

Summary of calorimeters

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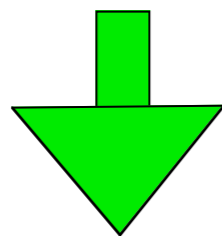
Large Detector Kickoff Meeting
overview of the Calorimeter
what we have done
what we have to do

overview of the Calorimeter

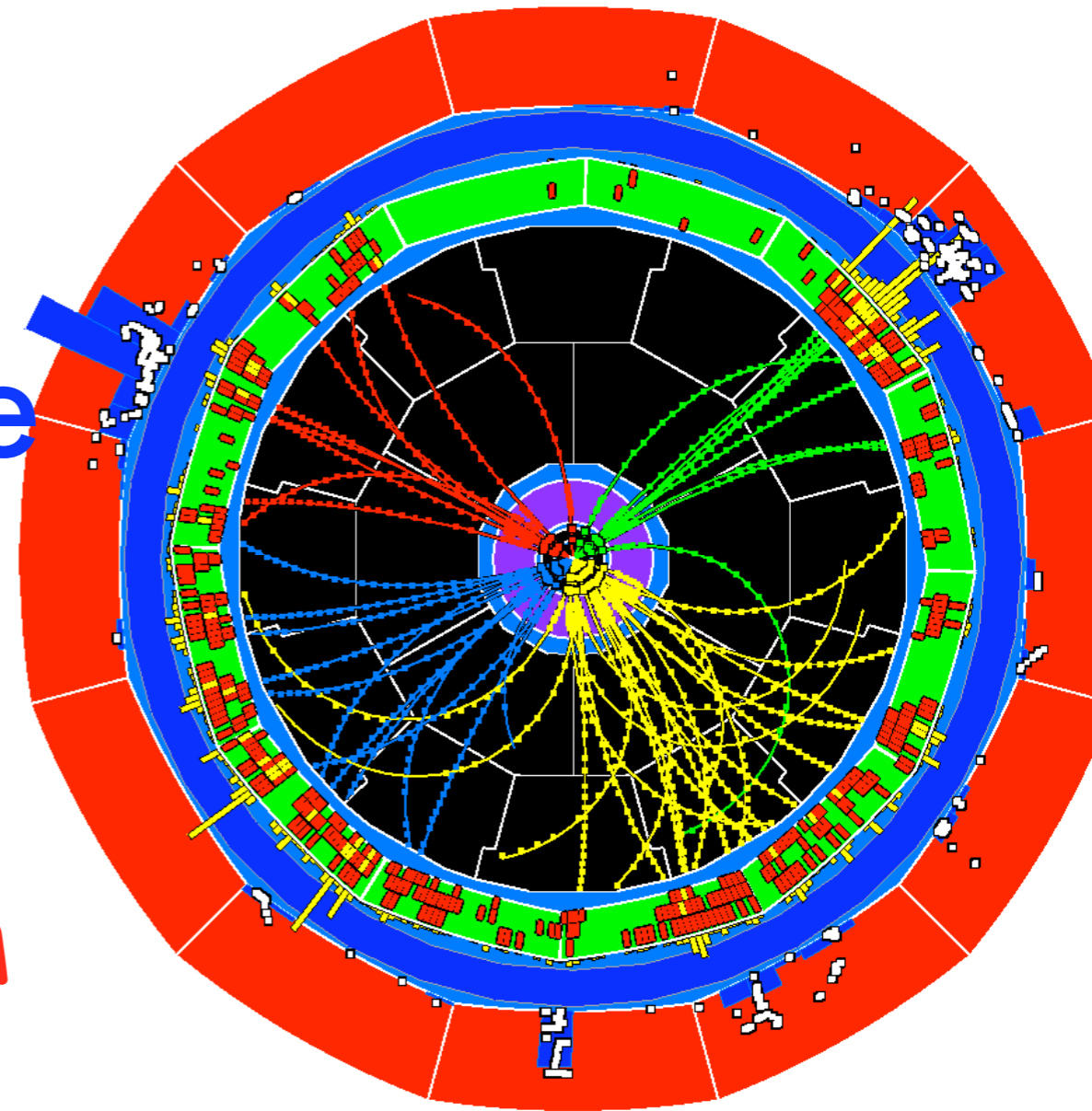
$$e^+ e^- \rightarrow Z + H \rightarrow b\bar{b} + b\bar{b} : 4jets$$

Jet resolving

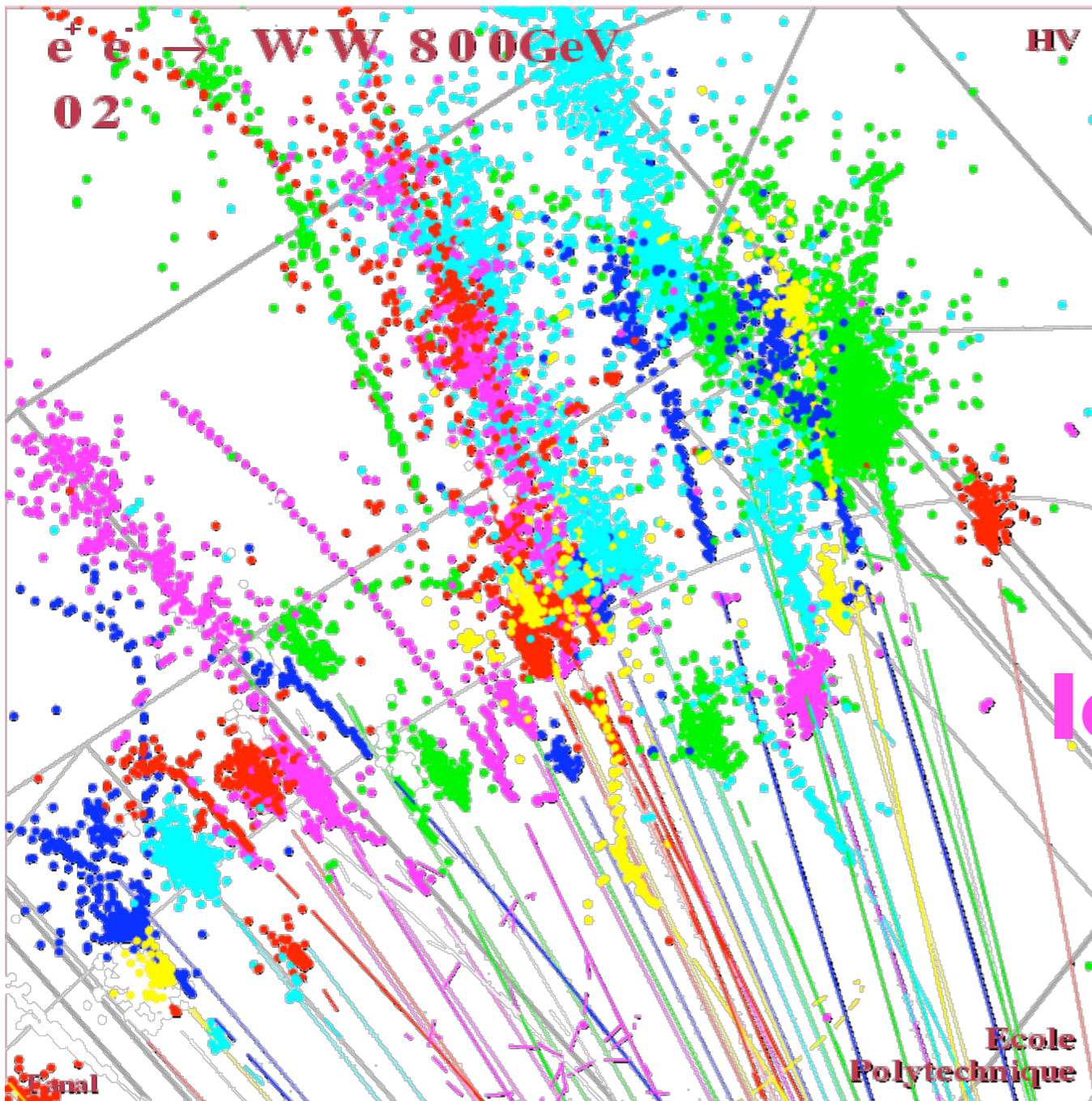
to know every particle contents in a JET



Particle Flow Algorithm



Particle Flow Algorithm



requirements for the calorimeter

**fine segmentation
in lateral and
longitudinal directions**

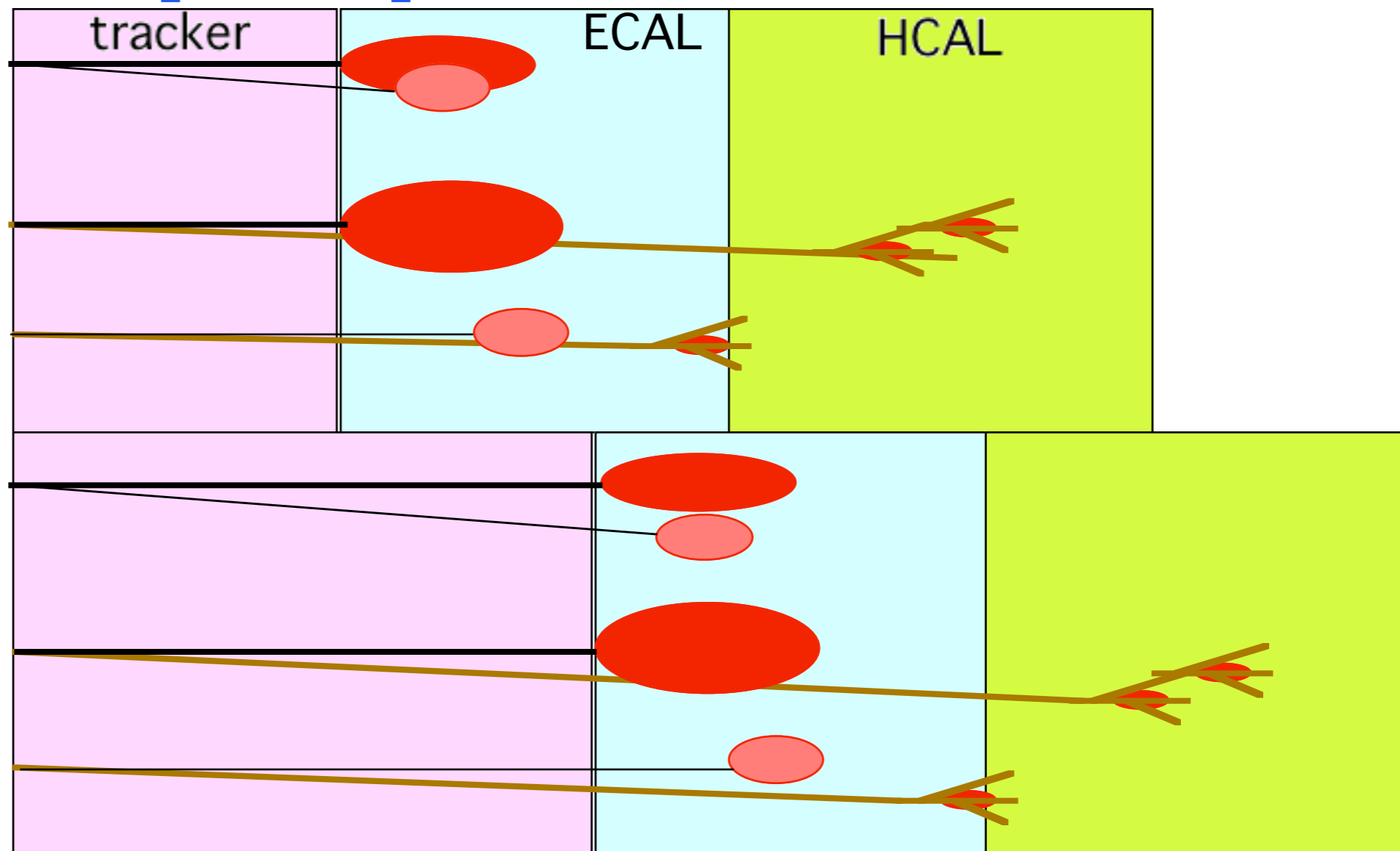
3D detector

Large detector to achieve Particle Flow Algorithm easier

less overlap of particle clusters

tracker:
momentum
65%

calorimeter:
energy
35%



Worldwide studies for LCCAL

ECAL	
Si+W	CALICE US
Scinti.+ W	GLD
Si/Sci+W (Hybrid)	US LCCAL

HCAL	
Scintillator	CALICE GLD
RPC	CALICE- US digital US
GEM	

Large Detector is a concept

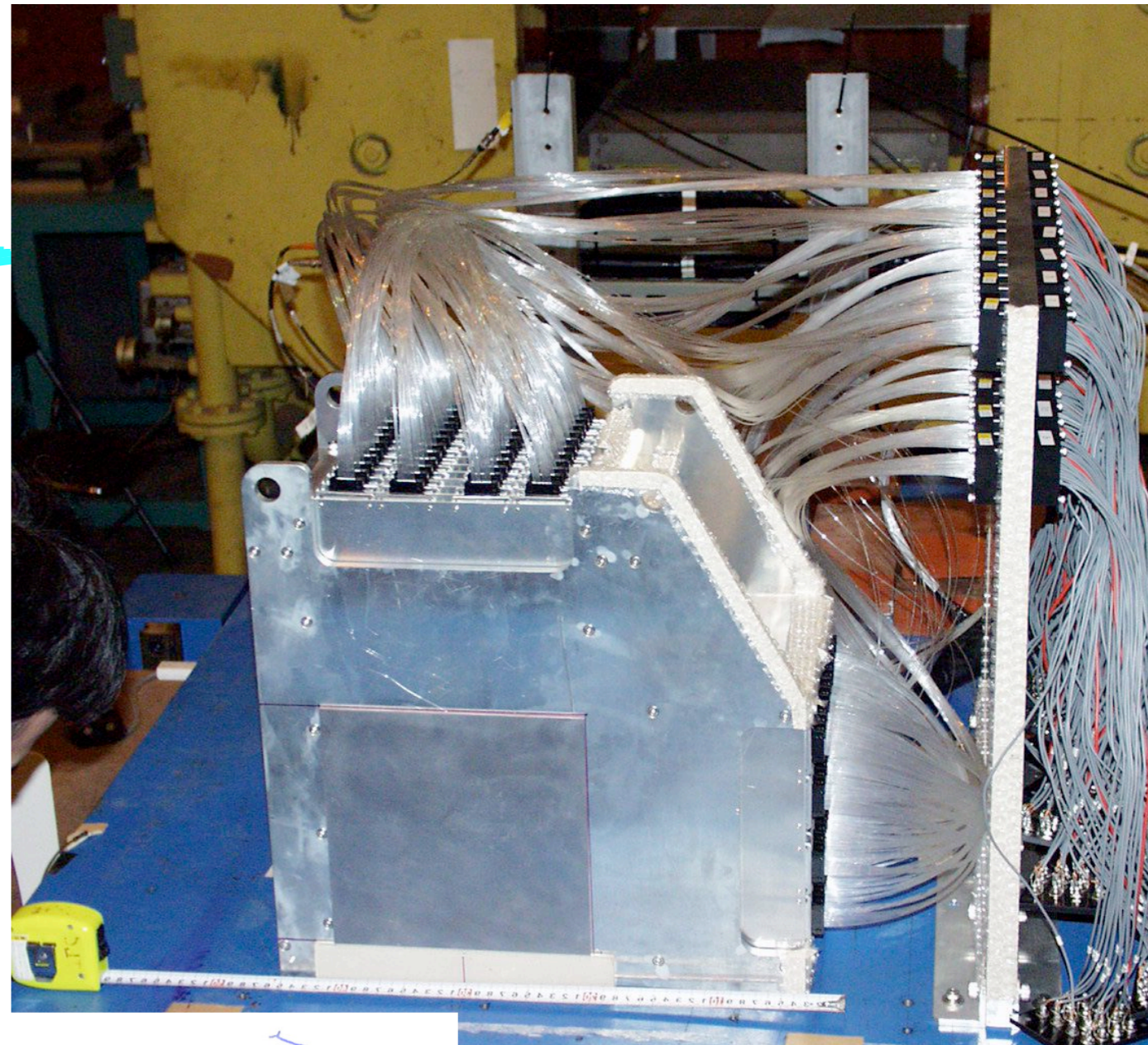
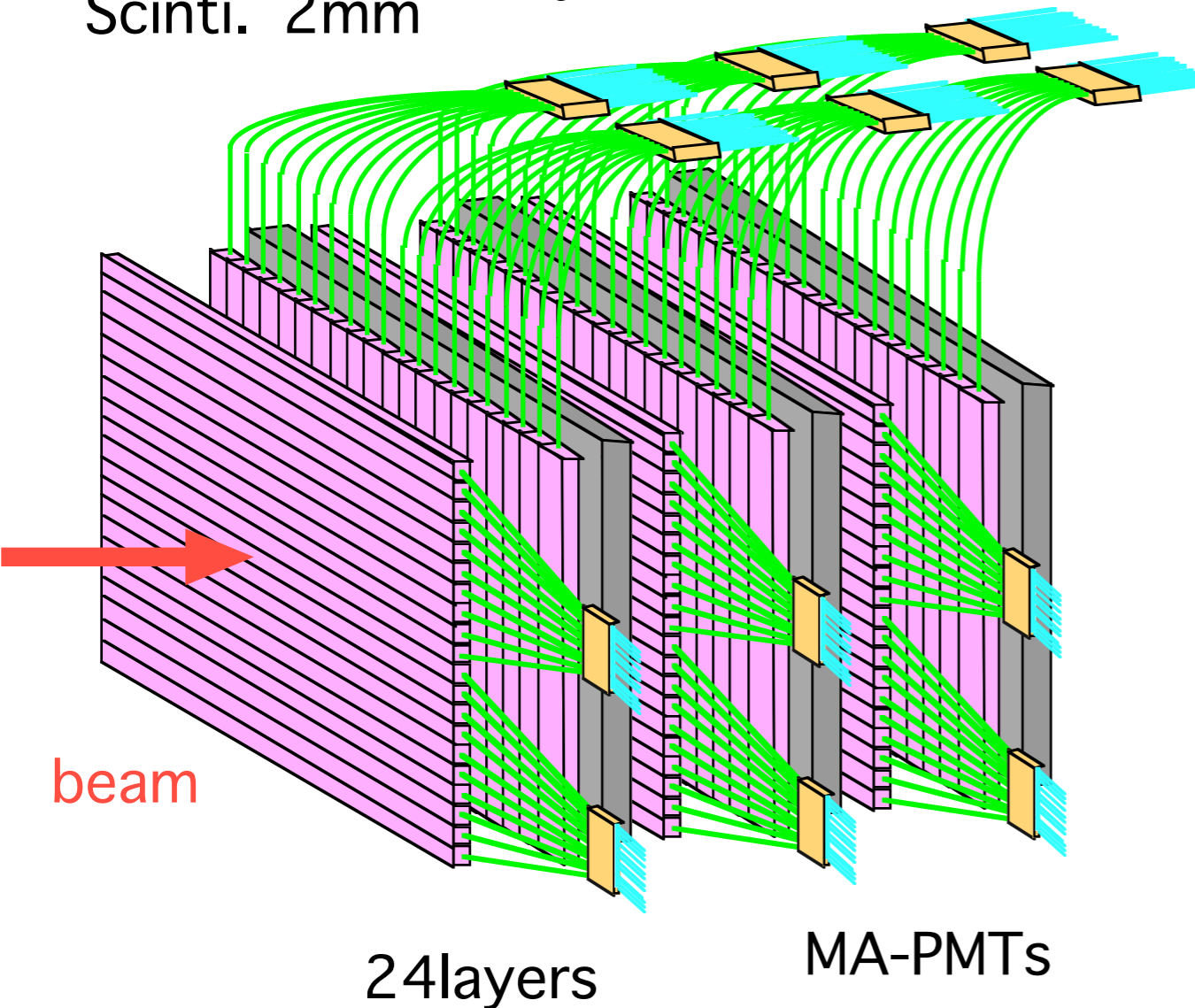
- Large Detector does not limit any other R/D's
- At this moment, we're a small group (Japan, Korea and Russia(JINR))
- We propose a scintillator based E & H-CAL

What we have done

fine segmented scintillator calorimeter

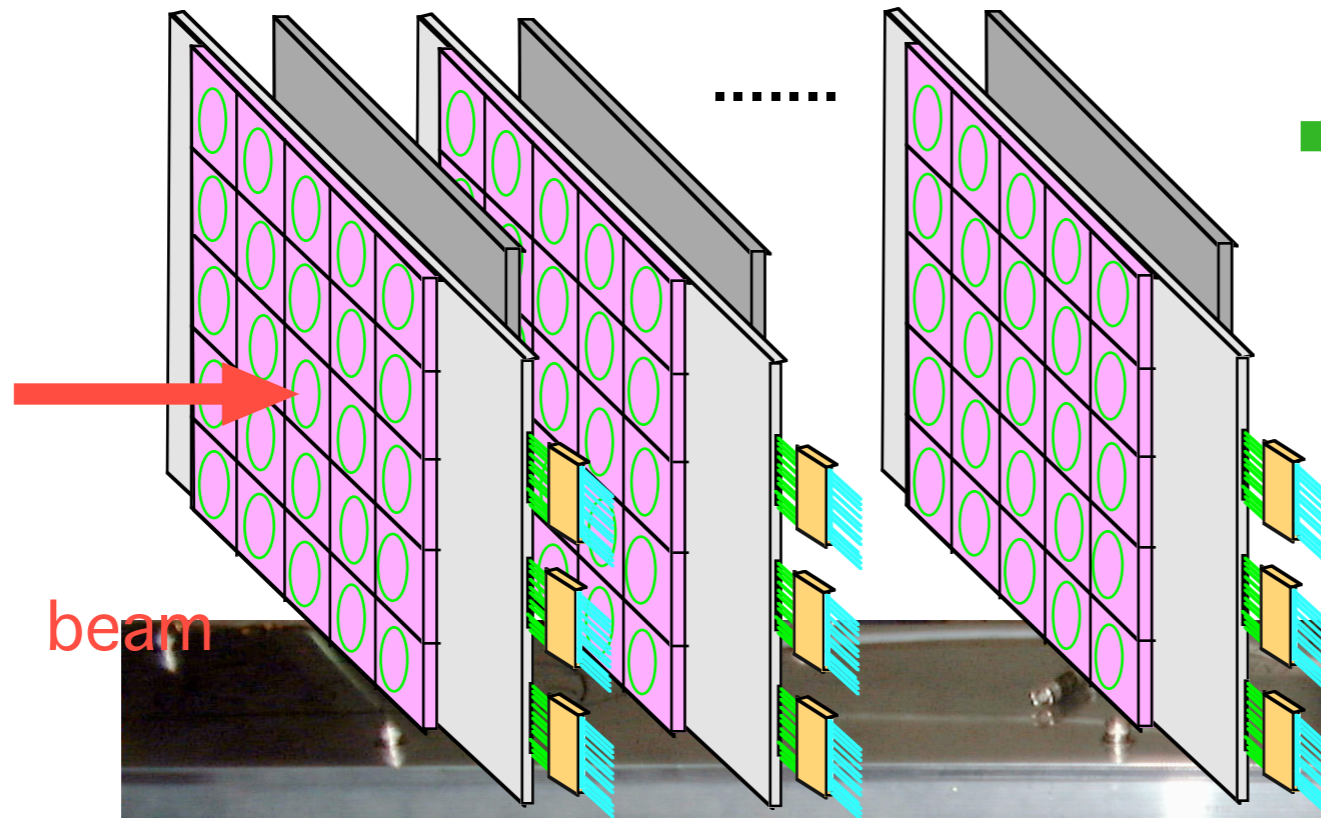
Strip-ECAL

Scinti. 2mm Pb 4mm



What we have done (cont.)

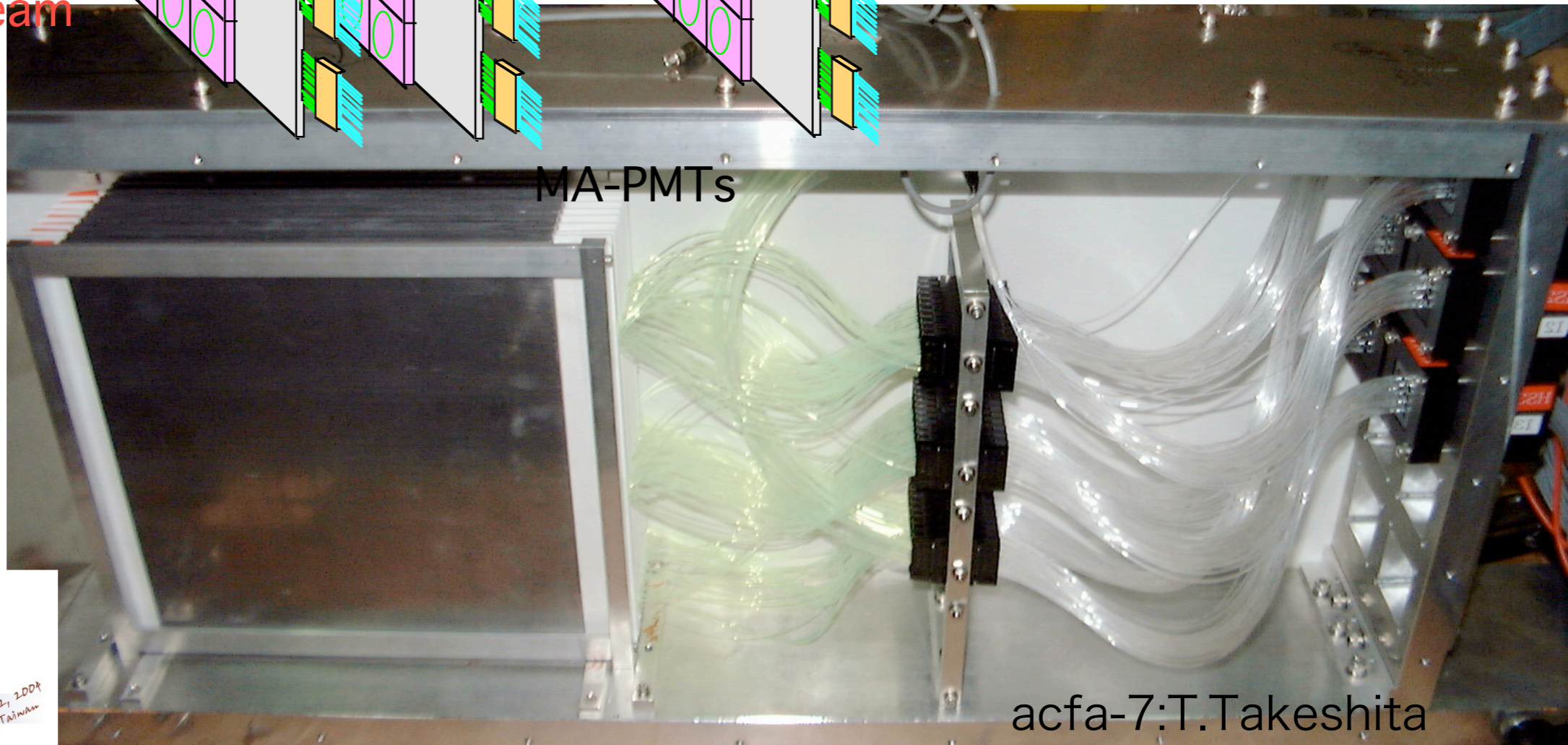
Scinti 1mm Pb 4mm



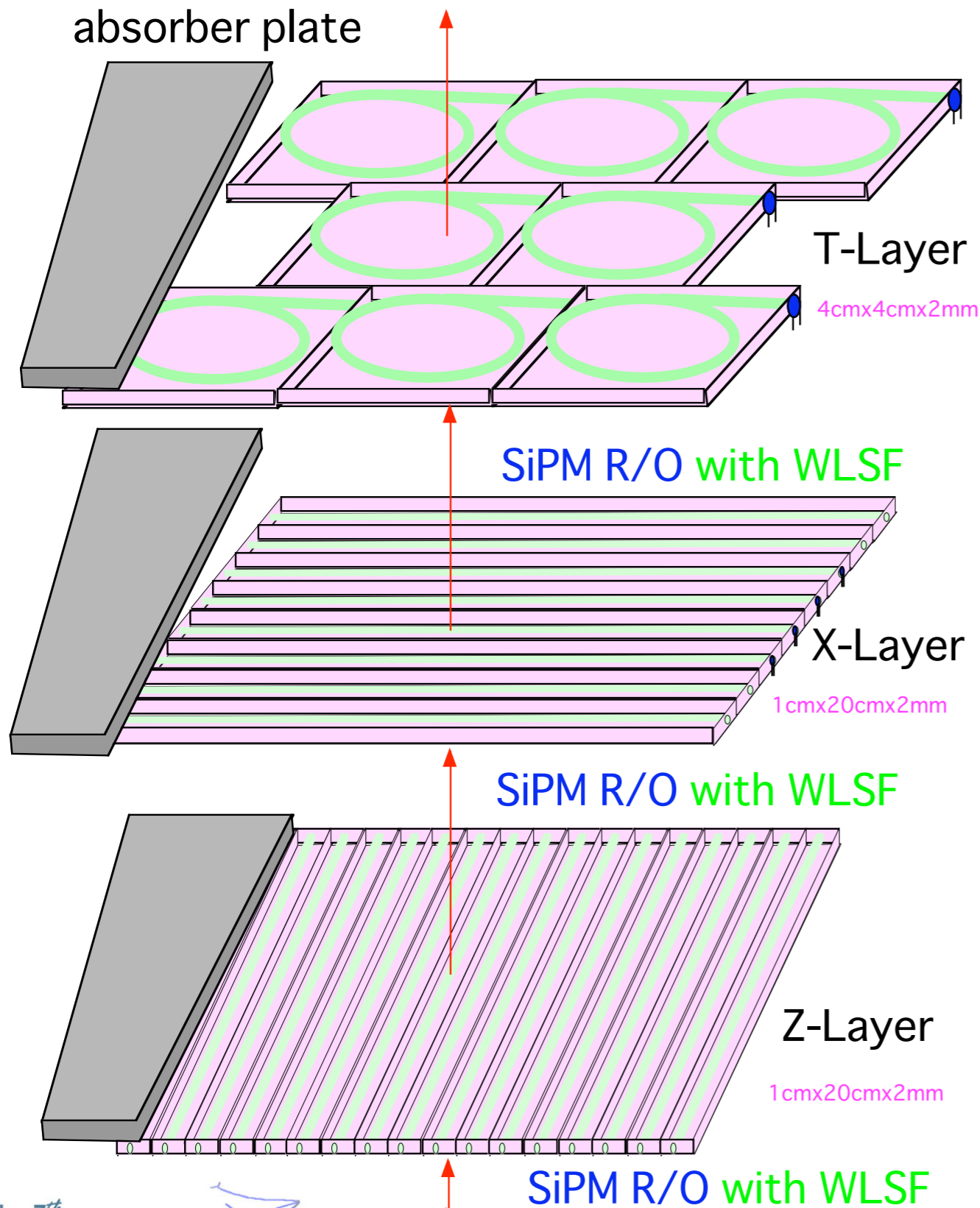
Tile-ECAL

beam

MA-PMTs



What we have to do



- Silicon photon sensor development
 - SiPM (Russia)
 - DPPD (Japan)
- electronics
- optimization of detector

Simulation

What we have to do (cont'd)

- construct a prototype module
- do test at beam