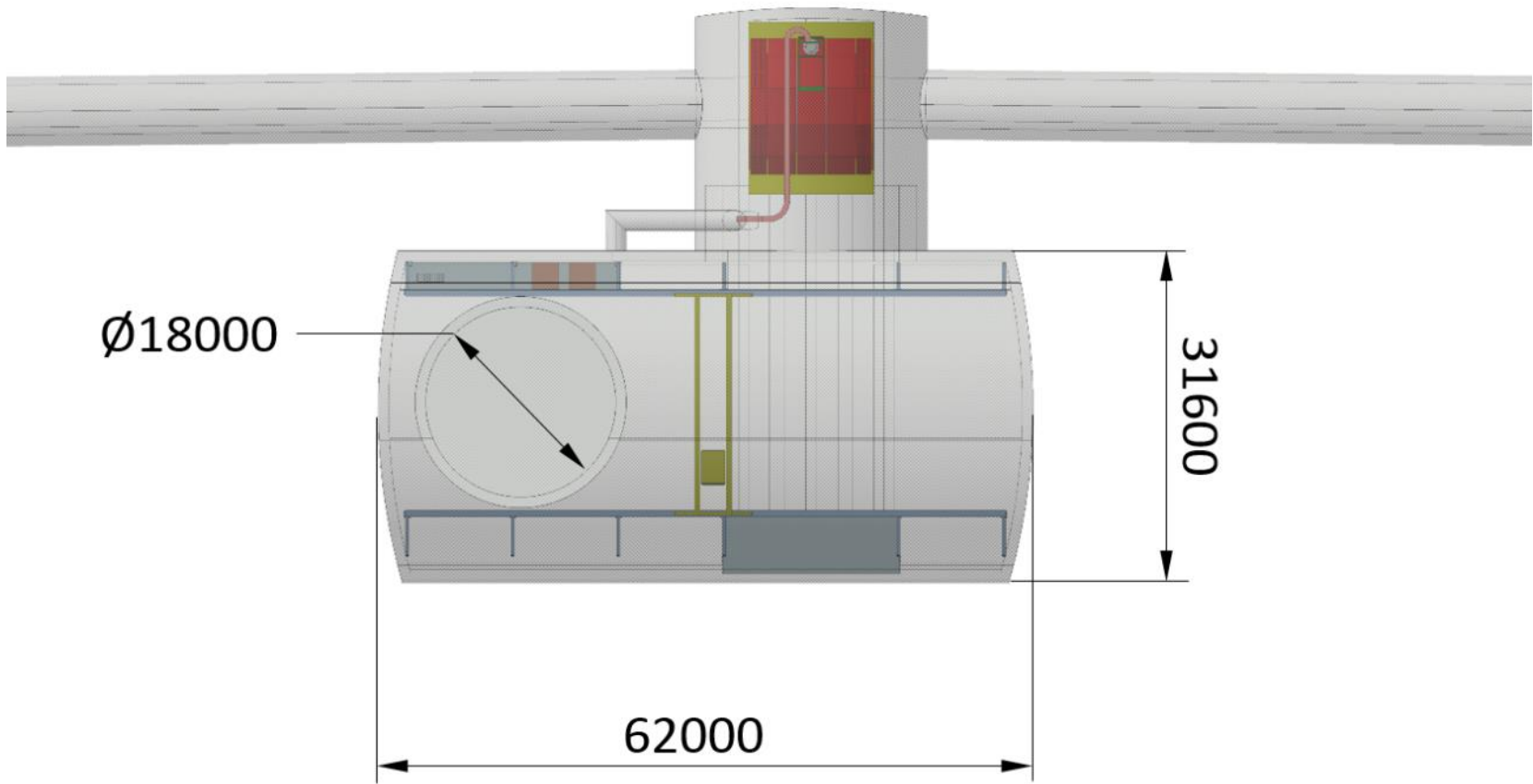


# Update on the new detector model

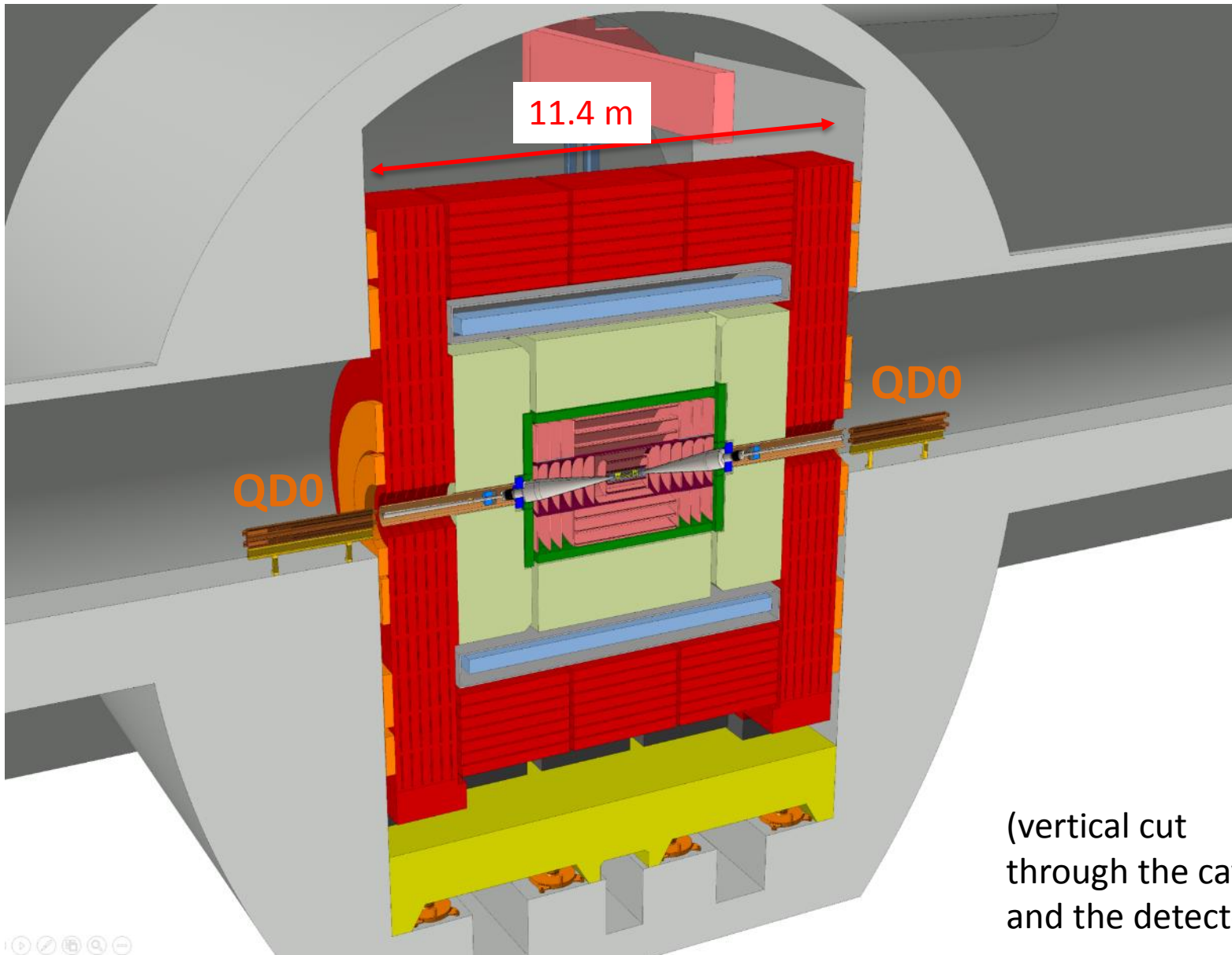
# CLICdet

CLICdp-Note-2017-001

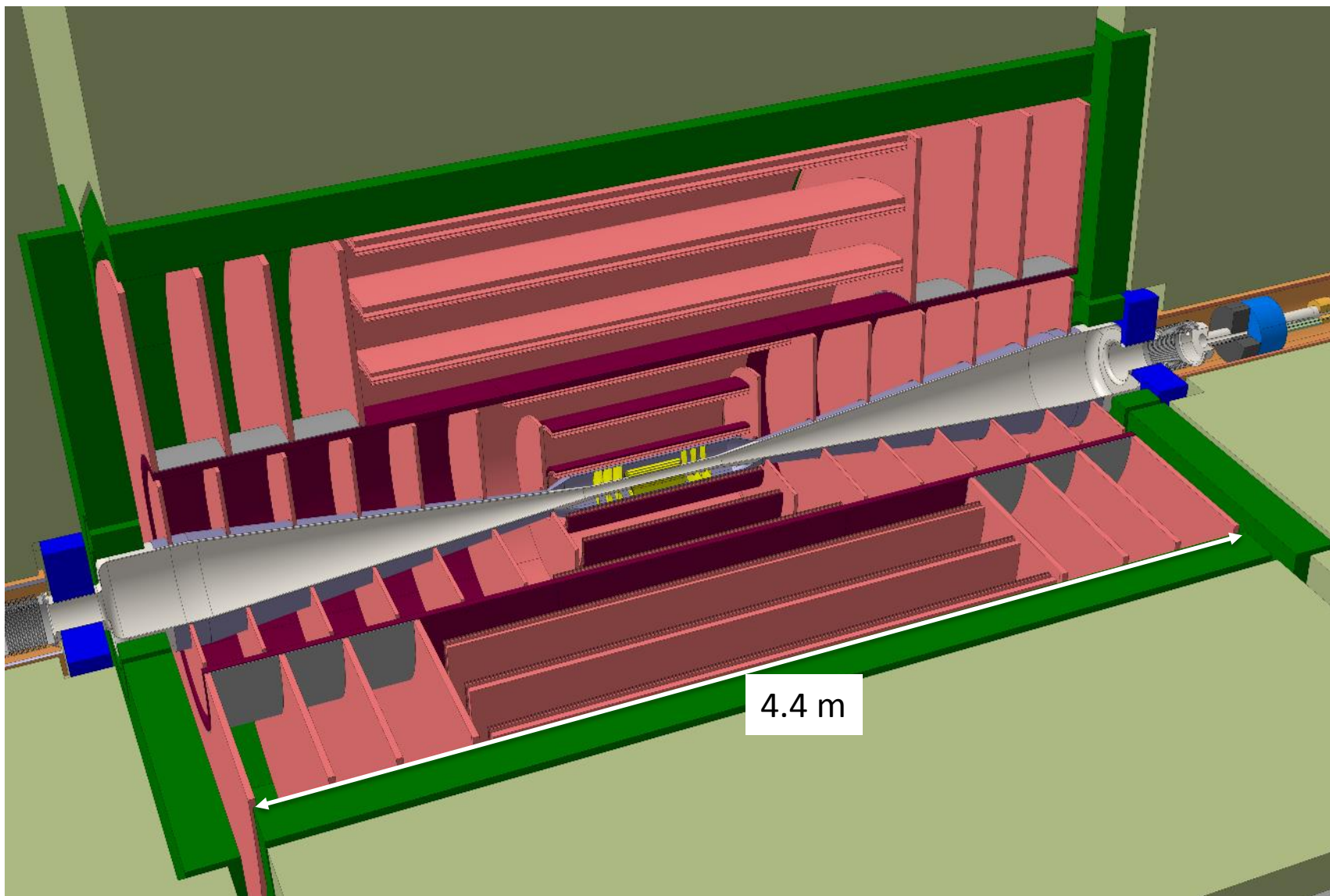
(Top View of Expt. Area – dimensions in [mm])



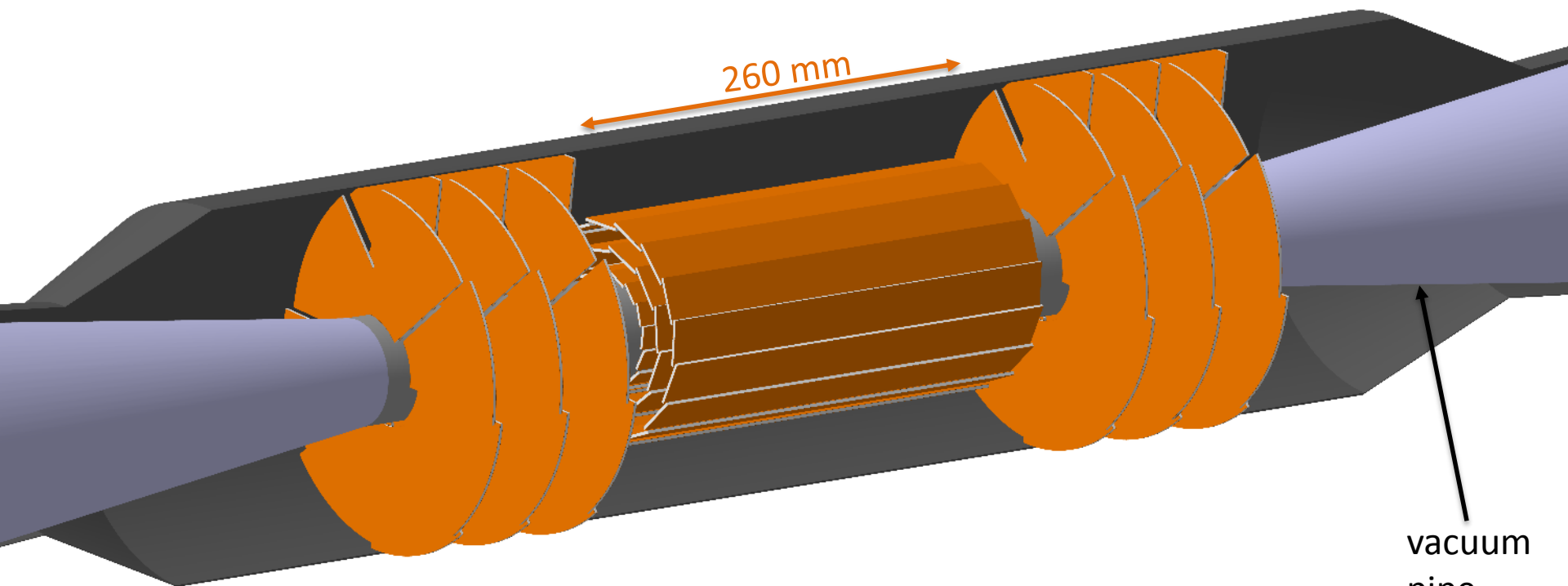
# Working Hypothesis: QD0 outside of detector



# zoom into the ECAL/tracker/vertex region



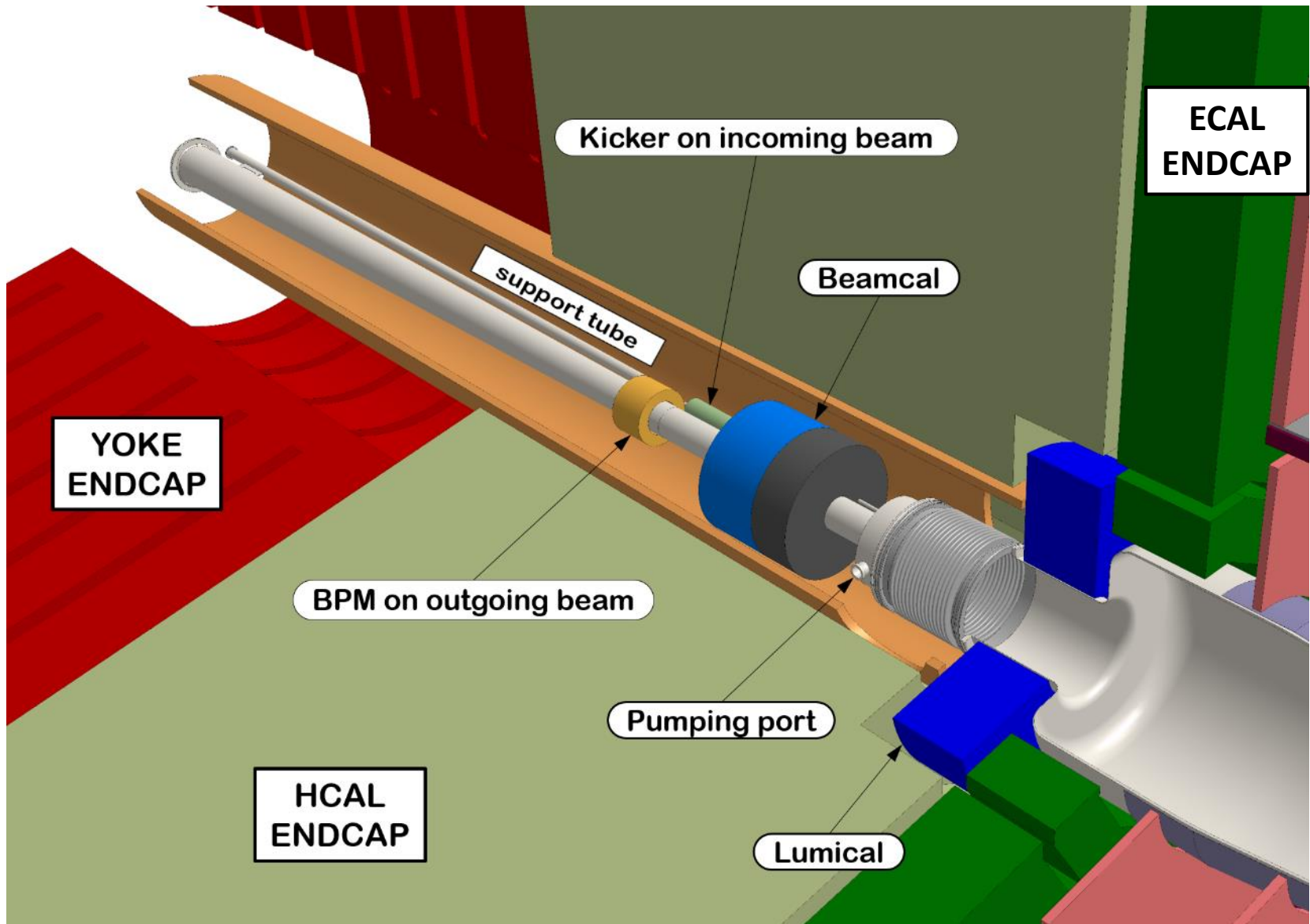
# a “better sketch” of the vertex detector



carbon fibre shell  
to guide the air for  
cooling of the VTX

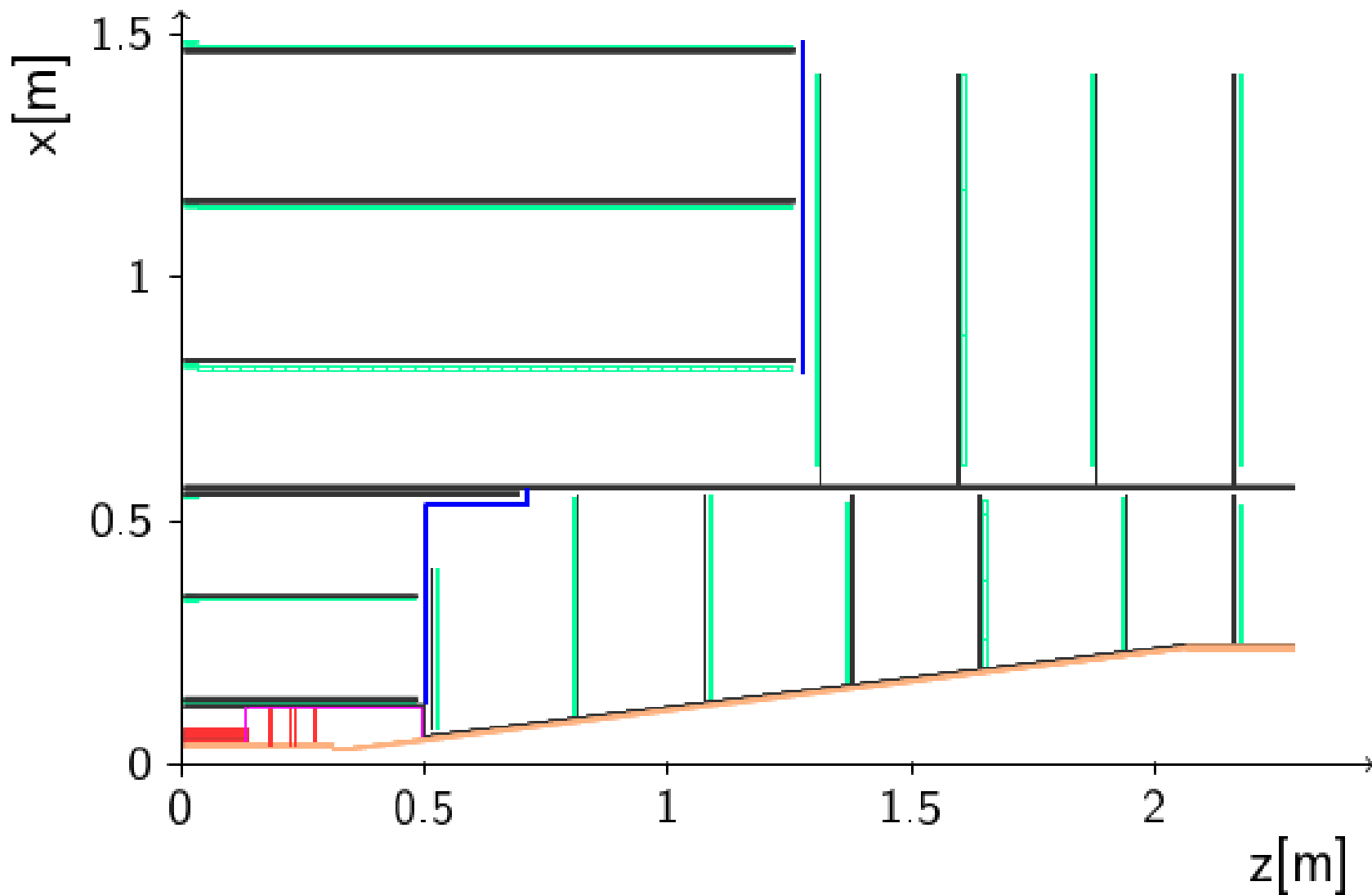
vacuum  
pipe

# layout of the forward region in CLICdet



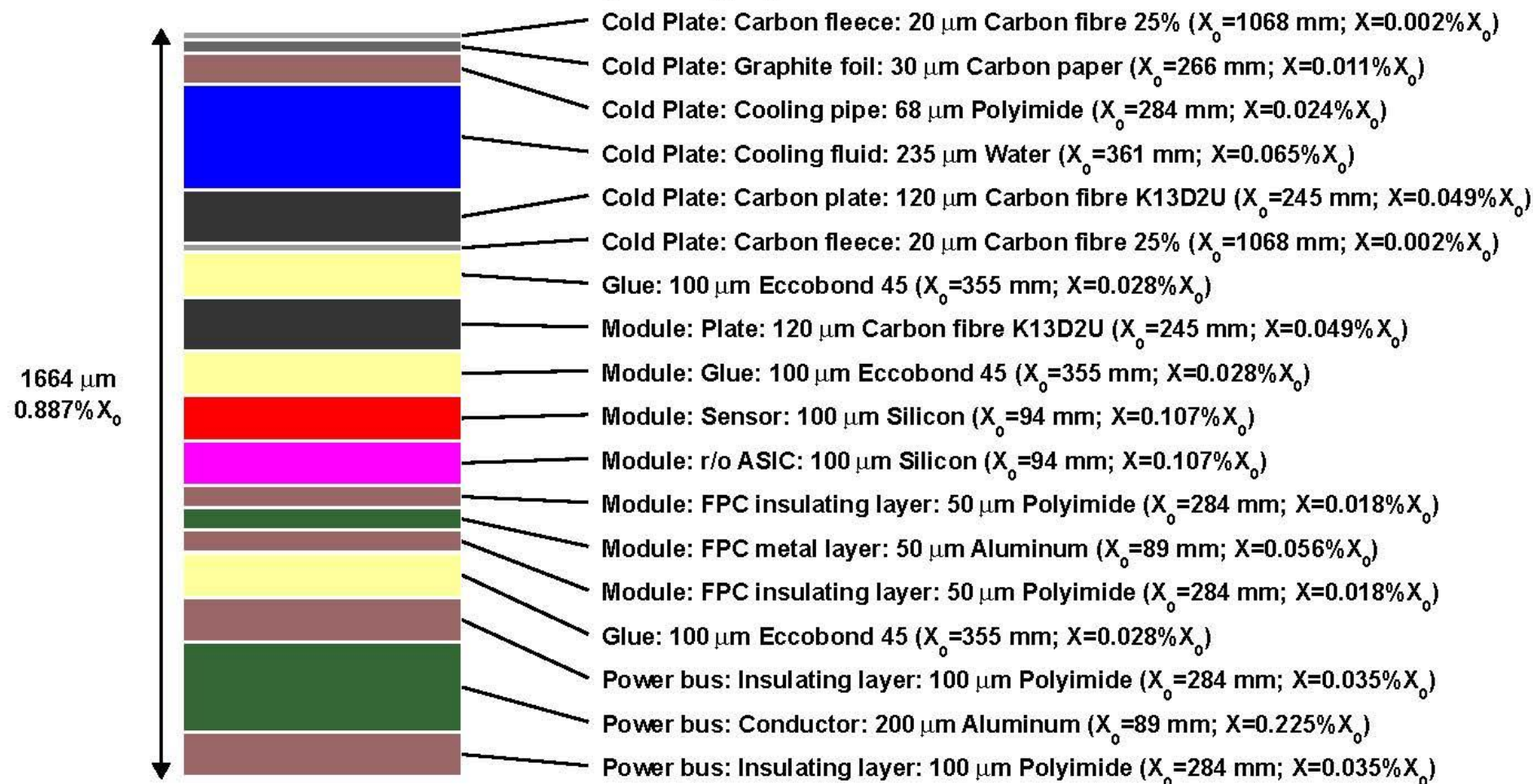
# latest developments: tracker / layout

(simulation model)



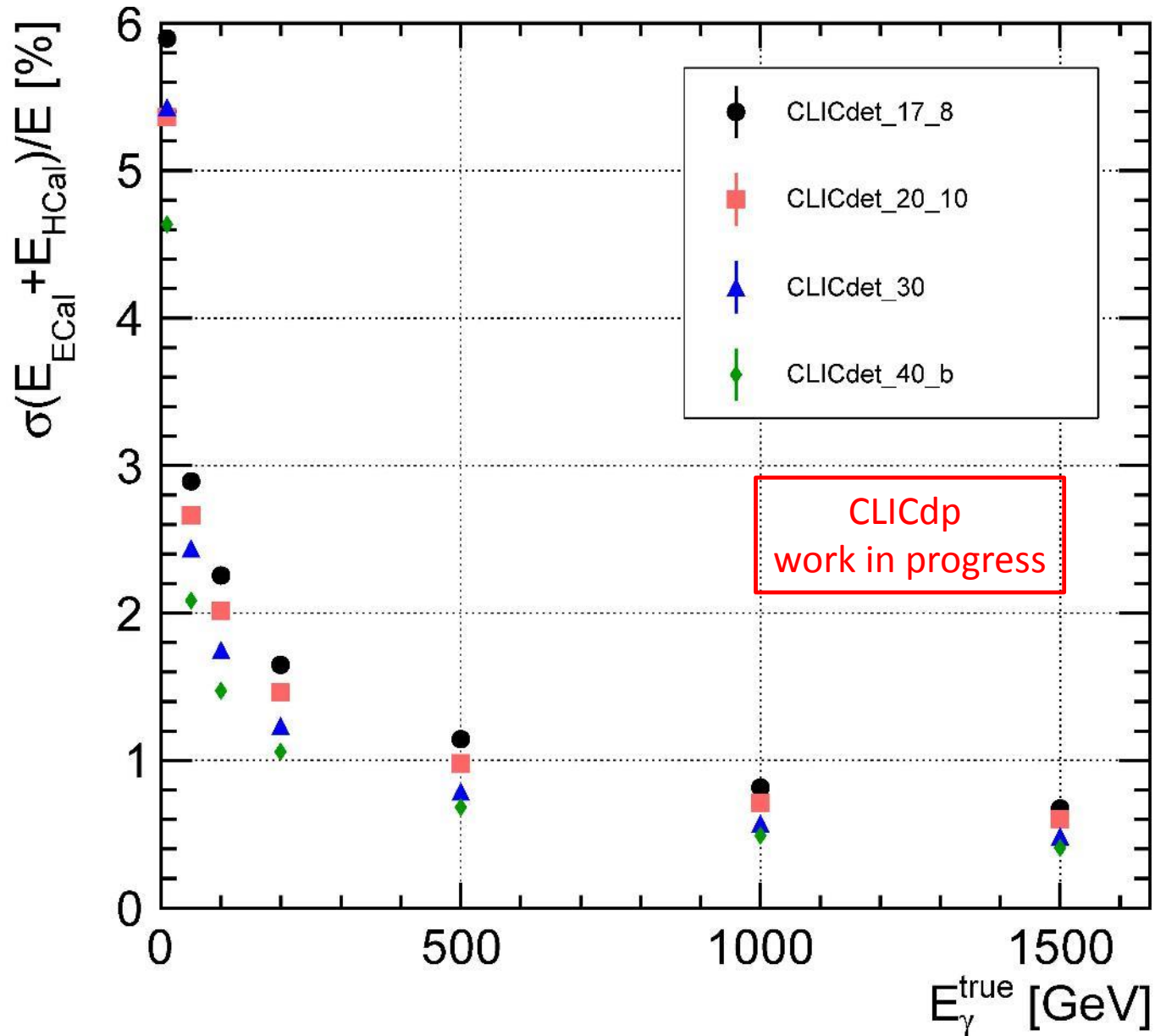
## example:

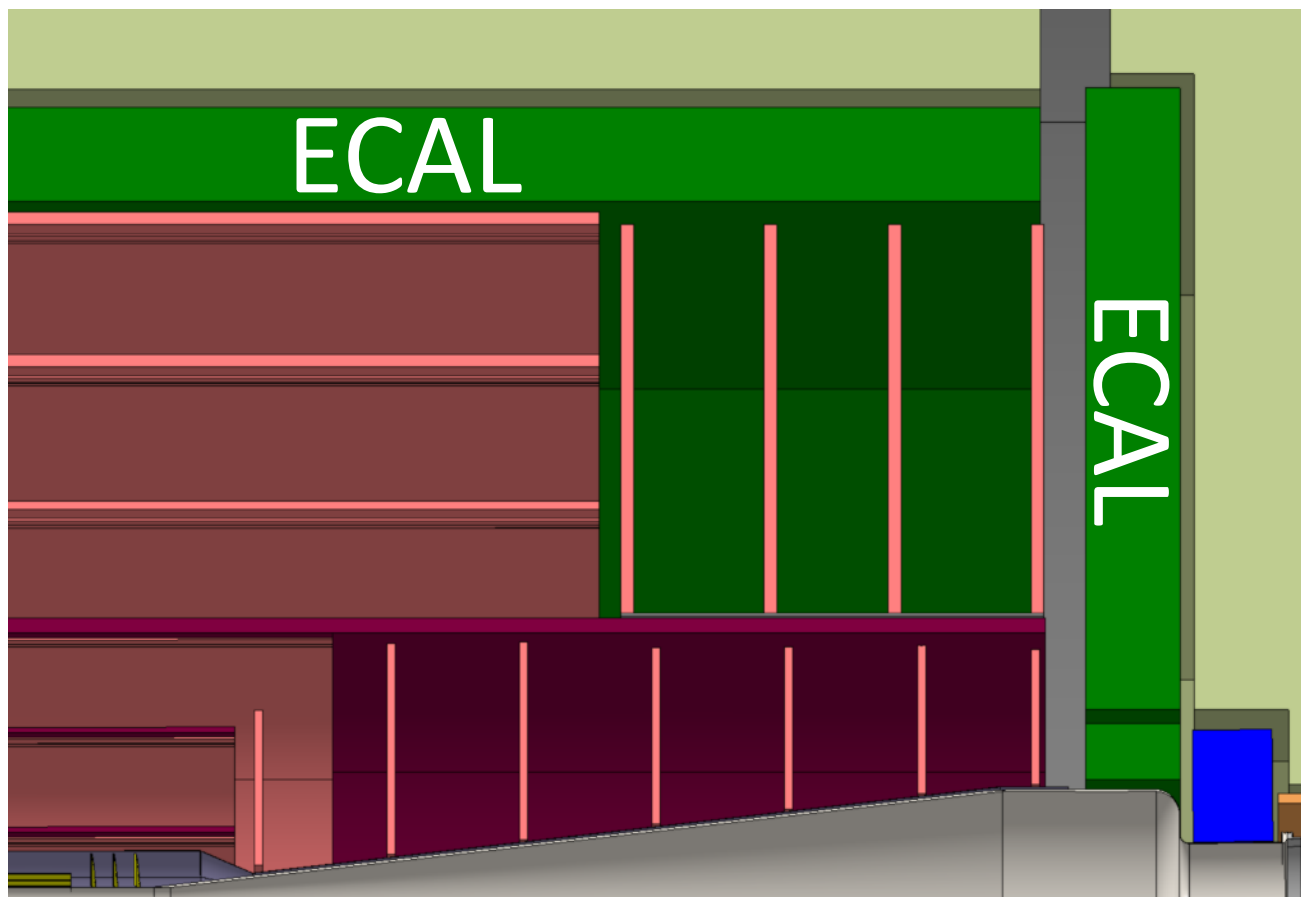
### Inner Tracker Barrel module engineering layout





# latest developments: ECAL layout





CLICdet ECAL:

Silicon-Tungsten

40 layers

$22 X_0$

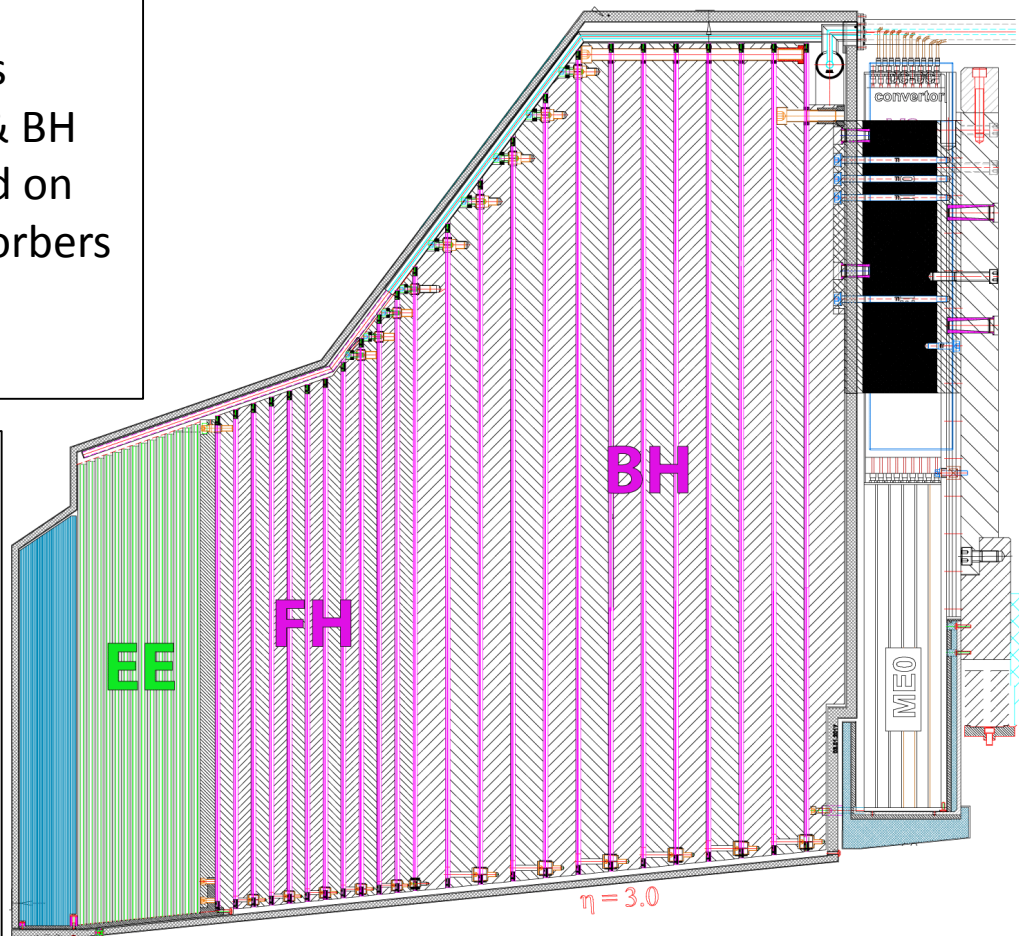
N.B.: maybe this is not the ECAL we would build

## Active Elements:

- Hexagonal modules based on Si sensors in EE and high-radiation regions of FH & BH
- “Cassettes”: multiple modules mounted on cooling plates with electronics and absorbers
- Scintillating tiles with SiPM readout in low-radiation regions of FH & BH

## Key Parameters:

- HGICAL covers  $1.5 < \eta < 3.0$
- Full system maintained at  $-30^{\circ}\text{C}$
- $\sim 600\text{m}^2$  of silicon sensors
- $\sim 500\text{m}^2$  of scintillators
- 6M si channels,  $0.5$  or  $1\text{ cm}^2$  cell size
- $\sim 22000$  si modules
- Power at end of HL-LHC:  $\sim 60\text{ kW}$  per endcap



**Endcap Electromagnetic calorimeter (EE):** Si, Cu & CuW & Pb absorbers, 28 layers,  $25 X_0$  &  $\sim 1.3\lambda$

**Front Hadronic calorimeter (FH):** Si & scintillator, steel absorbers, 12 layers,  $\sim 3.5\lambda$

**Backing Hadronic calorimeter (BH):** Si & scintillator, steel absorbers, 12 layers,  $\sim 5\lambda$

the description of CLICdet (**CLICdp-Note-2017-001**):

<https://edms.cern.ch/document/1572676/>

images/figures used in the CLICdp note:

<https://edms.cern.ch/document/1739086/>

a more technical drawing with dimensions:

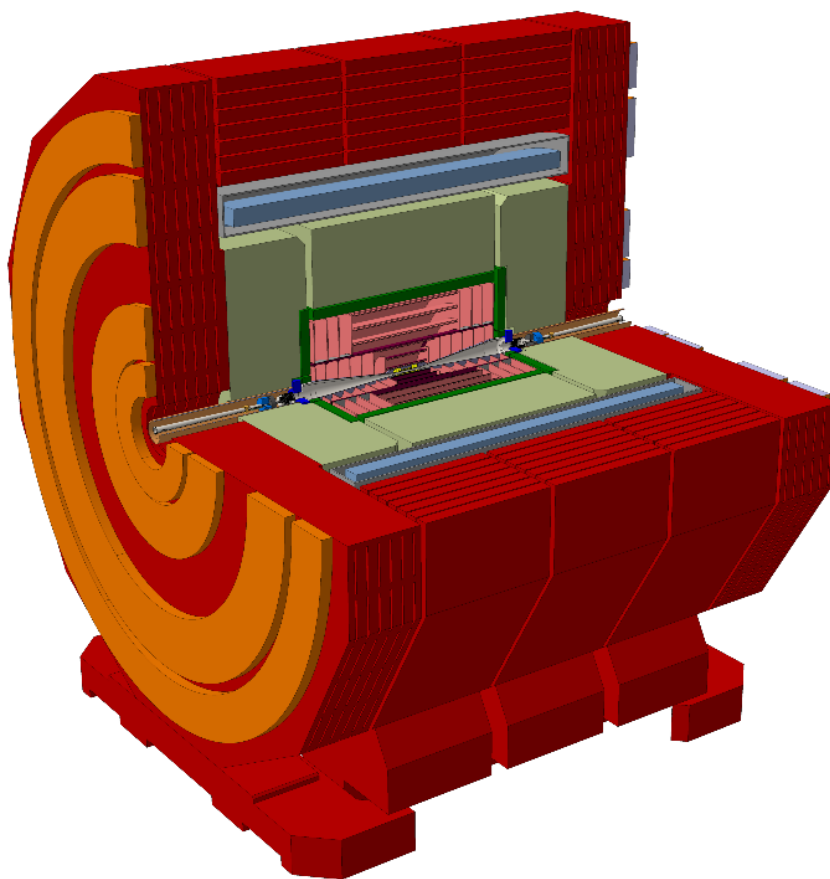
[https://edms.cern.ch/ui/file/1543126/6/CLICdet\\_main\\_parameters\\_Nov\\_2016.pdf](https://edms.cern.ch/ui/file/1543126/6/CLICdet_main_parameters_Nov_2016.pdf)

additional images/figures on CLICdet:

<https://edms.cern.ch/document/1543126/>

(click on “Last modified date” to get the latest version on top)

# THANK YOU



- all the co-authors of CLICdp-Note-2017-001
- the CLICdp PubCom
- the “official readers”:
  - Claude Vallée
  - Andreas Nürnberg