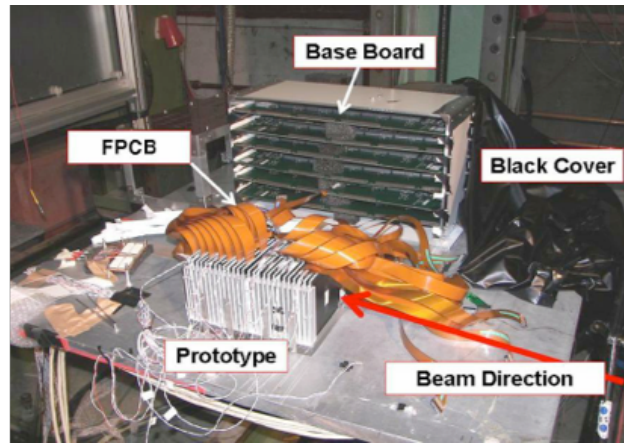
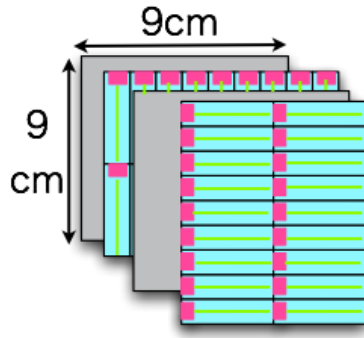


ScECAL page by TohruTakeshita - 2015-08-16

the progress is shown with the photos and drawings as:

(1) small prototype (2007)

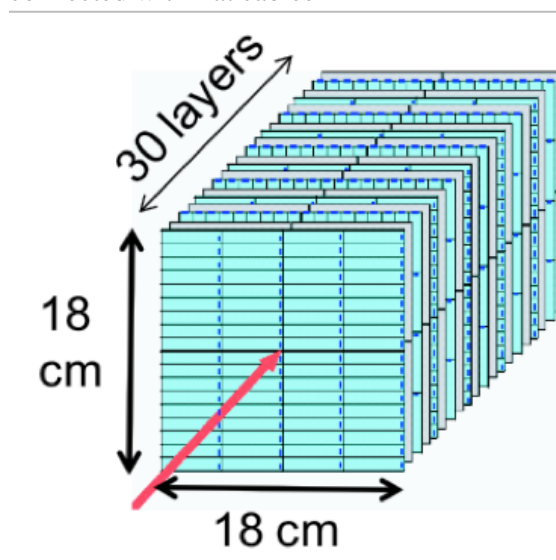
- 1st scecal prototype: which consists of 1cm x 45mm x 3mm scintillator strips with MPPC read out
- There are 468 such strips



(2) second prototype (2008-9)

four times bigger in the cross section from the 1st

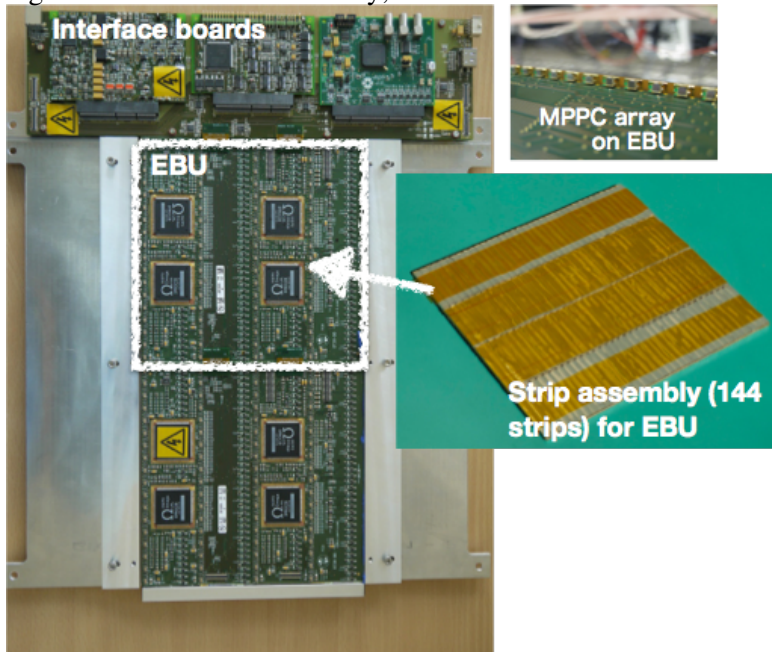
- 18cm x 18cm prototype
 - ◆ which consists of 1cm x 45mm x 3mm scintillator strips with MPPC read out
 - ◆ There are 2160 such strips,
 - ◆ the read out electronics boards are sitting outside the detector
 - ◆ connected with flat cables



(3) embedded electronics layers (2013-)

- 3rd scecal prototype: according to DESY effort, the embedded electronics design layers are available
- with power pusing capability, interface boards outside detector
- the size is 18cm x 18cm, where 144 scintillator strips of 5mm x 45mm x 2mm
- thickness changed 3mm to 2mm and with changed from 10mm to 5mm
- smaller and smaller,

- top side of the module is fulfilled with scintillators and the other side is occupied by read out electronics (EBU),
- there are four ASICs named SPIROC2b which amplify, shape the MPPC signal, digitize the pulse height and store into the memory,



In parallel the photo sensor development is on going;

Photo-sensor is one of the most relevant device for scecal, thus we are developing the photo-sensor called PPD (Pixelated Photon Sensor). The calorimeter requires the dynamic range very much, we are increasing the number of pixels with smaller sizes. PPD development is progressing into increase the number of pixels, which means to be the smaller pixels, from 25um pitch to 10 um pitch. The photos show the history of the development,

Here are those PPD-pixels in microscope photos,

-- JaroslavCvach - 02-Sep-2011

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Topic revision: r6 - 2019-09-30 - TohruTakeshita



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