

Status of J-GEM modules

Asian GEM module group

4 modules had arrived DESY @Mar.11

HV local test

exercise of module mount at EP2

Gate transmission measurement

w/o w/ B field

module installation to EP1

HV test

Cabling

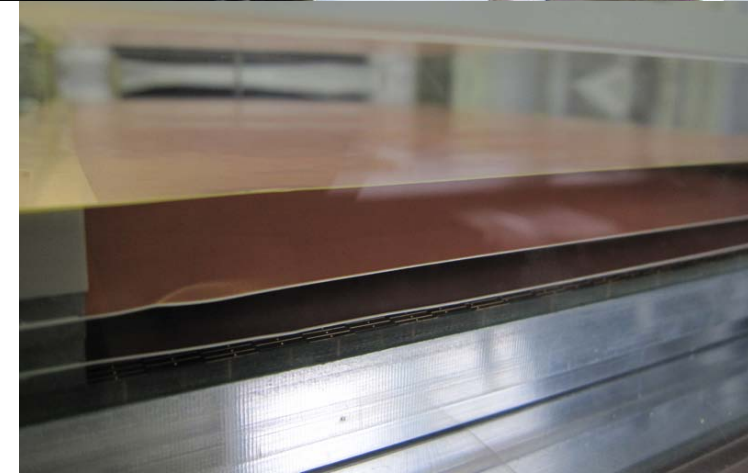
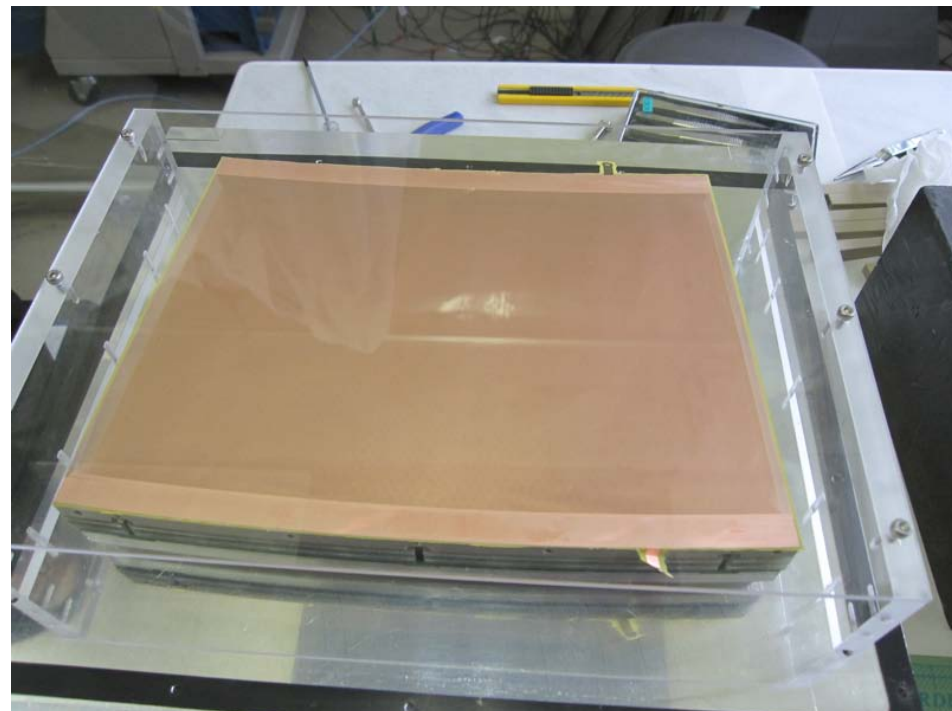
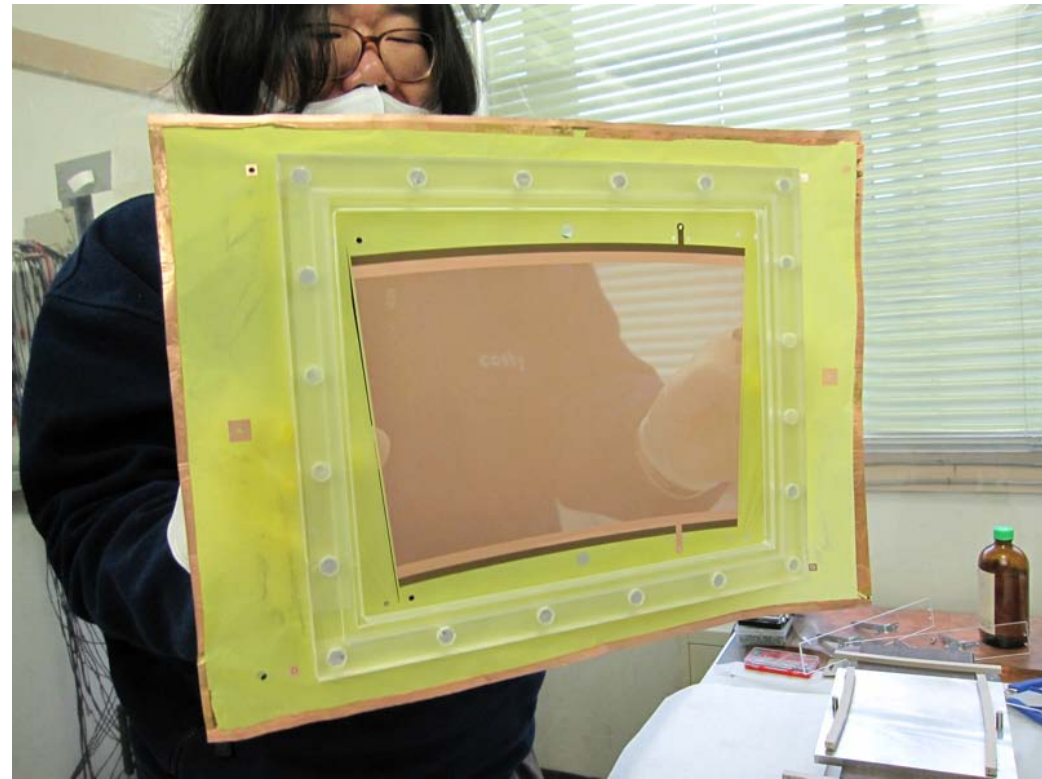
What's new ?

Gate GEM

geom. structure is same as
we tested before

hole pitch 140um/ 90um ϕ

14um thick \rightarrow 12 um thick

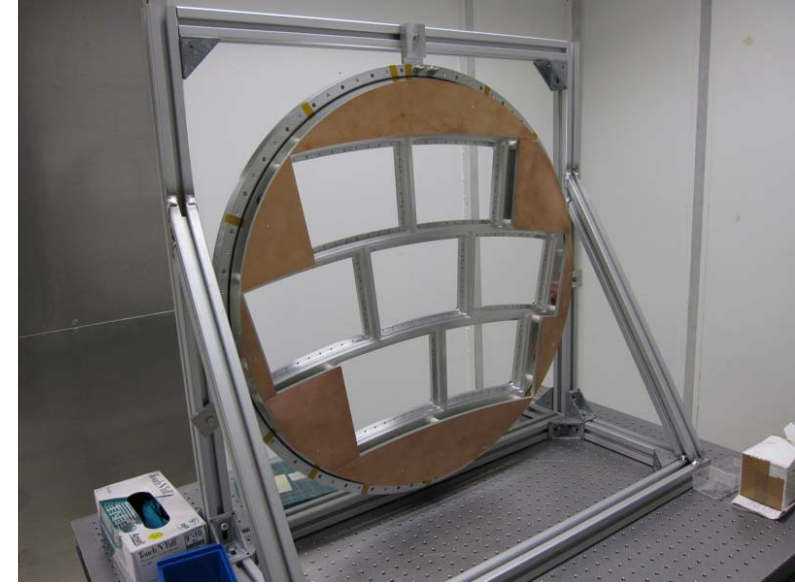


minor wrinkle

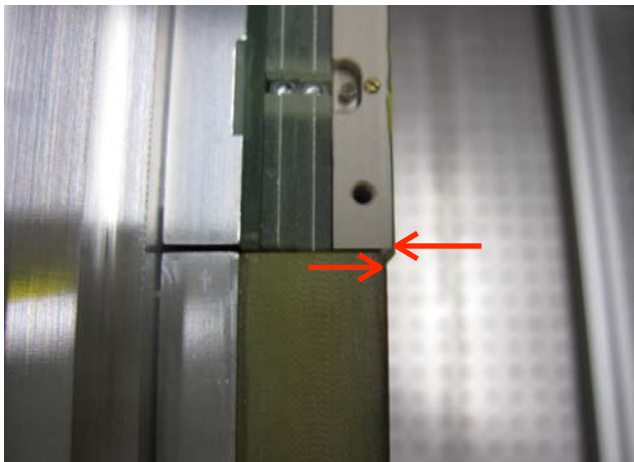
but almost flat

We don't see any insulator on the surface

Module installation test with EP2

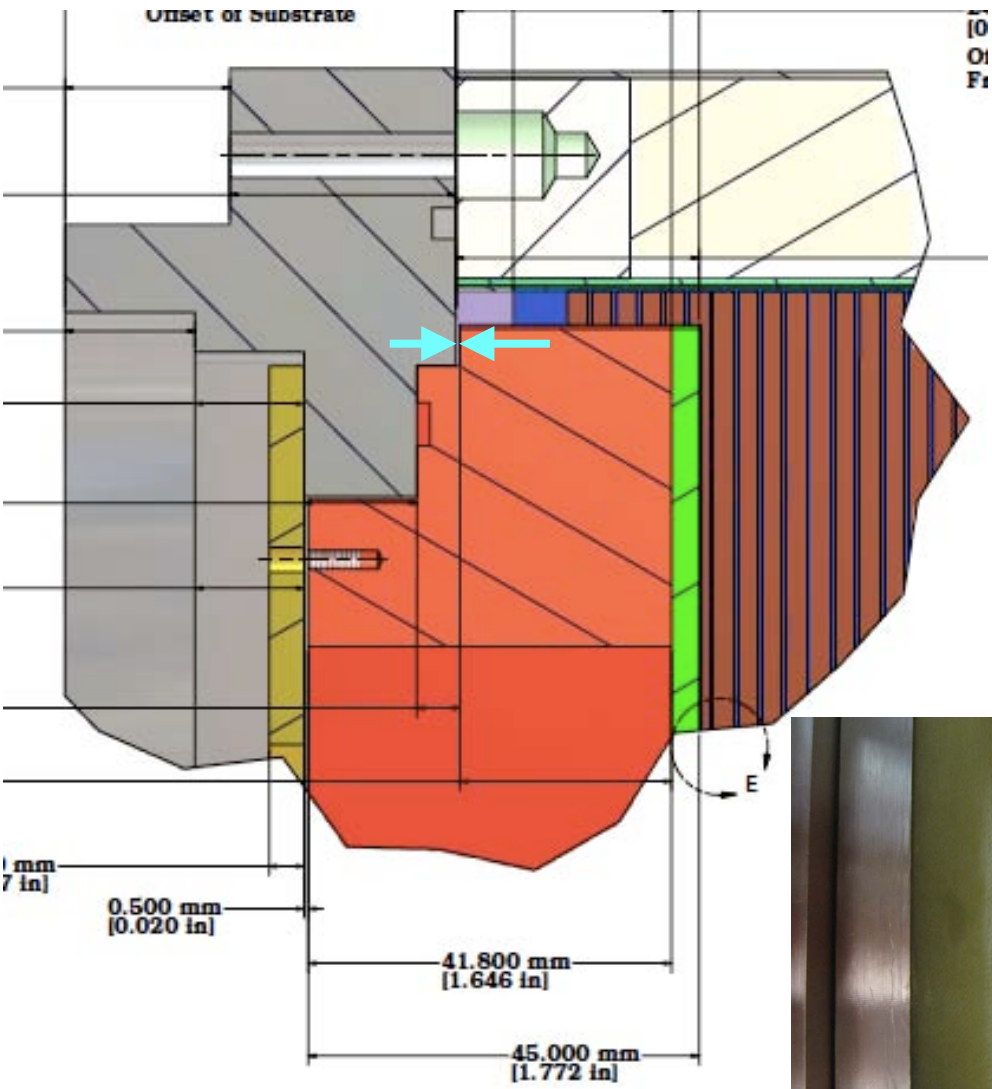


EP2 is ready at West Hall



But
there is 1mm gap between the
surface of dummy module

We might forget to count gap between EP surface and module edge (500um)



Our module has

PCB	2.5mm
GEM+frame+glue	4.2mm x2
spacer frame gate	7.55mm
total	18.45mm (18.00)

After installation

gap seems to be same (~1mm)

but we realized it provide us leak !!

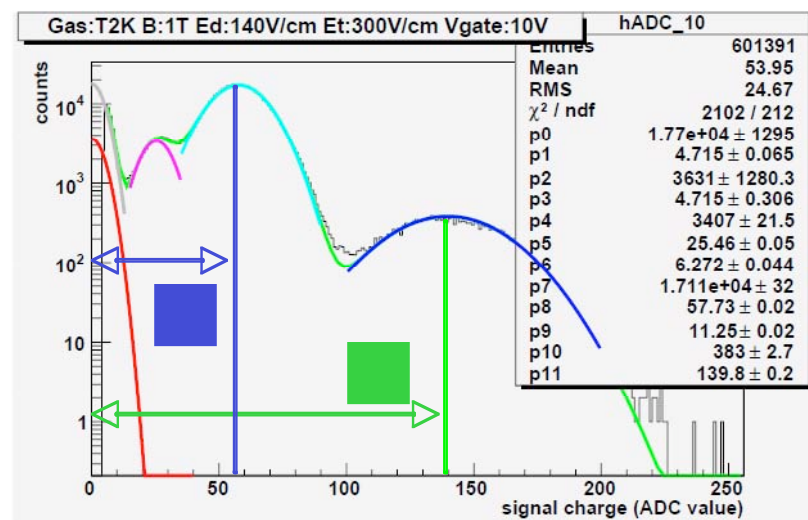
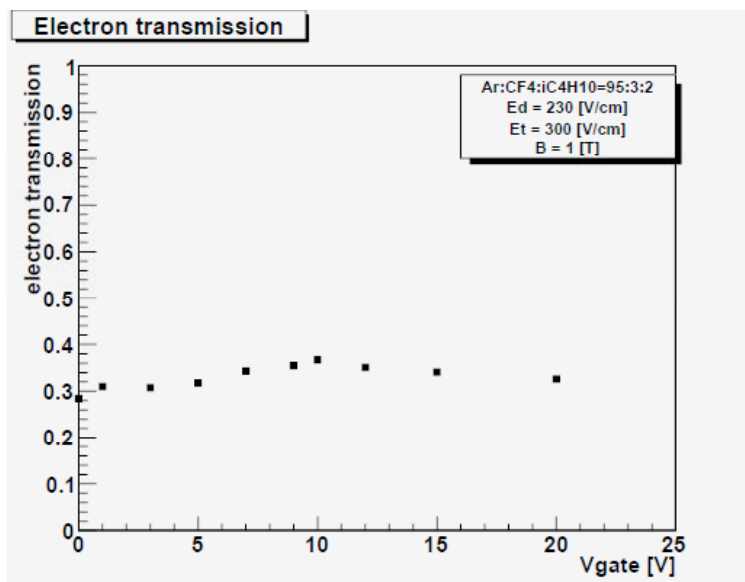
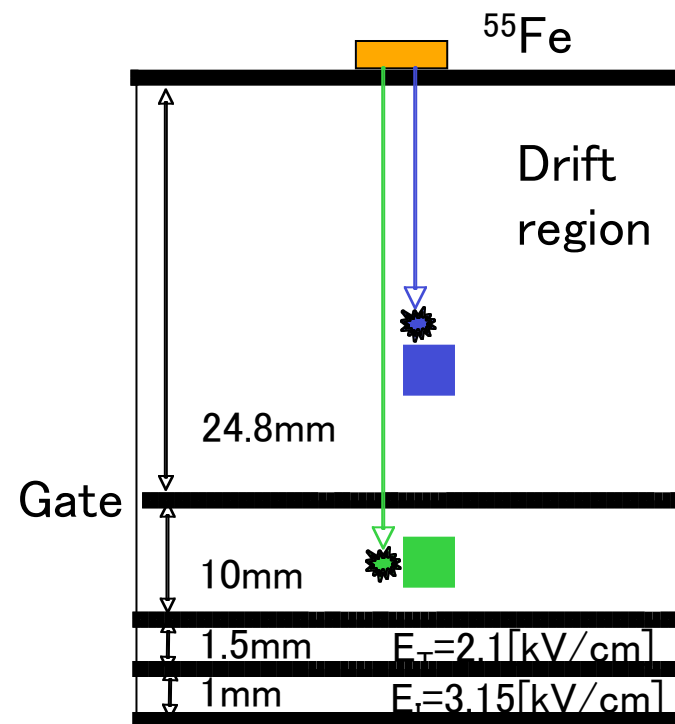
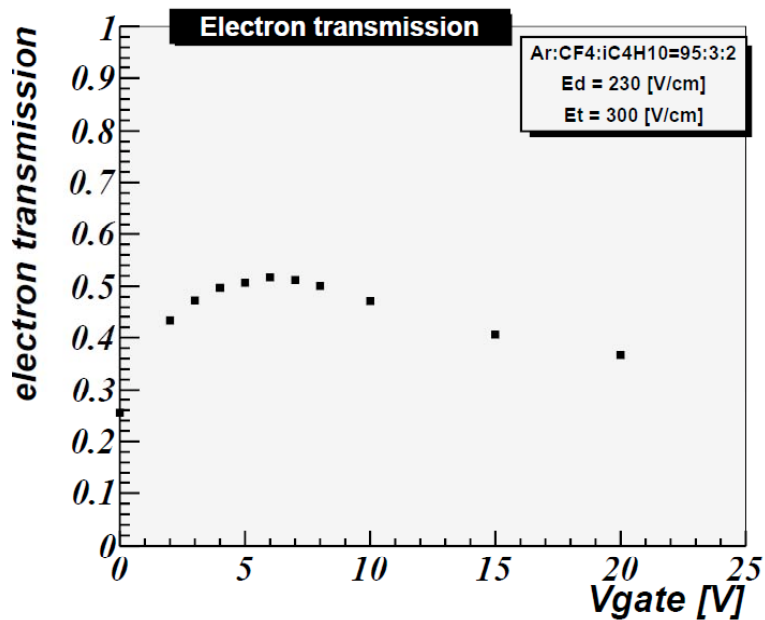
we tighten screw a lot next morning
to fix gas leak.

gap must be smaller than this
(500um is expected)



Gate test

We have measured Gate transmission of similar material



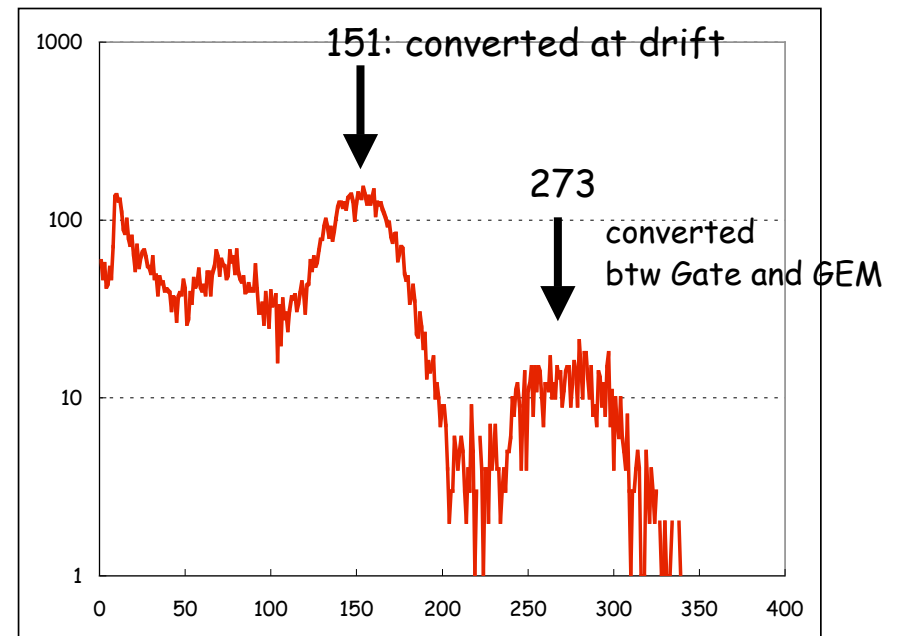
We measured the transmission of the gate in use @DESY

readout: 1 connector signals are connected together

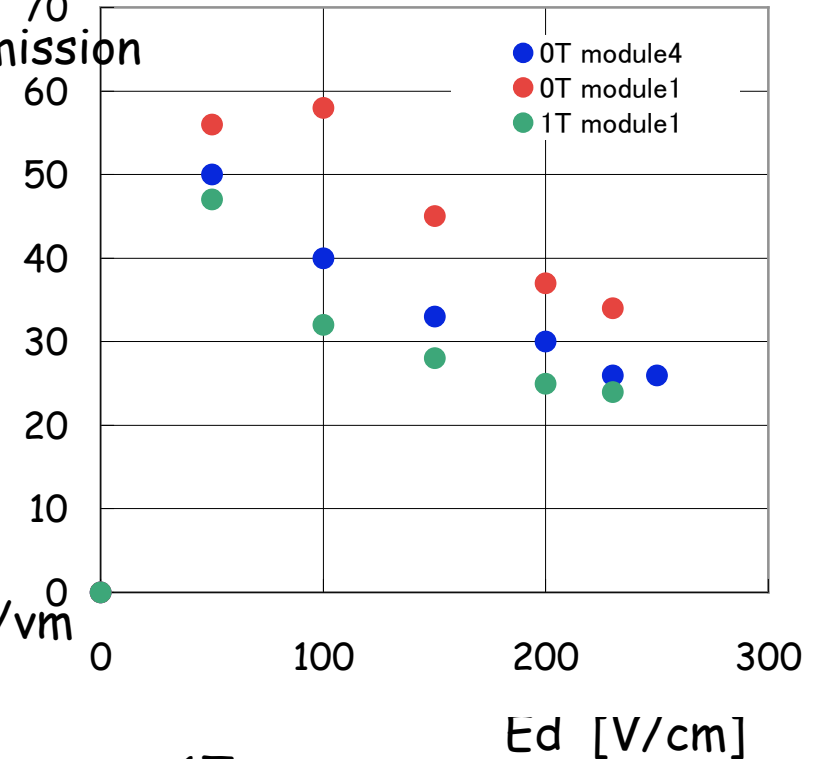
-> pre-post amp. + ORTEC shaper amp. -> PMCA

irradiate ^{55}Fe in/out the PCMAG

data is taken as a function of Drift Field (not V_{GATE})



Electron
transmission



Module 4 : VGEM 360 V
VGATE 4.5 V
Module 1 : VGEM 340 V
VGATE 4.25V

No consistency btw diff. modules

ex. B=0T 58%@m1 vs 40%@m4 @Ed 100V/vm

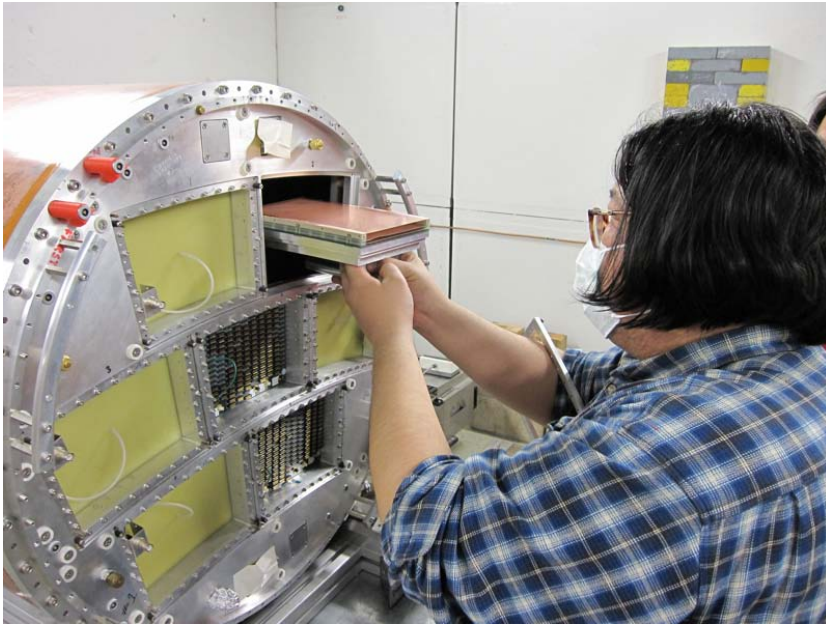
Trns. is somewhat lower than the previous measurement at 1T

24%@DESY vs. 33%@KEK ~50%@KEK-MPTPC track test

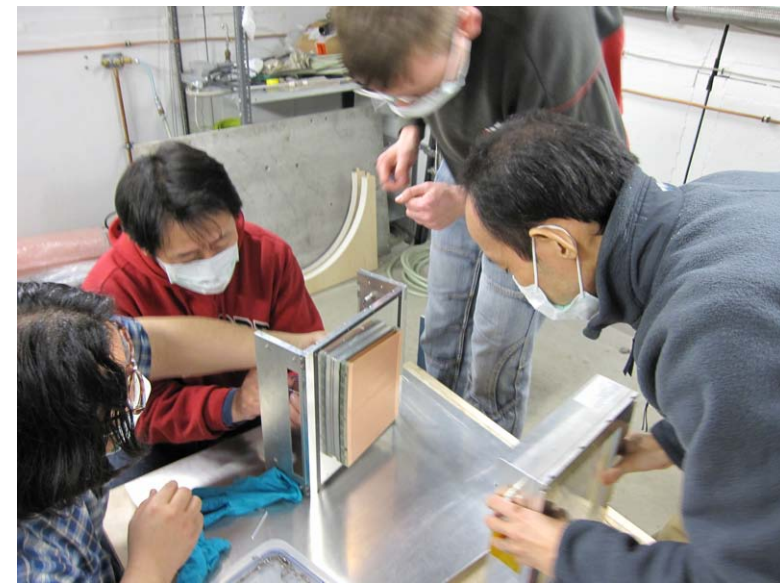
We don't know the reason of difference. just wait beam result coming soon

Where we are now

3 modules are installed into TPC (without replacing EP)



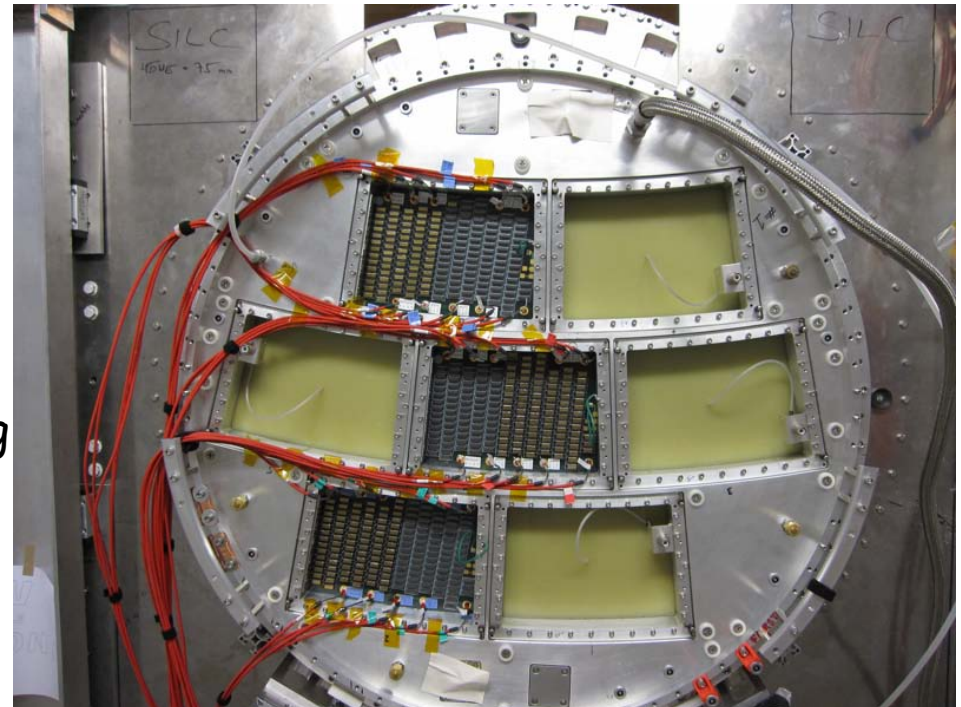
install it !



open the test box

HV cabling / HV test done

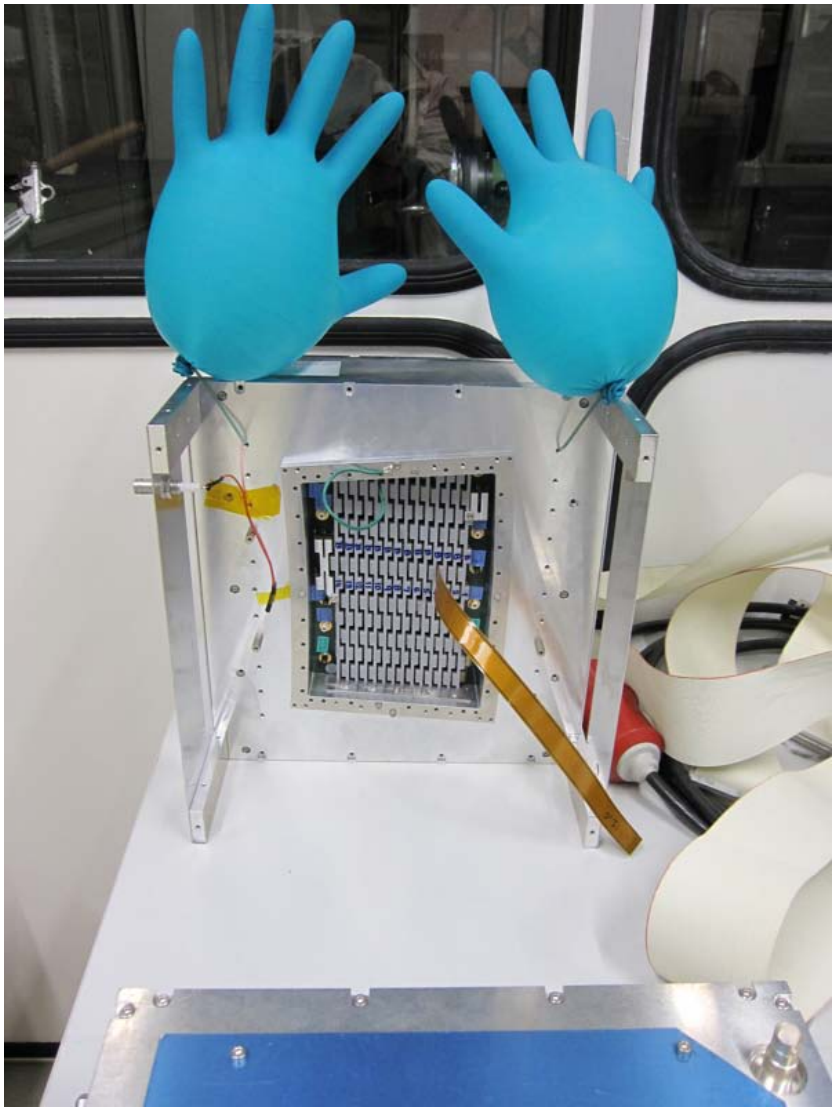
ready for signal cabling
@2010/03/17 evening



TPC is upside down for cabling

One tragic story

Module 3 is in "both hand up" state.
because.....



But we could apply HV !!
though we don't use this at the beamtest.

Beam test schedule

Mar. 18(Thu.)	signal cabling / FEC mount	
19(Fri.)	FEC mount / HV cabling PCMAG excitation ? / beam data ??	
20(Sat.)	beam data w/ ? w/o B	
21(Sun.)		
22(Mon.)	No beam moving table test under B field	Beam available for mid night~5AM
23(Tue.)	No beam	Beam available for mid night~5AM
24(Wed.)	No beam??	
25(Thu.)	many people leave for LCWS	
26(Fri.)		
27(Sat.)		
28(Sun.)		
29(Mon.)	Most japanese leave	

Beam schedule 2

check channel map

DAQ

beam position

B=1T

drift distance dep. 0. 5. 10. 15. 20. 25. 30. 35. 40. 45. 50. 55. 12 points
40k events / point -> 2 hours

B=0T

drift distance dep. 0. 5. 10. 15. 20. 25. 30. 35. 40. 45. 50. 55. 12 points
40k events / point -> 2 hours

B=0T $E_d = 100\text{V/cm}$

drift distance dep. 0. 5. 10. 15. 20. 25. 30. 35. 40. 45. 50. 55. 12 points
40k events / point -> 2 hours

theta phi ?

What next ? leave module ??