



# MEMPHYNO

*Construction, filling and  
first acquisitions*



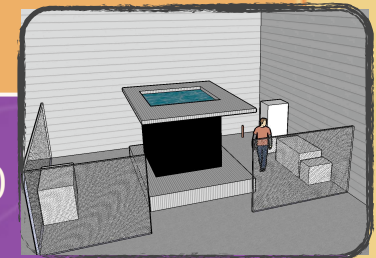
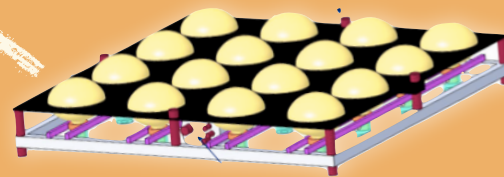
Modane, France - September LAGUNA Meeting



# Memphyno

Large number of LIGHT  
SENSORS: need grouped acquisition

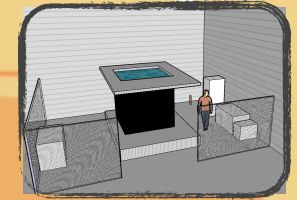
- Test the PMm2 demonstrator:
  - new electronics PARISROC
  - 16 PMTs: 8"



- ~8t of water (+Gd?)
- 2x2x2m<sup>3</sup> HDPE tank
- Matrix of 16 PMTs and/or other photodetectors (e.g.: X-HPD)
- Muon hodoscope:**
  - 2+2 planes of OPERA experiment (scintillator bars)
  - 4 Pmt(ino) multi anodes (64ch)



# Memphyno Construction



Hodoscope  $\mu$

2 x



scintillator planes

4 x

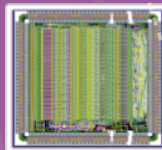


PMTs (pmtino)  
multi-channels

4 x



+



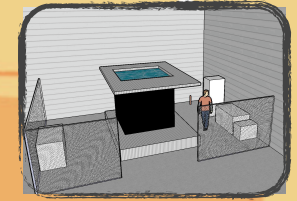
SUPPORT



Test bench for PHOTODETECTION  
and ELECTRONIC solution for  
large detectors



# Memphyno Construction



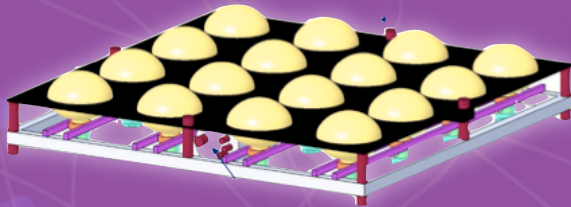
PMTs

4 x

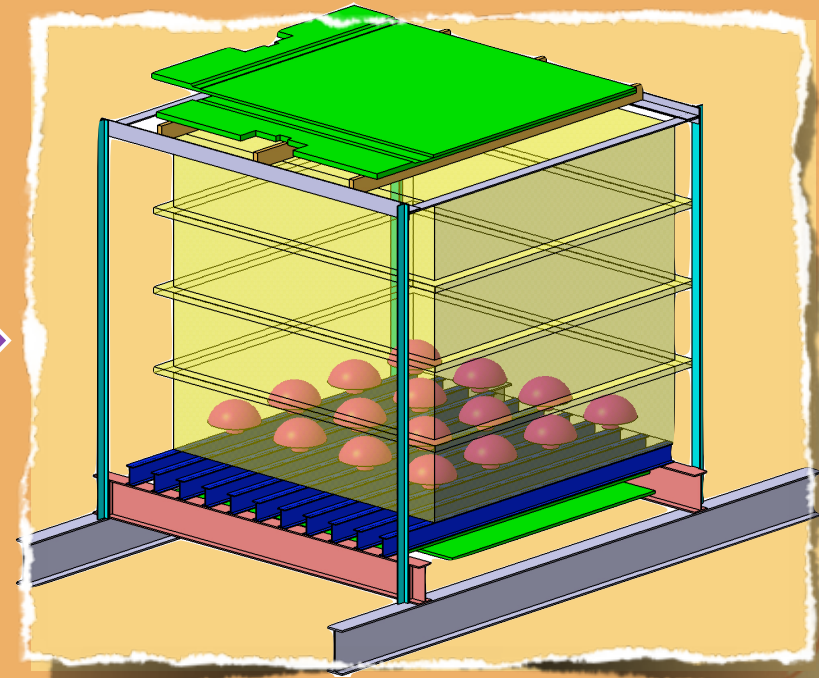


PMTs from  
Borexino (BMT)

...waiting for the  
demonstrator..



Test bench for PHOTODETECTION  
and ELECTRONIC solution for  
large detectors

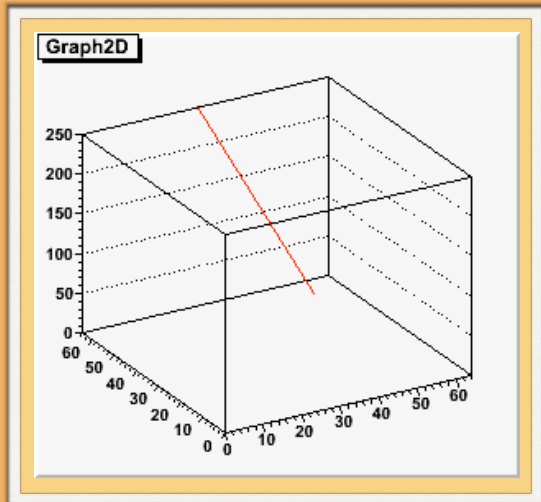


# Memphyno

Test bench for PHOTODETECTION  
and ELECTRONIC solution for  
large detectors

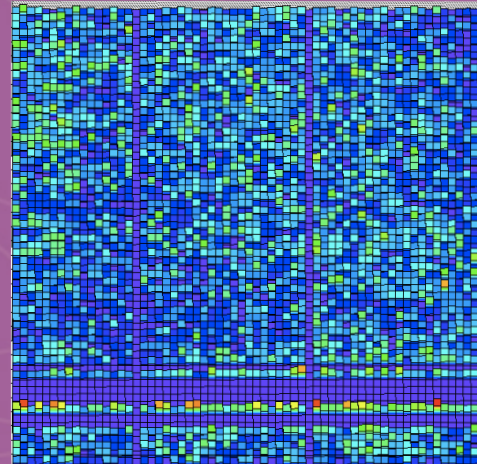


Tracks reconstruction



Hodoscope response tests

Plan 0 (Right)- Pmt 0 - maroc 18

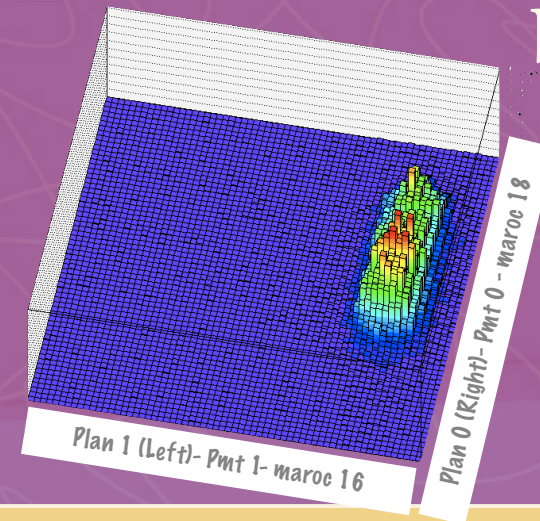
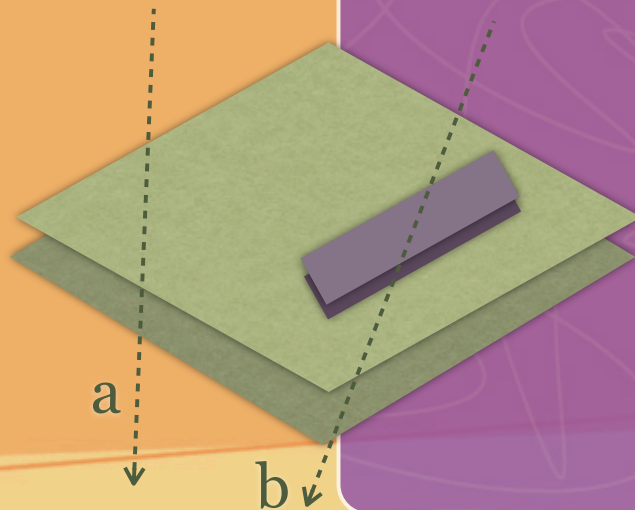


a

Ex. of TOP  
Hodoscope  
reconstruction

Plan 1 (Left)- Pmt 1- maroc 16

b



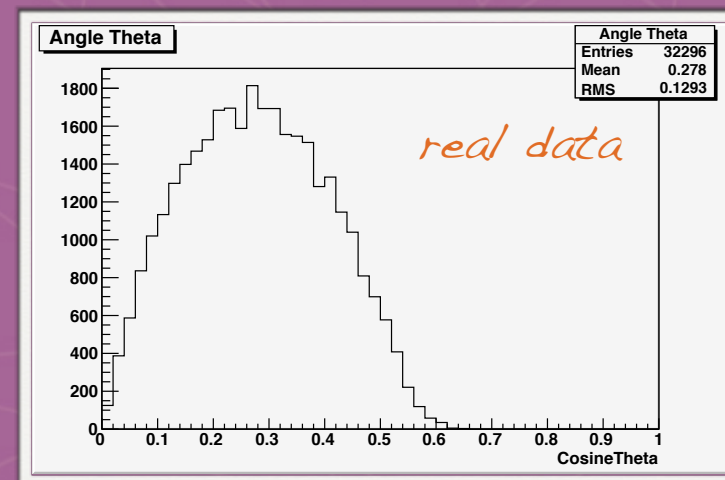
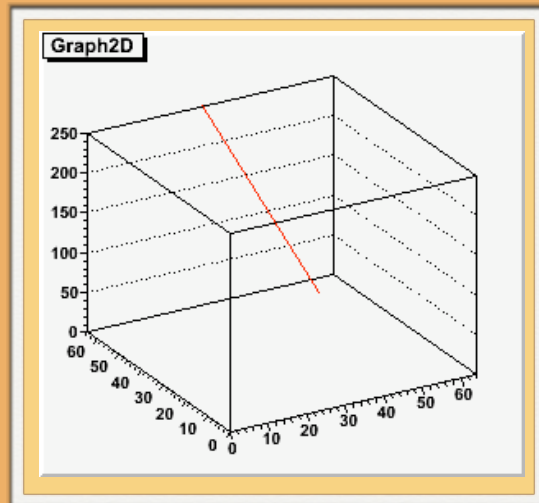
Michela Marafini

# Memphyno

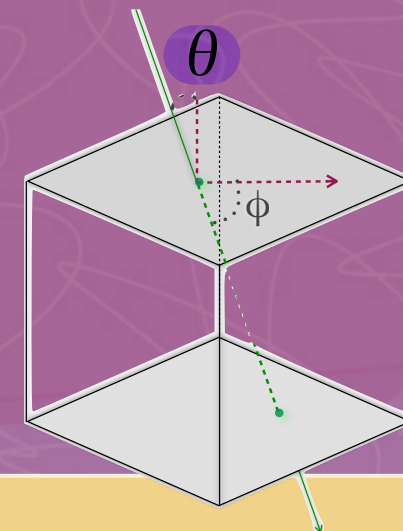
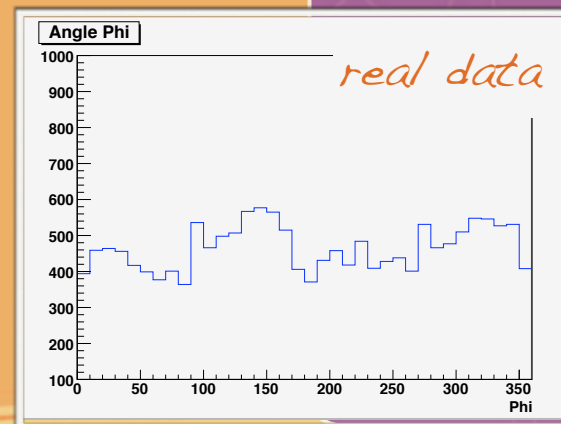
Test bench for PHOTODETECTION  
and ELECTRONIC solution for  
large detectors



## Hodoscope response tests



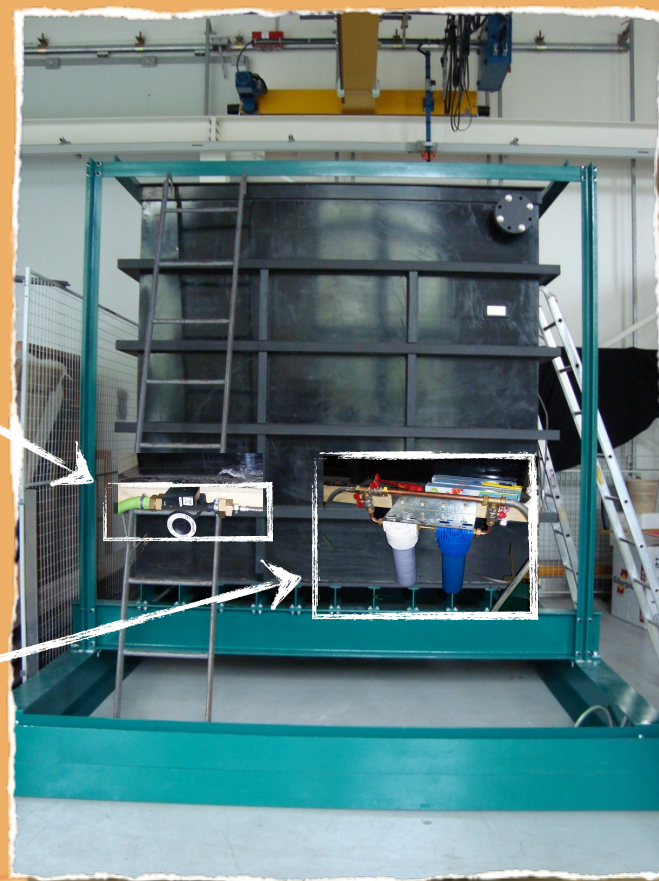
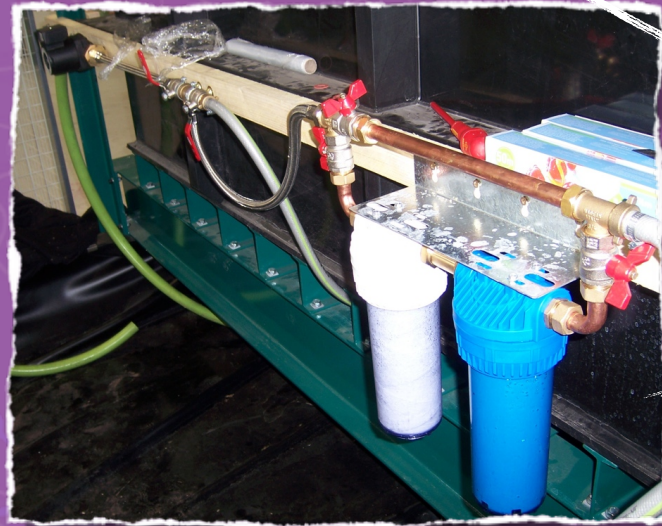
Angles  
distributions



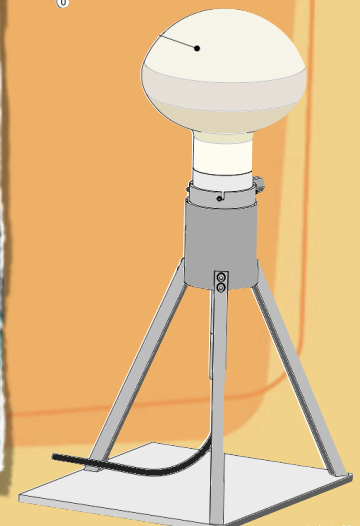
# Memphyno Assembling



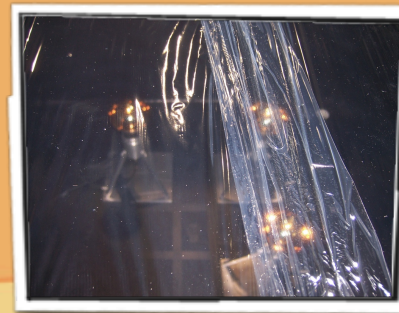
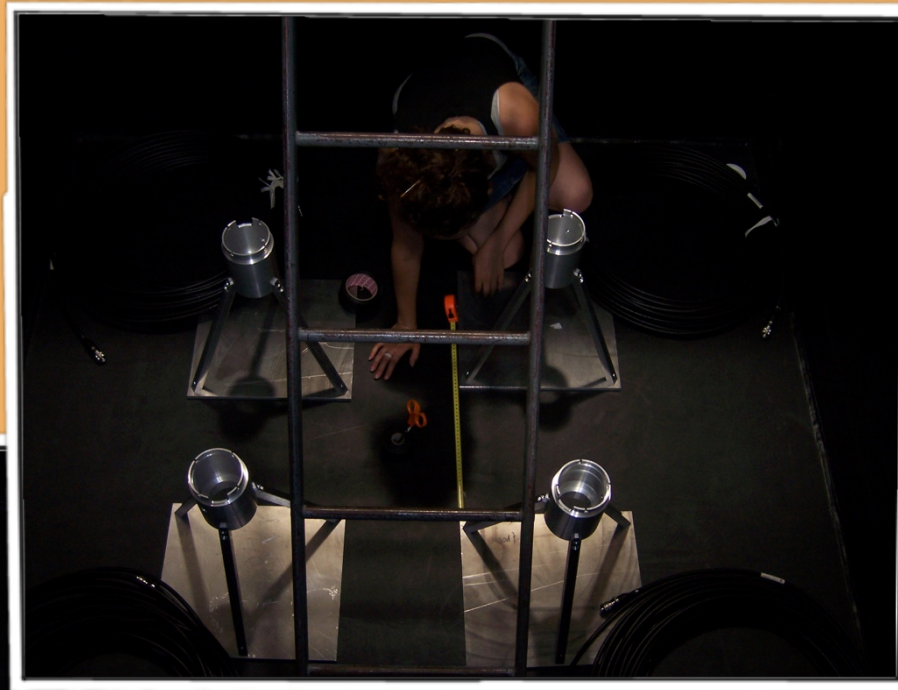
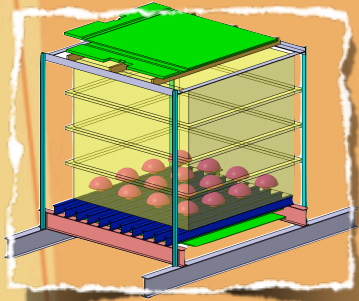
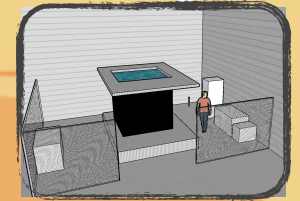
*water  
filtration*



x 4



# Memphyno Assembling





# Memphyno Assembling



LED: Test transparency

periodic check

..coming SOON..

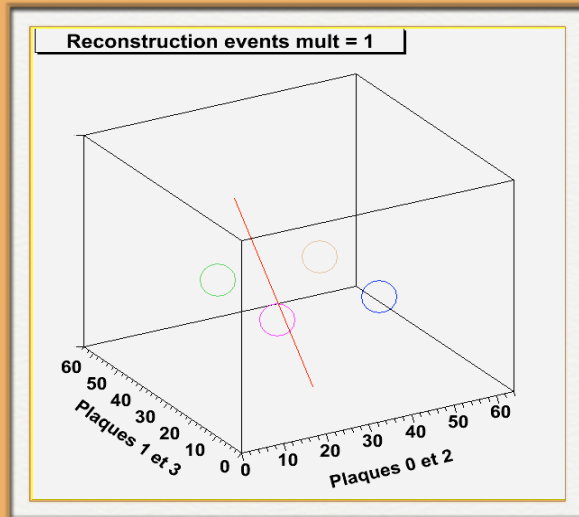
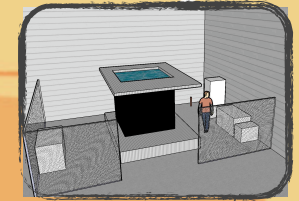
START!!!



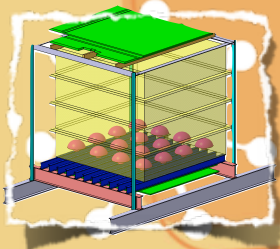
Filling:  
~ 13 hours



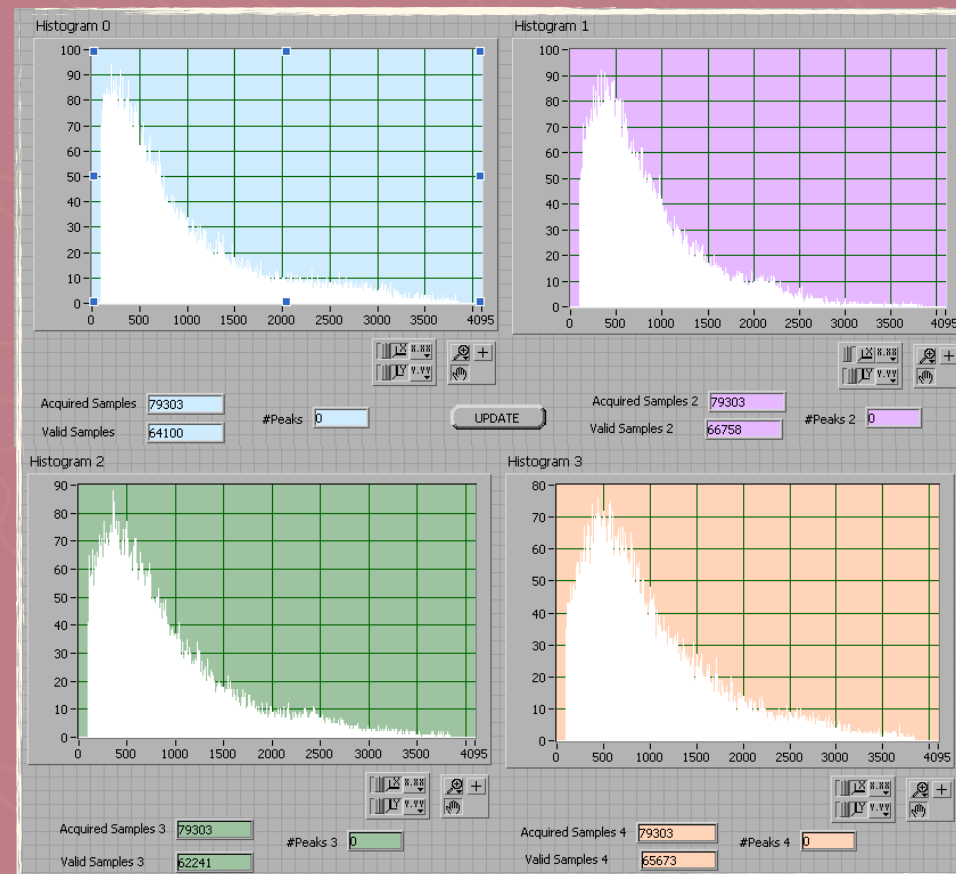
# Memphyno BMT's



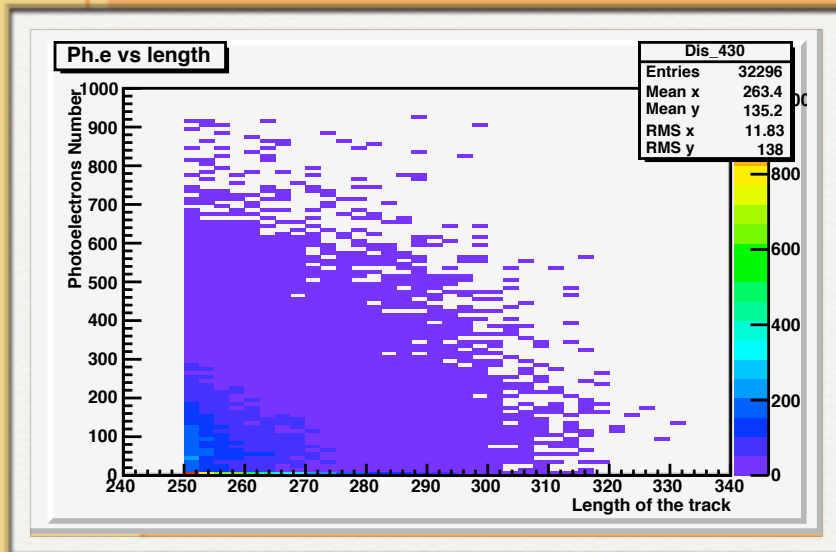
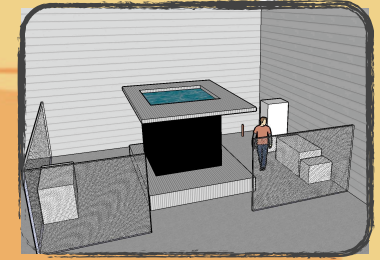
*Hodoscope + BMT's data  
(July 2010)*



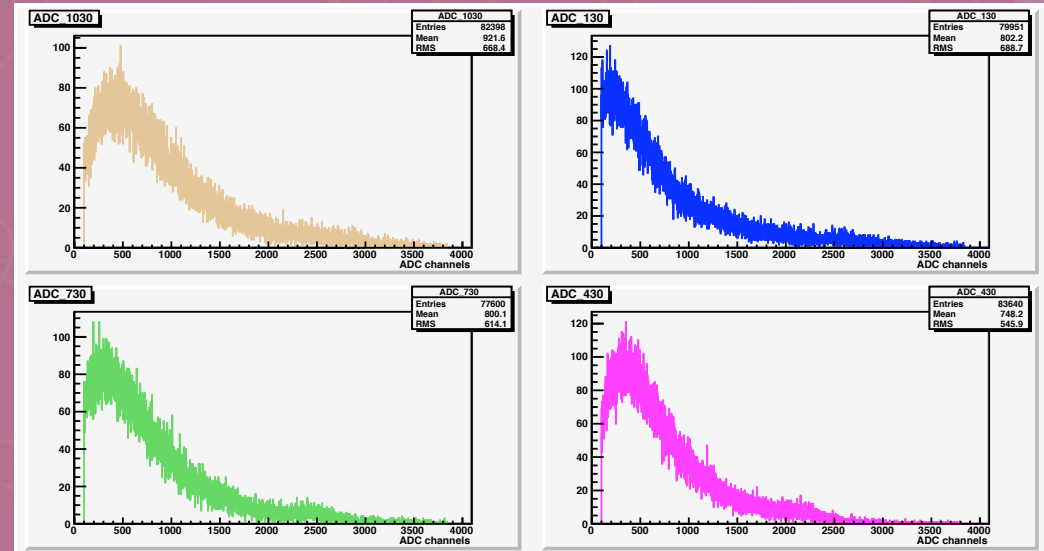
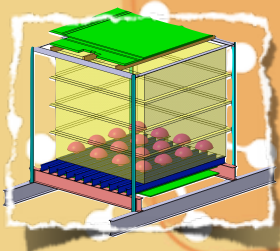
## BMT Spectra with the Acq. program



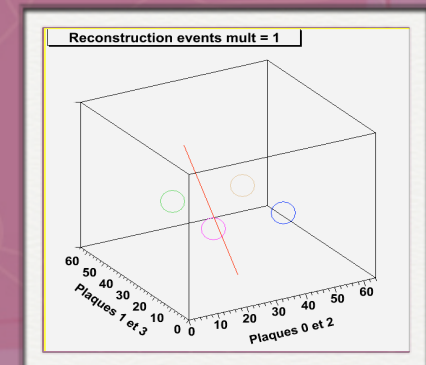
# Memphyno BMT's



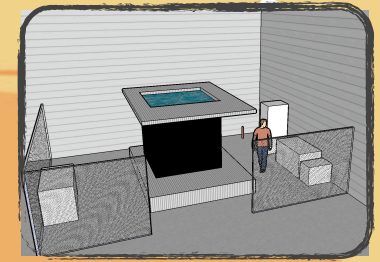
*Hodoscope + BMT's data  
(August 2010)*



*Event display  
integrated in the  
acquisition  
program*



# Memphyno FUTURE

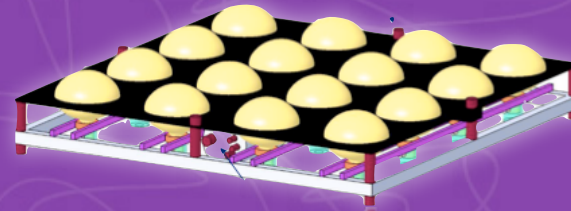


## Demonstrator arrives soon:

- Monday 13<sup>th</sup>: first measurements at LAL
- Beginning of October the 16 PMTs matrix moves to APC
- Test will start...

*Next week*

**Test bench for  
PHOTODETECTION and  
ELECTRONIC solution  
for large detectors**



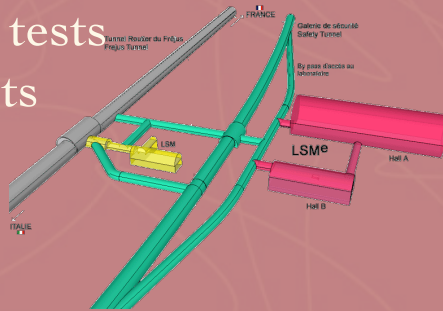
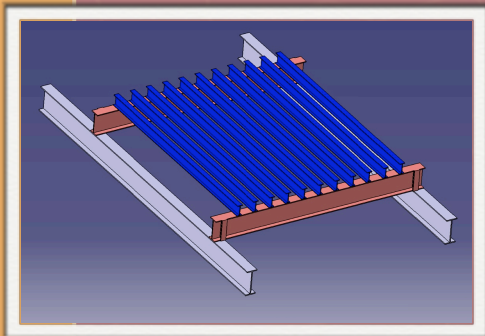
Modane, France - September LAGUNA Meeting

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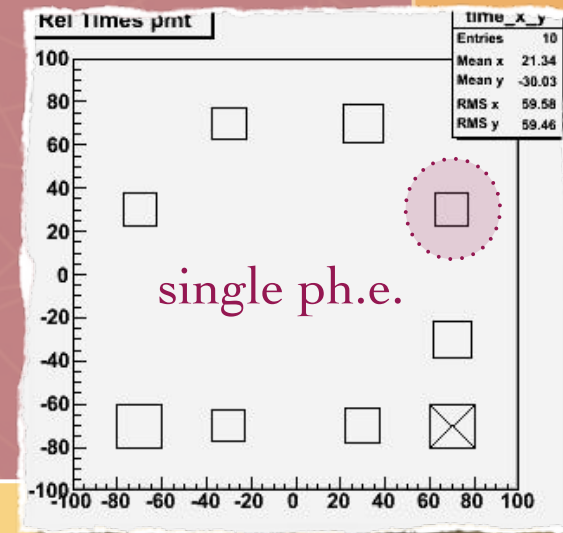


## Go to LSM underground site

- rock background tests
- cosmic muons tests



*The support is easily dissembled ("Ikea style")!*



**Test bench for  
PHOTODETECTION  
and ELECTRONIC  
solution for large  
detectors**

## Go to a CERN beam: e, K, π ..

- "beam triggered" test
- vertex reconstruction
- cosmic muons bkg





GRAZIE



*Michela Marafini*