

Discussion Common Modules

KEK, 20.4.2015

Most groups have taken the final data with the current modules and are preparing a publication.

This is why we should ask the question of what to do know.

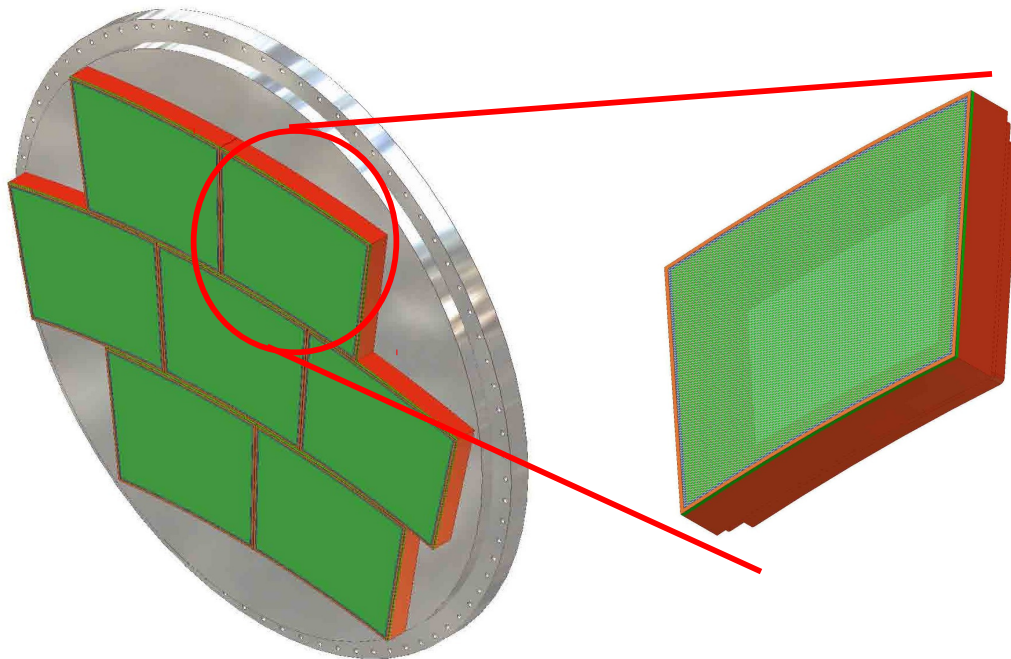
This discussion should be continued after the discussion of Jan, but because of timing reasons I want to state a few introductory words now.

The main question is what we want to implement in common:

- certainly backframes
- Gating grids??
- S-ALTRO16
- Common padplane (again ;-))

Can we unite the two GEM modules? The ECFA Detector R&D panel charged us to do so.

Currently: Common Modules sizes



Modules have size of $22 \times 17 \text{ cm}^2$

We should use the light weight design from now on.

The fit also in the old endplate, mounting brackets are available, also the mounting tools works – we debugged it in March

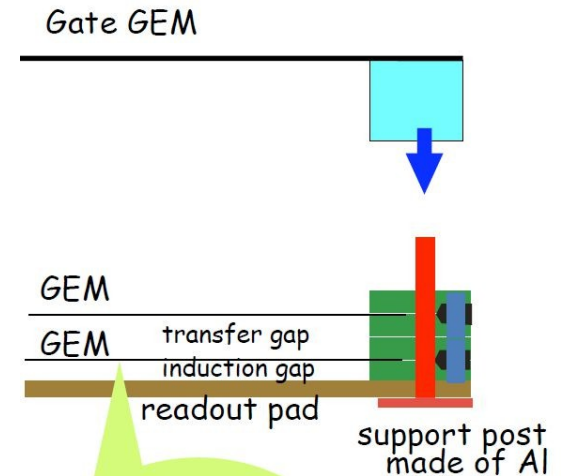
Gating device



Shall we foresee a gating device? I think yes.
How many HV connections? 2?
What distance from amplification stage?
Do we need a field degrader?
How much space do we need at the border?

Can the Japanese provide a larger number of gates (~10), if they are proven to work?

Should we develop a wire based gating grid for comparison reasons?



Common pad plane (I)



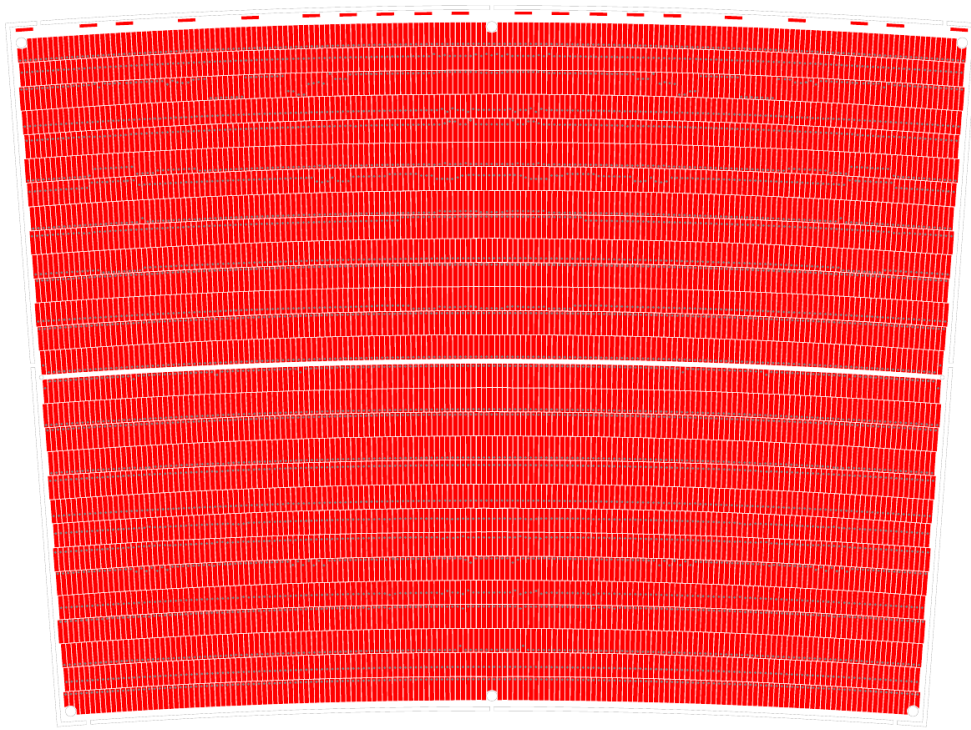
Common pad plane?

- Number of pads given by SALTRO-16: 3200 $\Rightarrow 1.26 * 8.8 \text{ mm}^2$ staggered?
- We should decide what make most sense
 - full coverage = $1.26 * 8.8 \text{ mm}^2$ staggered?
 - cover only 1/2 of modules – left/middle/right with nominal pads $1 * 6 \text{ mm}^2$
 - What other possibilities?
- If we have a gating grid – what impact does this have on the module design.
 - Can we still have no frames on sides?
 - How many contacts do we need? 2?

Micromegas Module

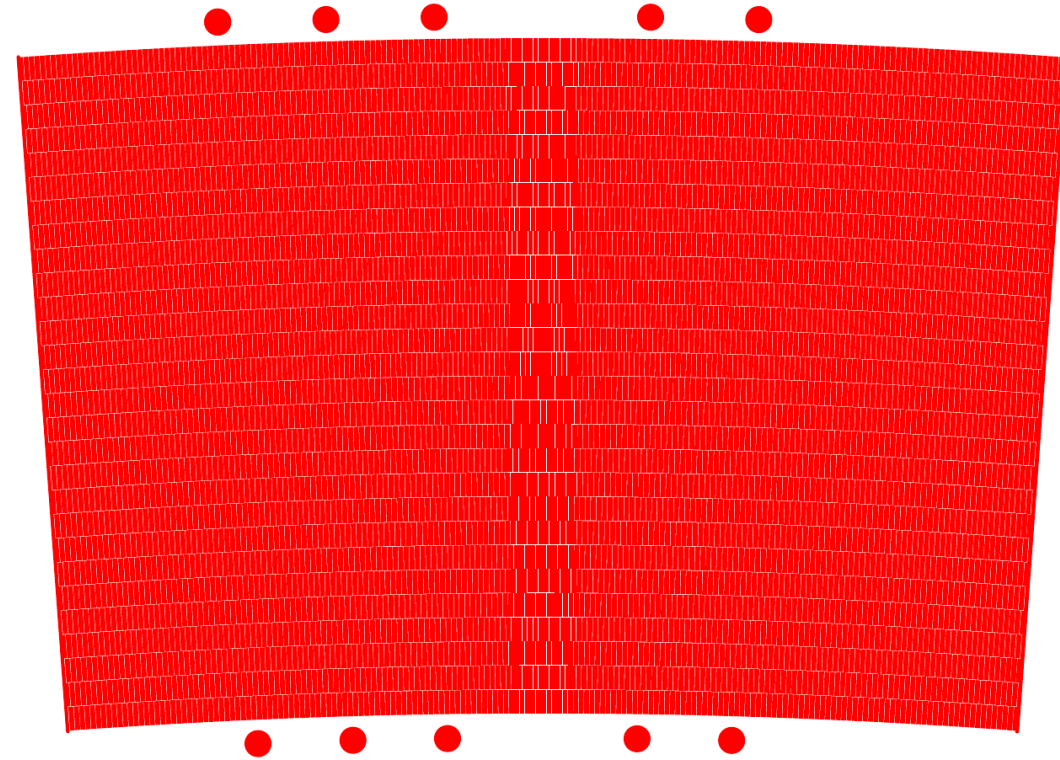
- $3 * 7 \text{ mm}^2$ large pads, 24 row with 72 pads $\rightarrow 1728$ pads per module
- Grounding at border, 3 mm frames
- 1 HV contact in the center

Common pad plane(II)



DESY modules:

$1.26 \times 5.85 \text{mm}^2$ pads - staggered
28 pad rows, 4829 channels per module
Thin frames – 1mm all around
20 HV connectors at top



Asian module:

$1.2 \times 5.4 \text{mm}^2$ pads - staggered
28 pad rows (176-192 pads/row)
5152 pads per module
1 cm wide frames at top/bottom
No frames at sides