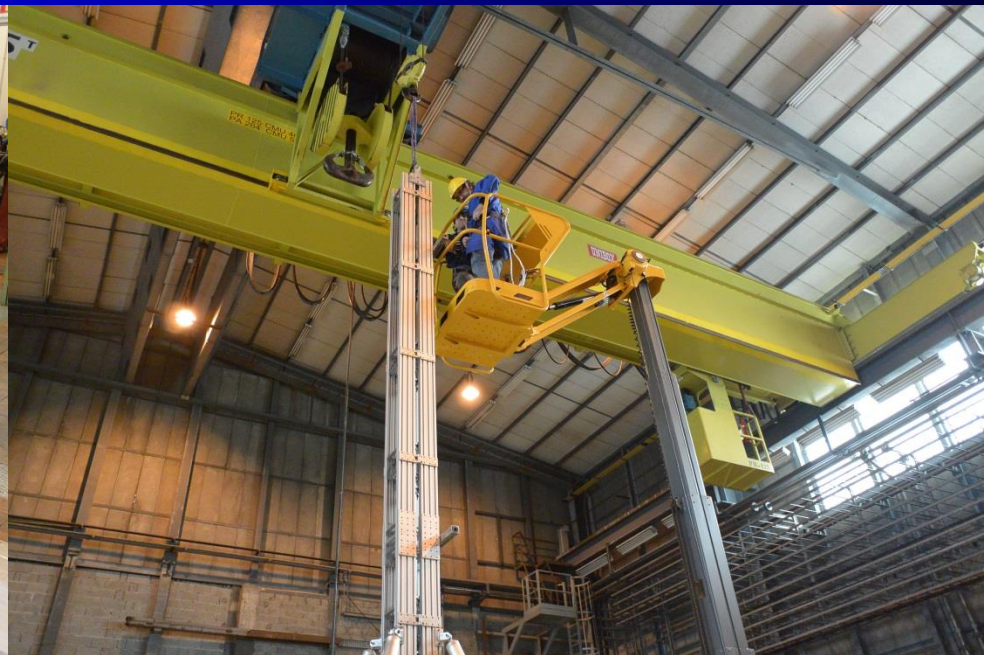
# Un petit résumé de la vie de Gérard au DPNC... sur ATLAS Upgrade



Si si ..il y était!!



# Un petit résumé de la vie de Gérard au DPNC... sur ATLAS\_IBL



**Du sérieux, de la minutie ...et l'amour du détail et du risque!!**



# Un petit résumé de la vie de Gérard au DPNC... et ailleurs!



Realisée sans trucage.. Si si!



Pour ta jovialité, ton professionnalisme...  
**MERCI Gerard!**  
Et bonne retraite