

## News about Mechanics

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DEPFET

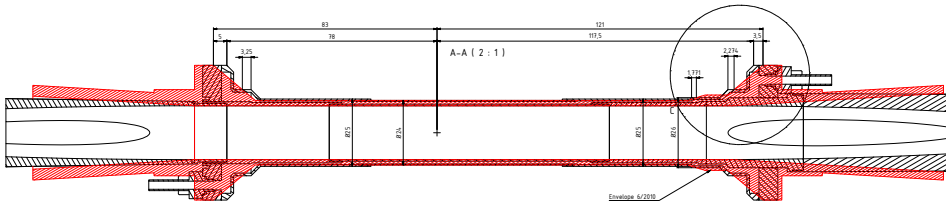


New beampipe design  
New cable requirements  
End of Stave Layout

# New beampipe design

New beampipe design since last B2GM:

- ▶ short beryllium part: only covering acceptance
- ▶ makes beryllium part much easier and cheaper



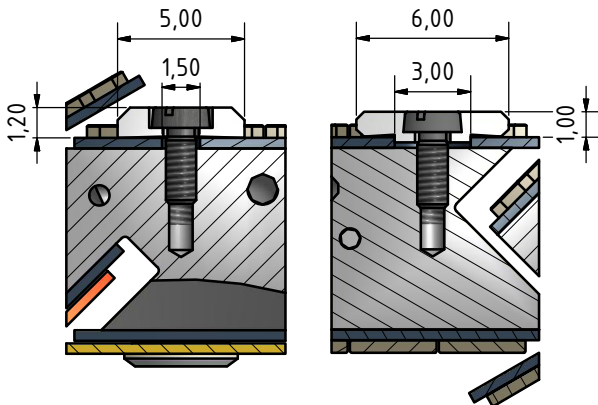
**but:** outer diameter of beampipe increases in forward backward region

- ➔ low clearance between modules and beampipe, especially concerning screws

# Thinner screwing solution

Necessary to decrease thickness of screws

➔ by increasing diameter of hole, its possible to create shallower version

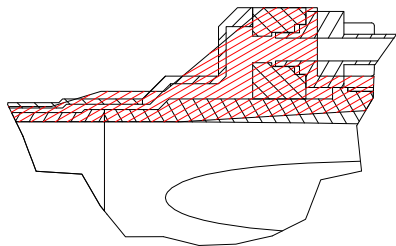


➔ also reduces available space on end of stave

# New cable requirements

End of last year, it became clear 6.5 mm kapton cable will not be sufficient.

- ➔ Decision to go to 10 mm kapton flex
  - ▶ we have to find room for 54% wider kapton cables
- ➔ still work in progress

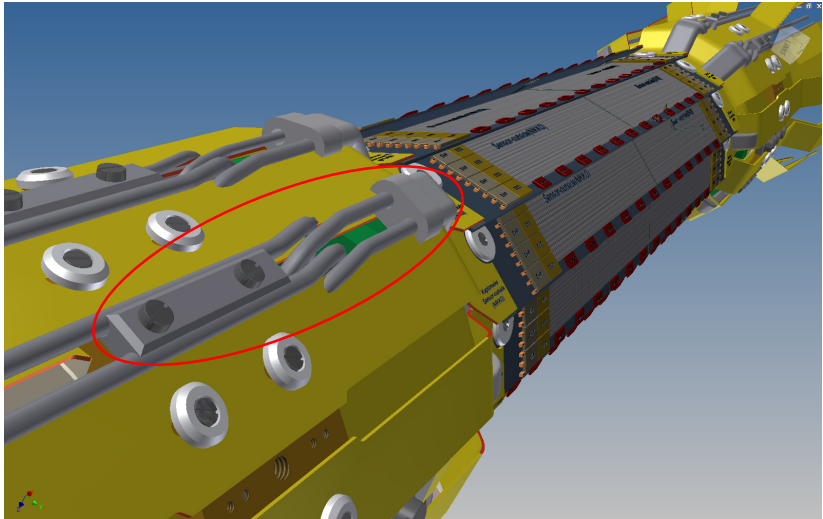


## Current Challenges

With new beampipe and new cables:

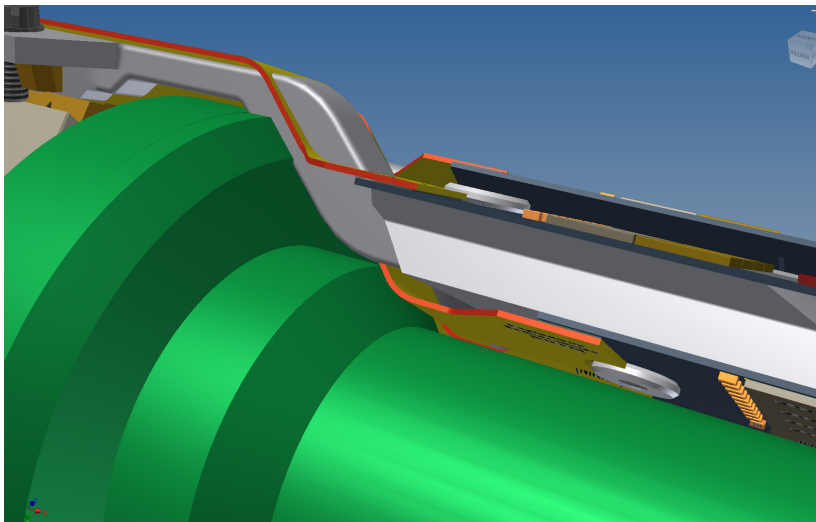
- ▶ overlaps between cable and support/cooling
- ▶ very small clearance between cables close to modules (0.14 mm)
- ▶ new beampipe design does not honour the agreed envelope everywhere
  - ➔ rerouting and shifting of cables and support necessary

# Current Challenges



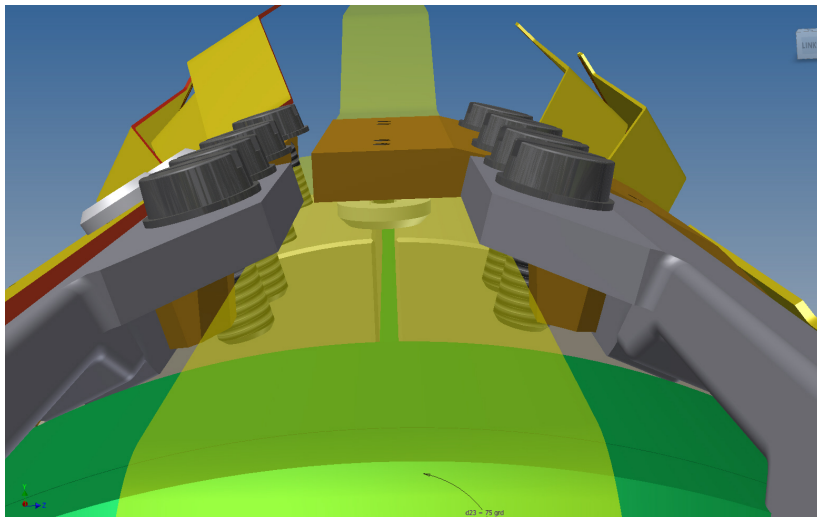
➔ necessary to increase diameter of support ring

# Current Challenges



➔ change kapton bending, redesign support ( half the thickness, 1/4 of stability )

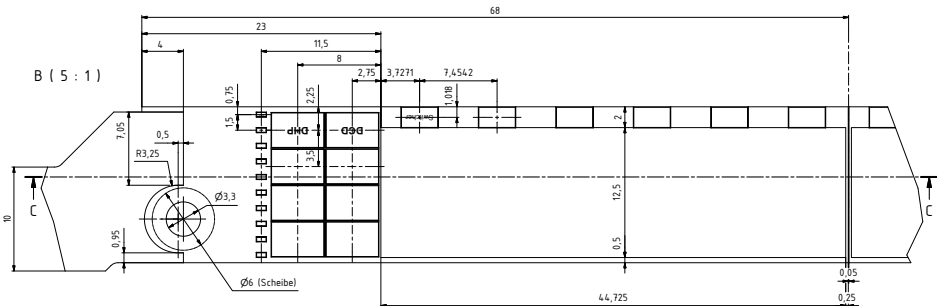
# Current Challenges



➡ broader kapton cuts into material used to attach pxd to beampipe

# End of Stave Layout

Currently we placed the chips arbitrary

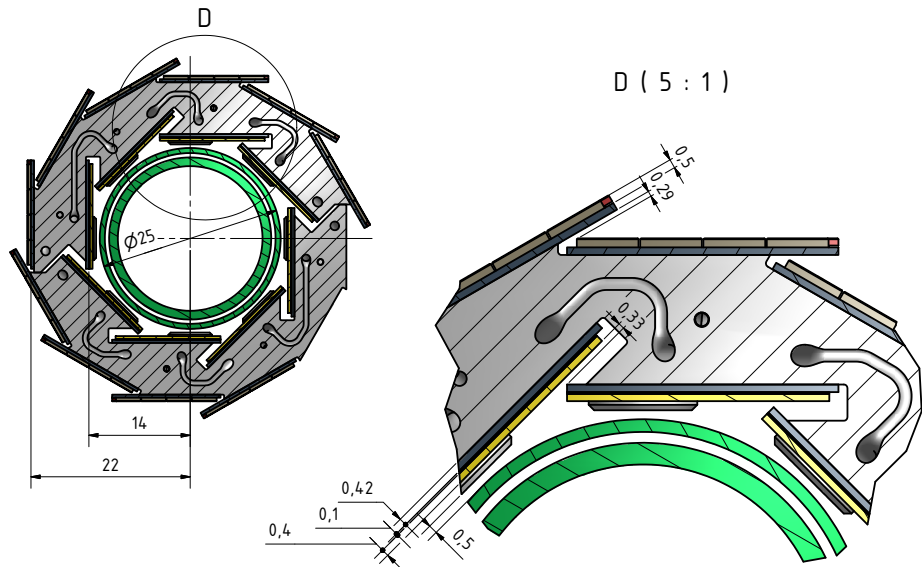


➡ we would like to have a more realistic description of the EoS also in mechanics layout:

- ▶ Are our assumptions for the chip dimensions still valid?
- ▶ What are the minimum required distances between chips?
- ▶ What is the maximum height including bumping and tolerances?

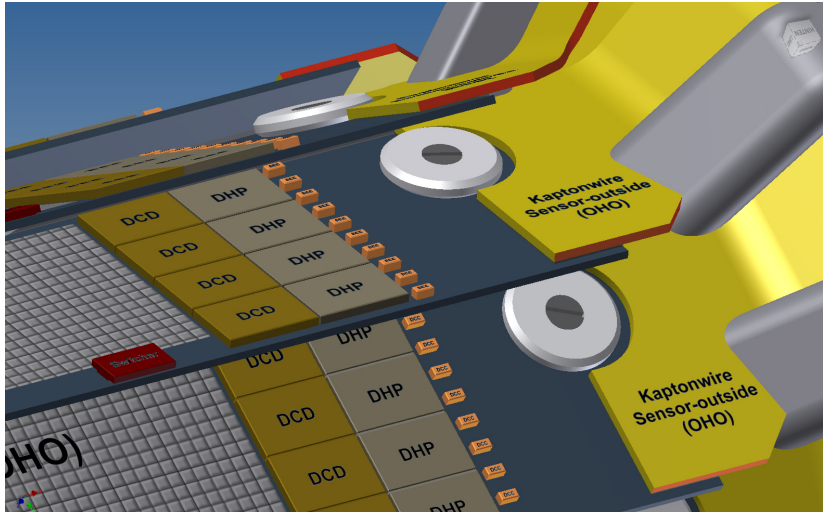


## End of Stave Layout: Clearance



# Assembly problem?

Kapton now on both sides of screw



➡ will there be a protection for the wire bonds during assembly?

# Conclusions

Received actual beampipe design from KEK

- ▶ minor issues, most will be solved soon
- ▶ if the current design is kept, we have to redesign the support, losing stability in the process

Redesign with 10 mm kapton cable underway

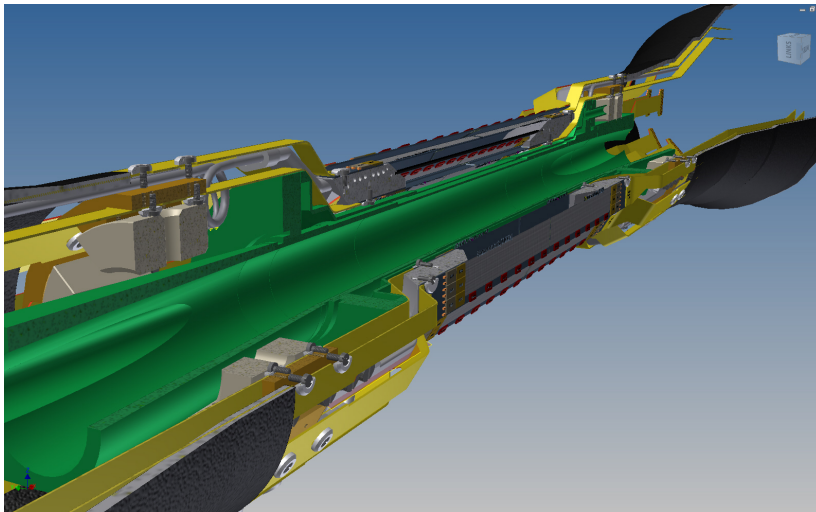
- ▶ lot of work to be done
- ▶ diameter of support ring will have to be increased
- ▶ seems to be feasible

Low clearance for end of stave design: please check sizes we assume for the chips and give us feedback so that we can make sure everything will fit (mechanically)



Thank you  
for your attention

# SVD Shield collisions



➔ Not clear where to put cables now, confusing information from Japan and Vienna

# SVD Shield collisions

