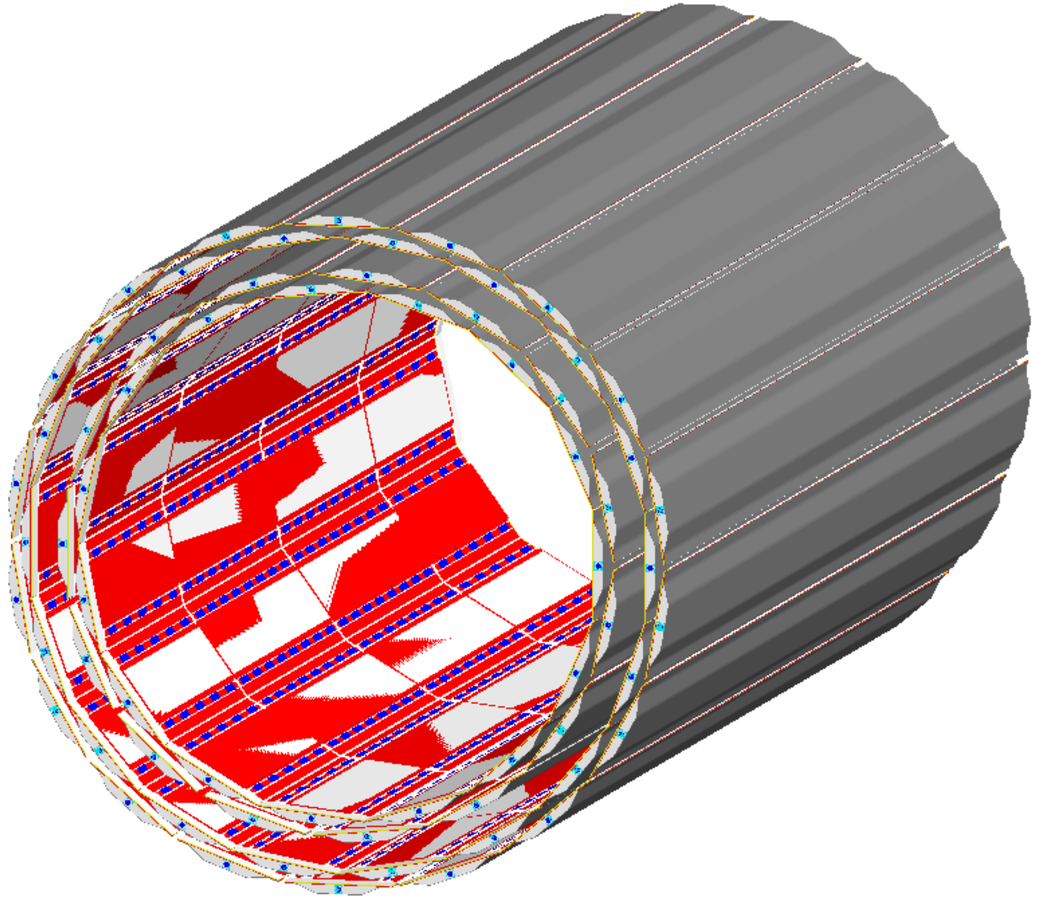
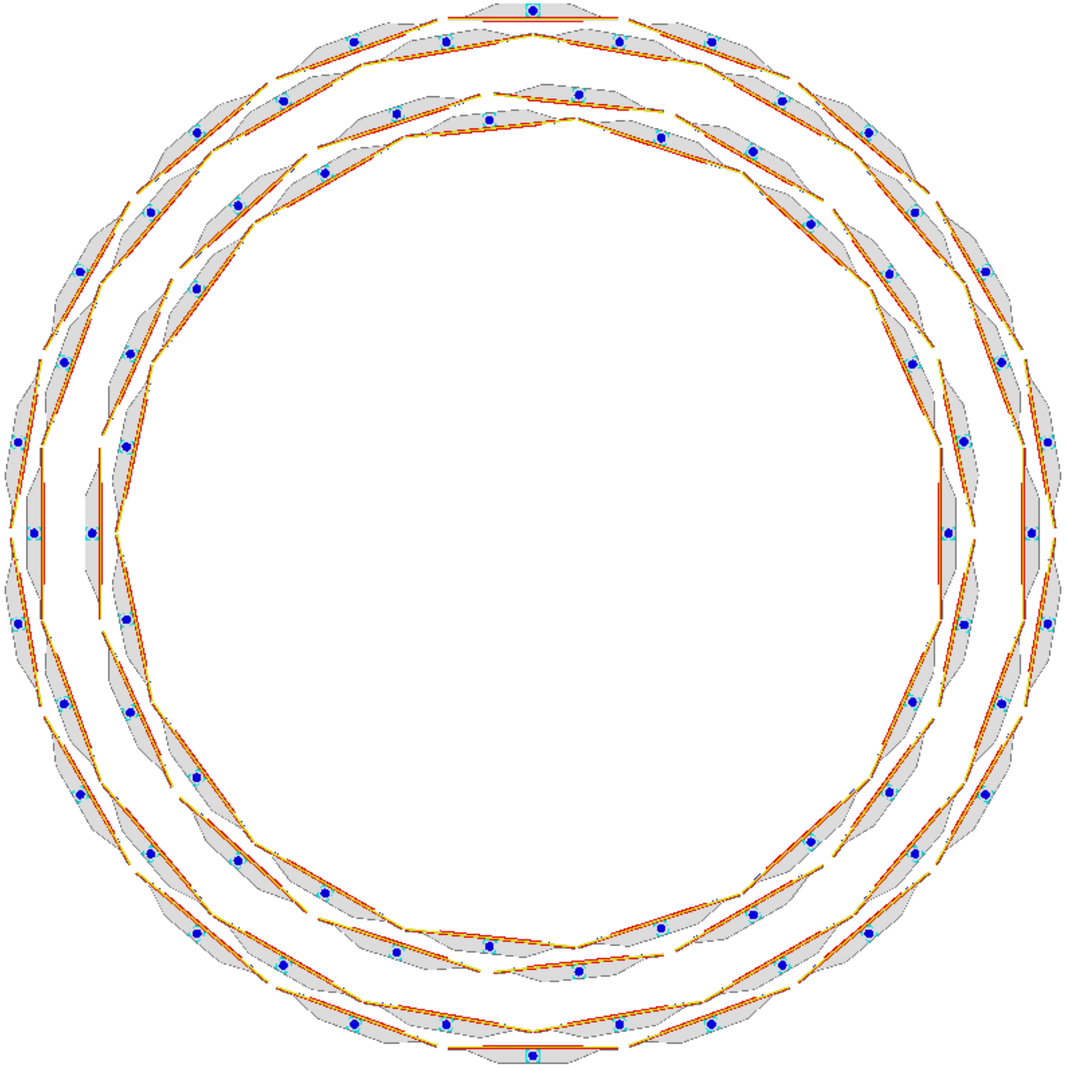
Description of INTT in Geant4

Genki Nukazuka (RBRC), INTT Bi-weekly meeting, 20/05/2020

Current model

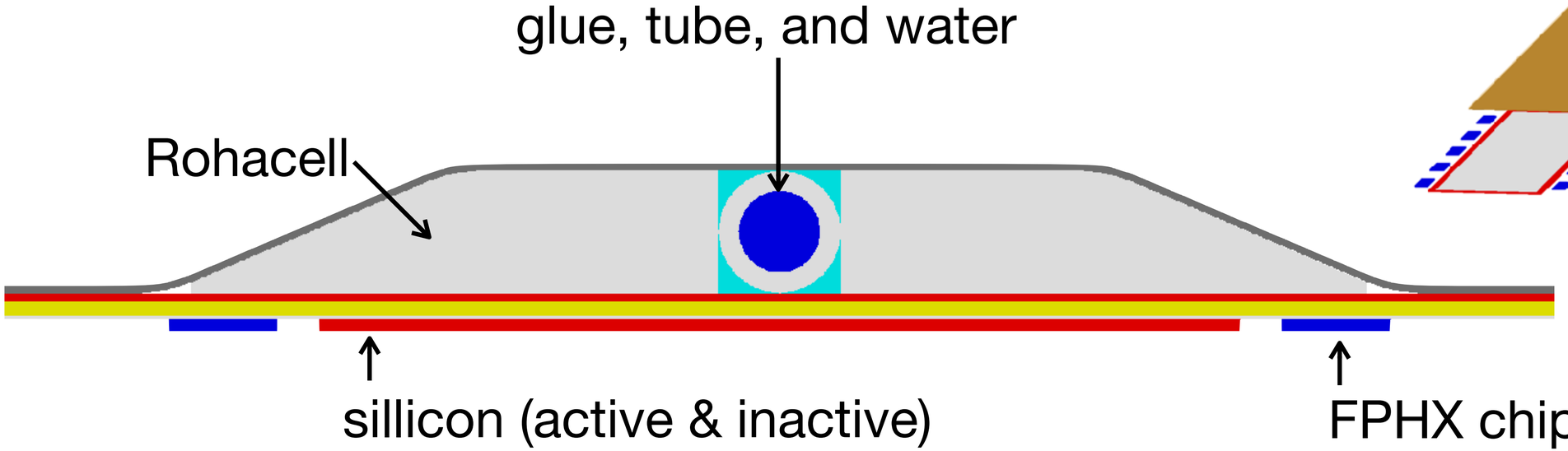
Git: commit d06d1d7fb70ae8c4c9bb28a7a50be0be512dcb55
(master branch, 2020/04/30)

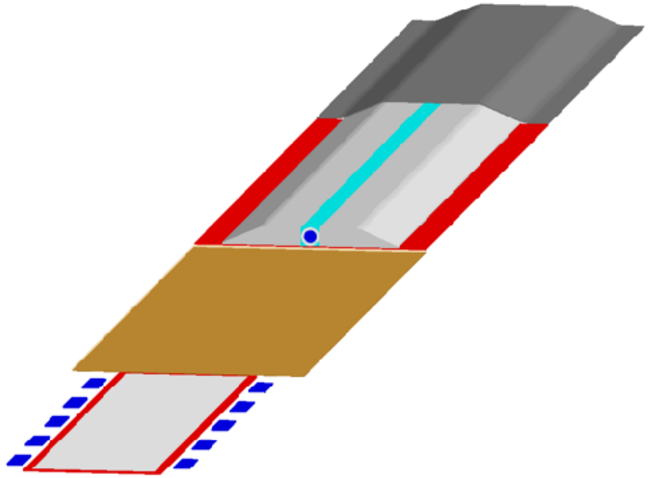




Cross-section

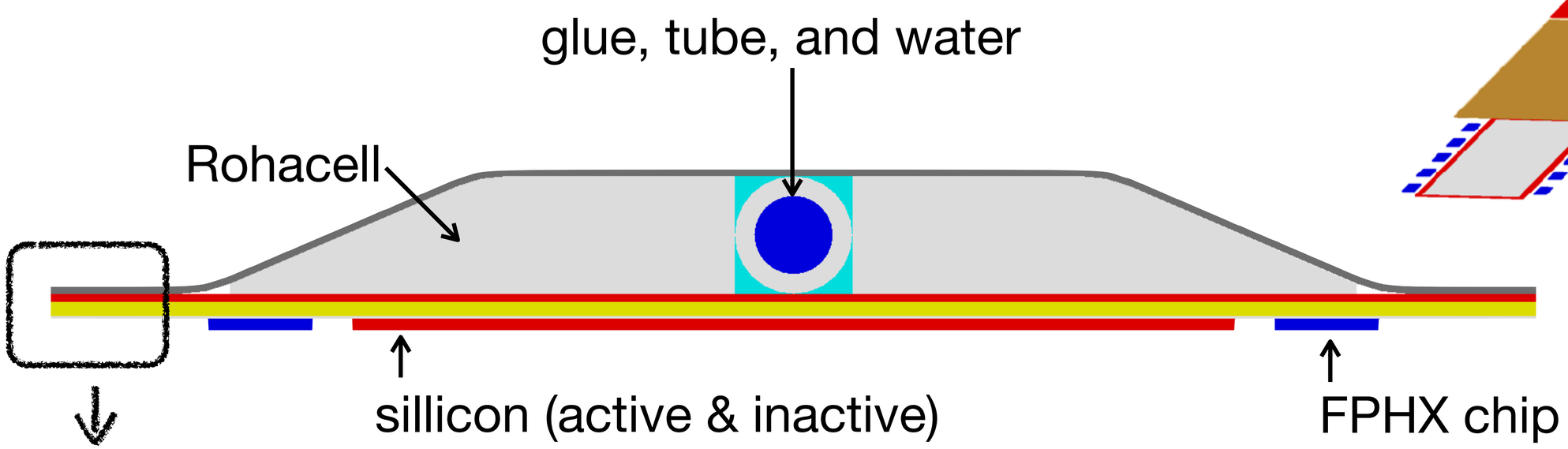
Current model

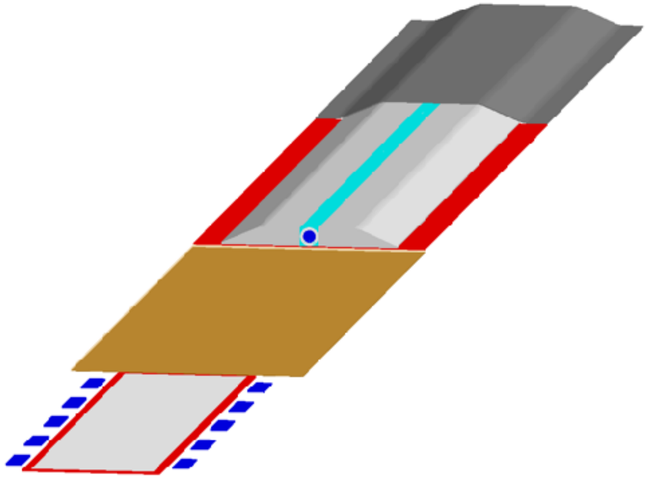


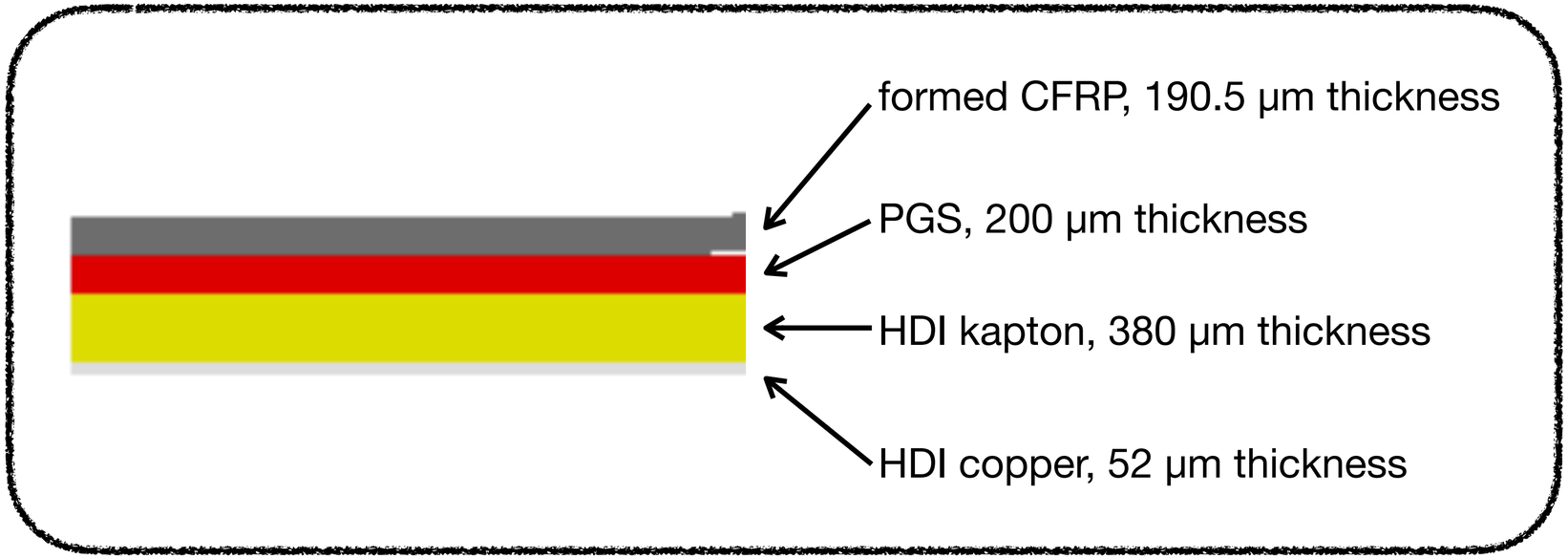


cross-section

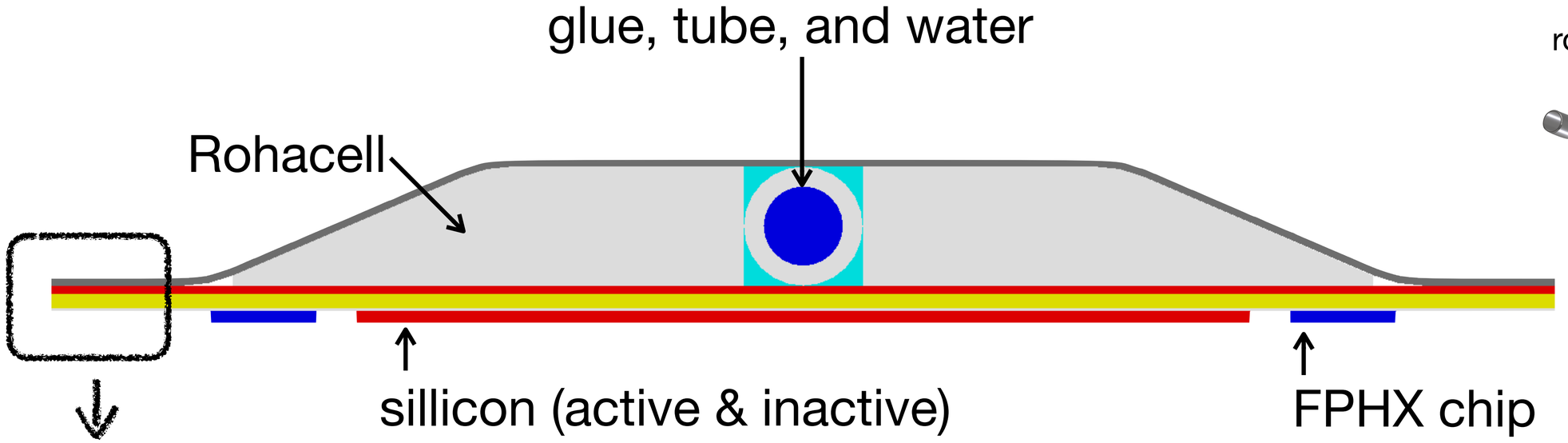
Current model

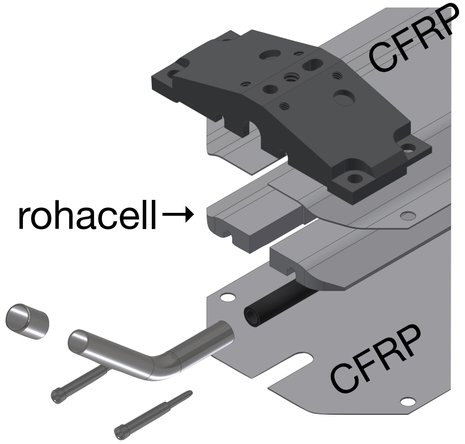






Current model





formed CFRP, 190.5 μm thickness

PGS, 200 μm thickness

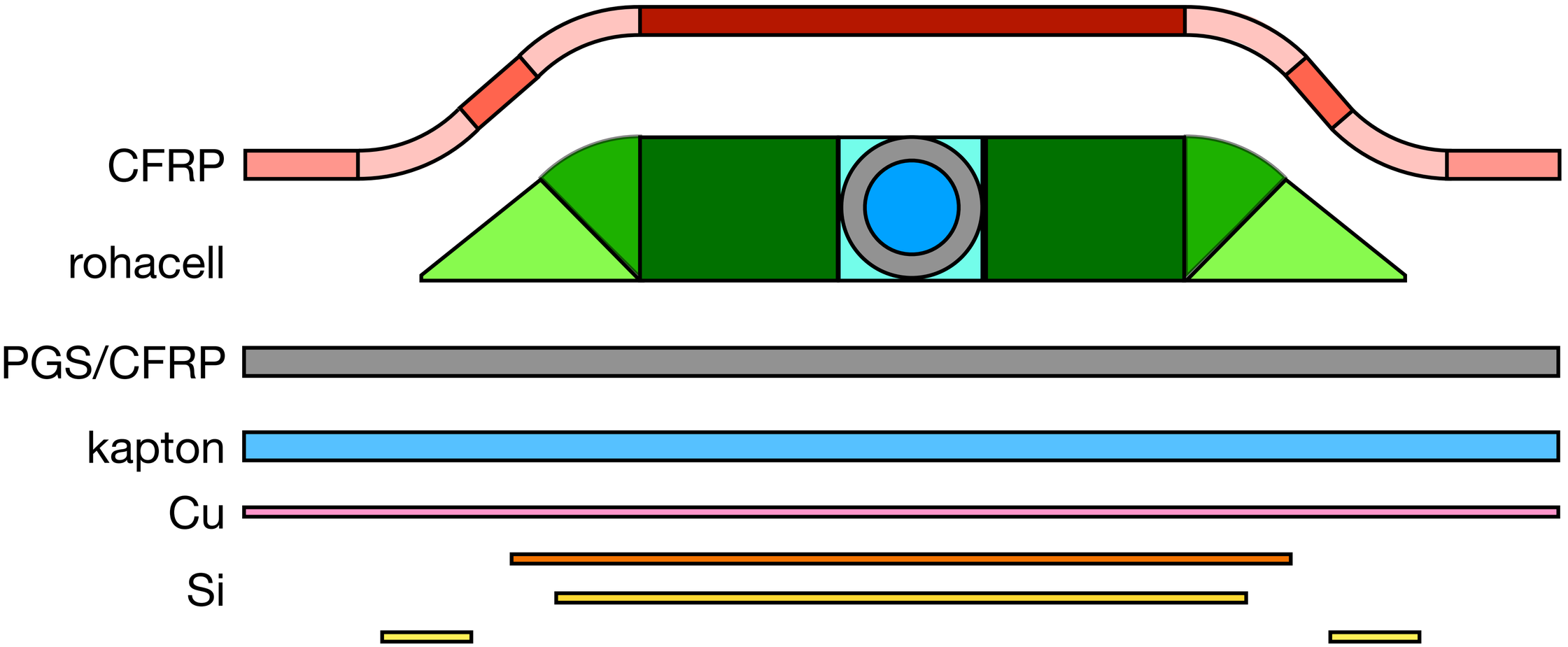
HDI kapton, 380 μm thickness

HDI copper, 52 μm thickness

PGS doesn't exist anymore.
Thickness of HDI copper shorten to 37.6 μm
to take the effective thickness in the acceptance
into account

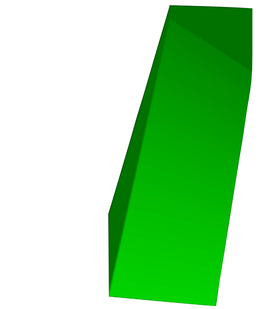
Actual description

Basically, parts are rectangular.

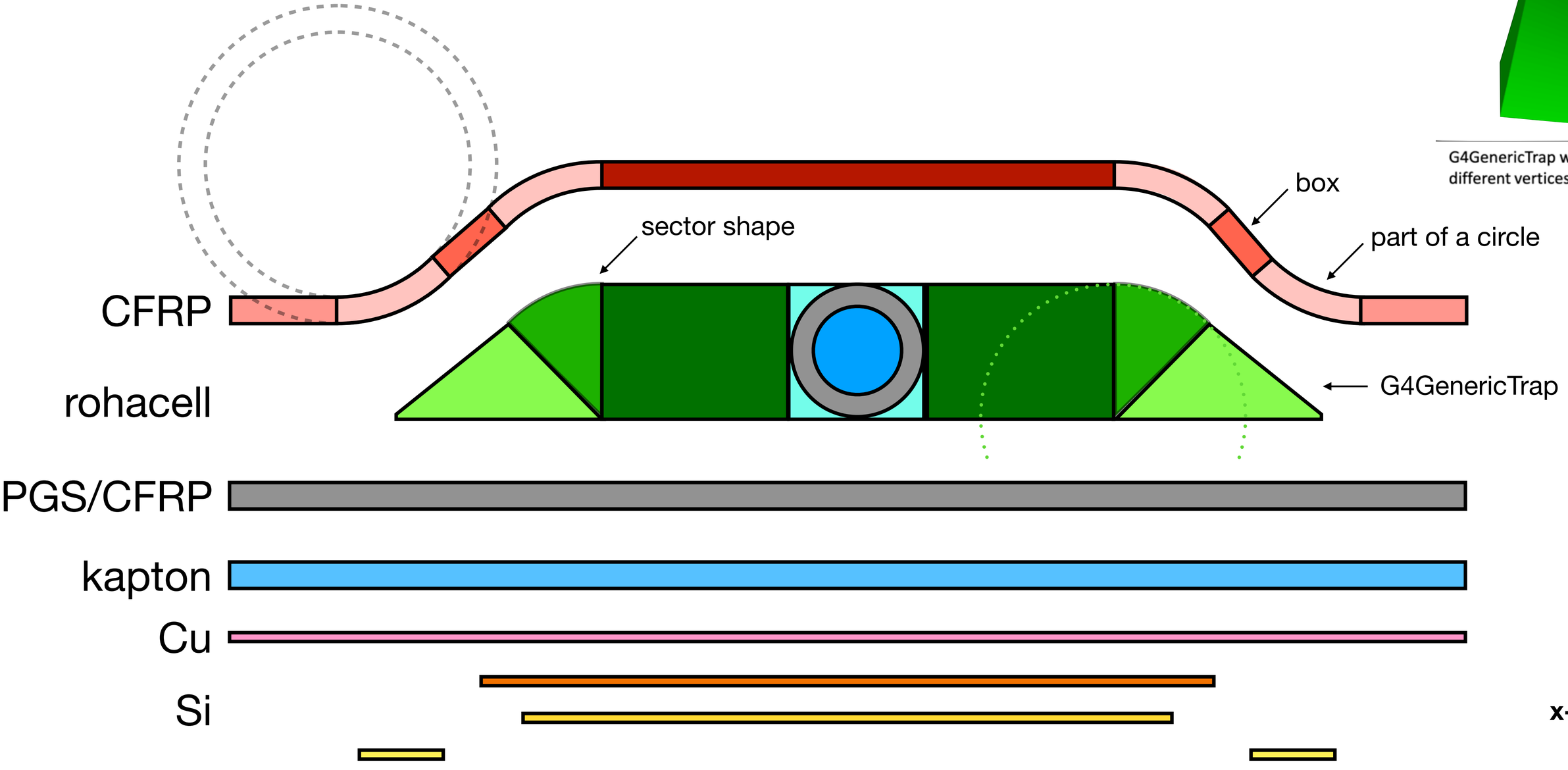


Actual description

Basically, parts are rectangular.



G4GenericTrap with 8 different vertices



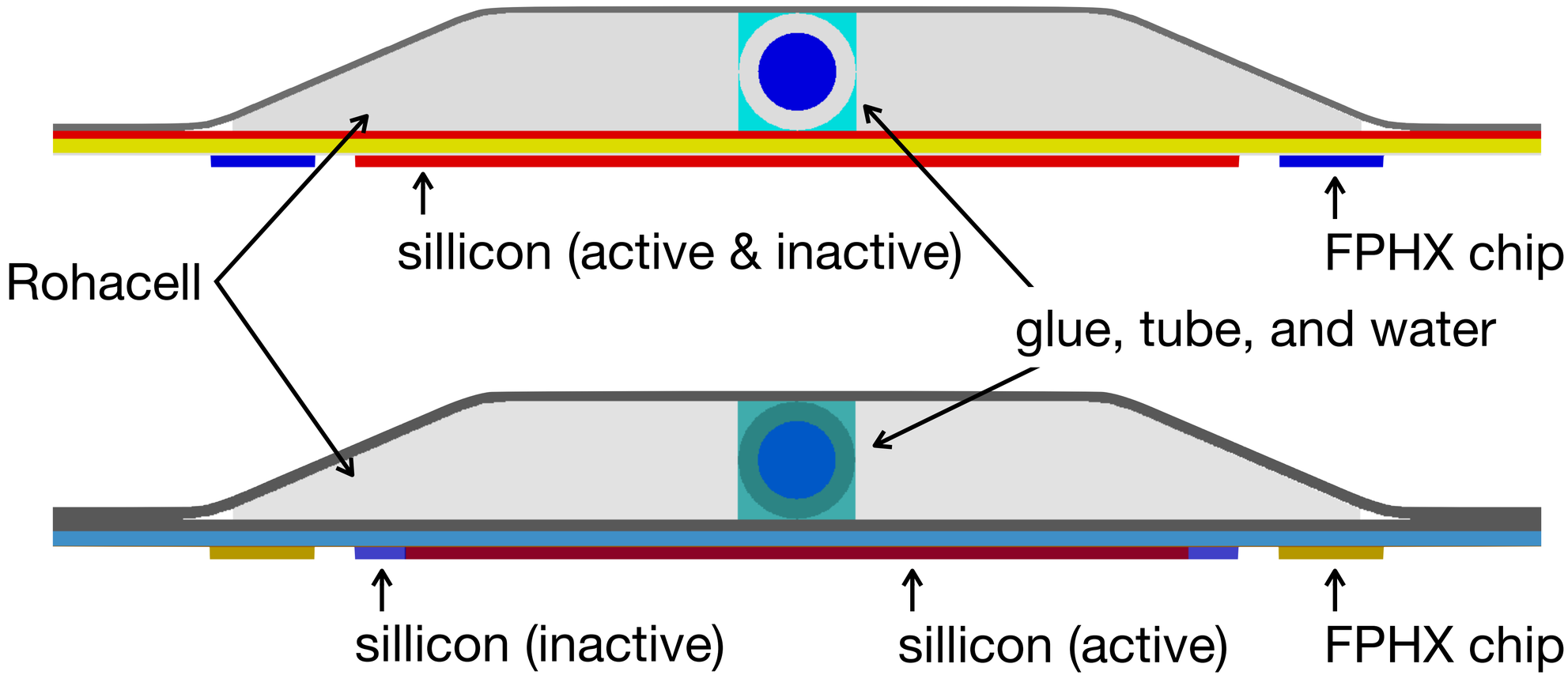
x-y plane

Updated geometry

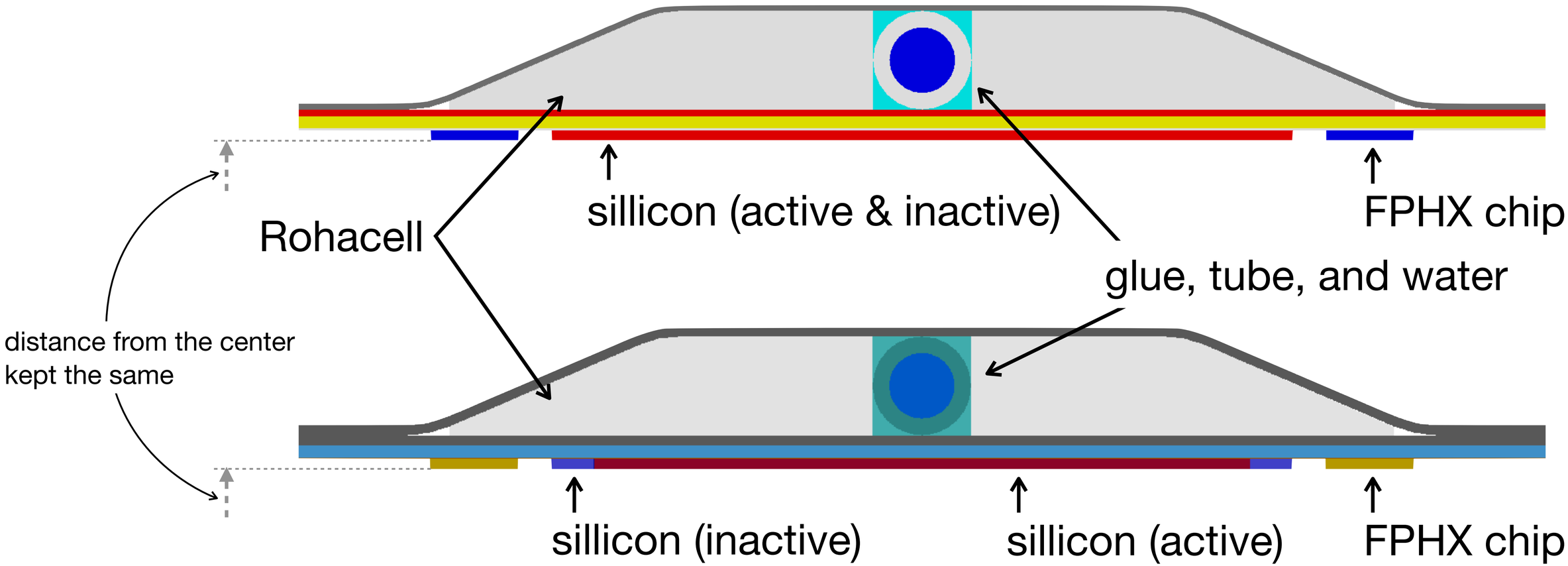
Current

New

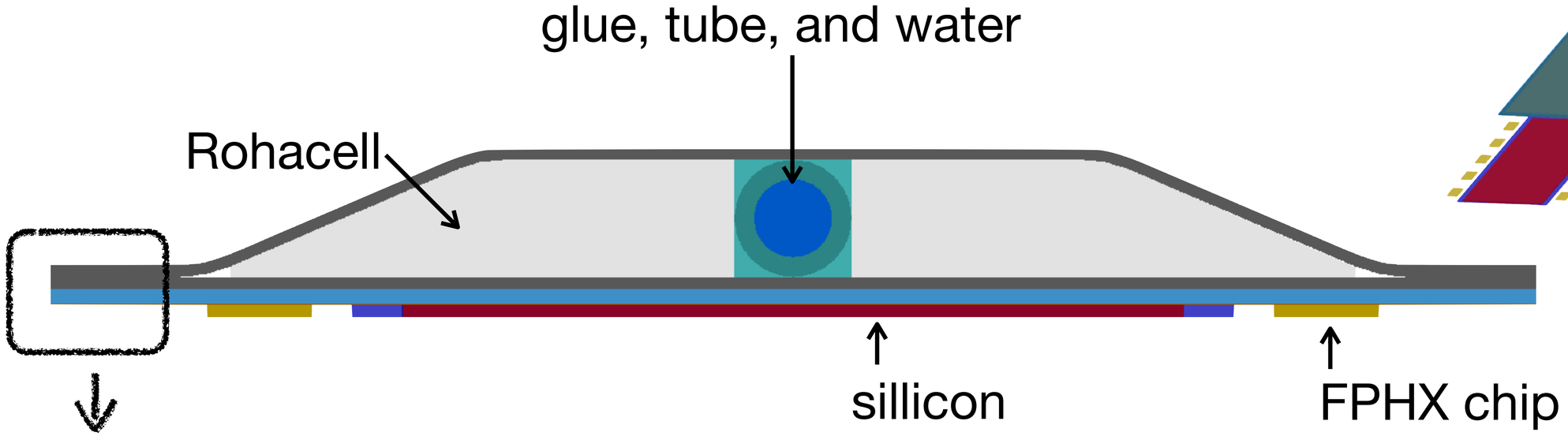
Updated geometry

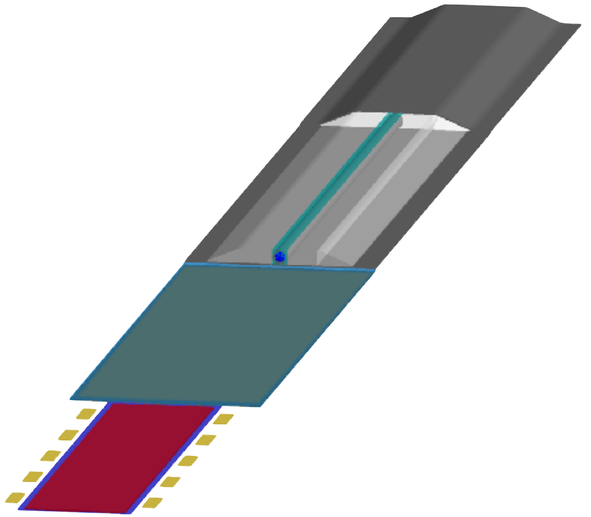


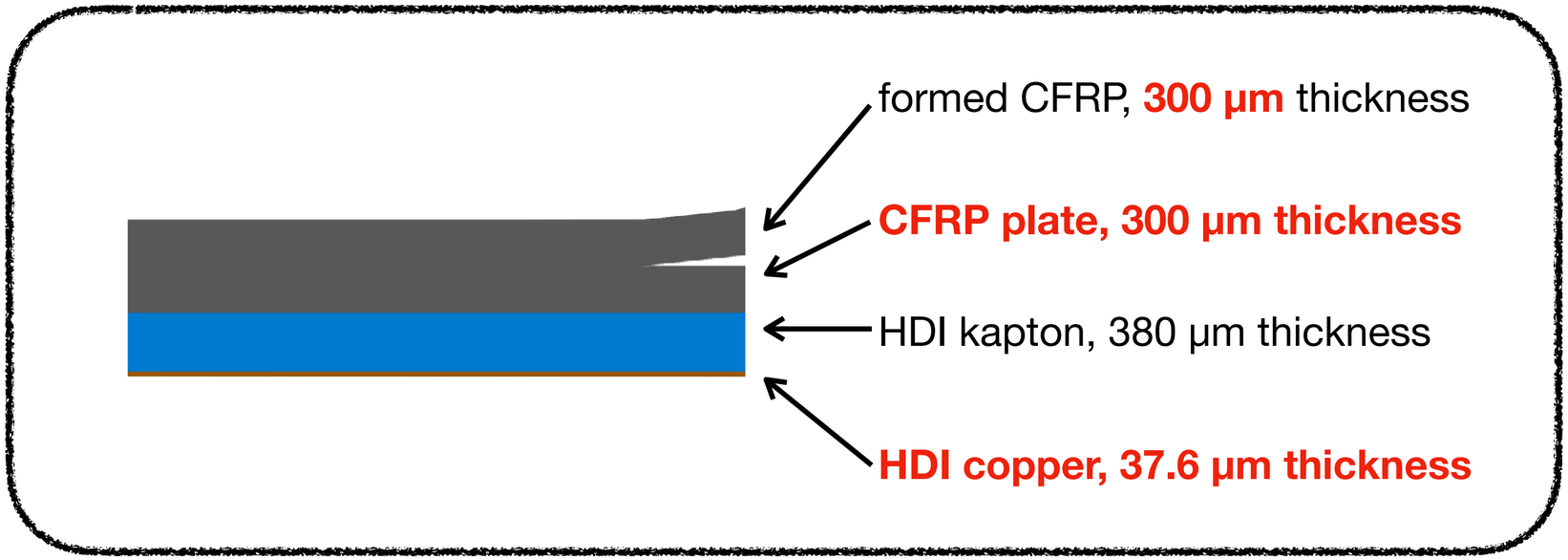
Updated geometry



Updated geometry





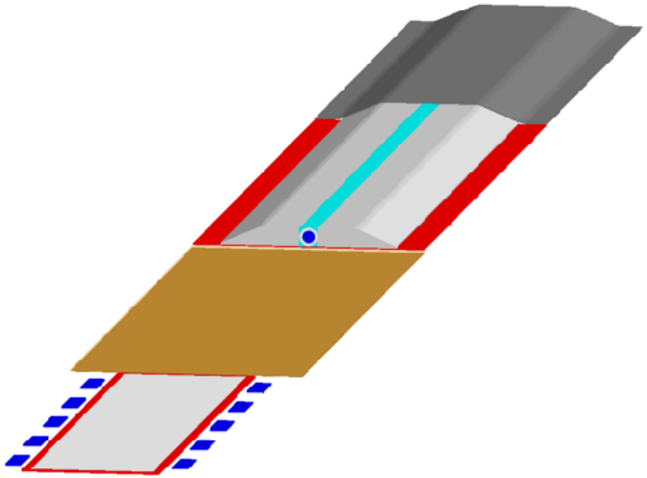


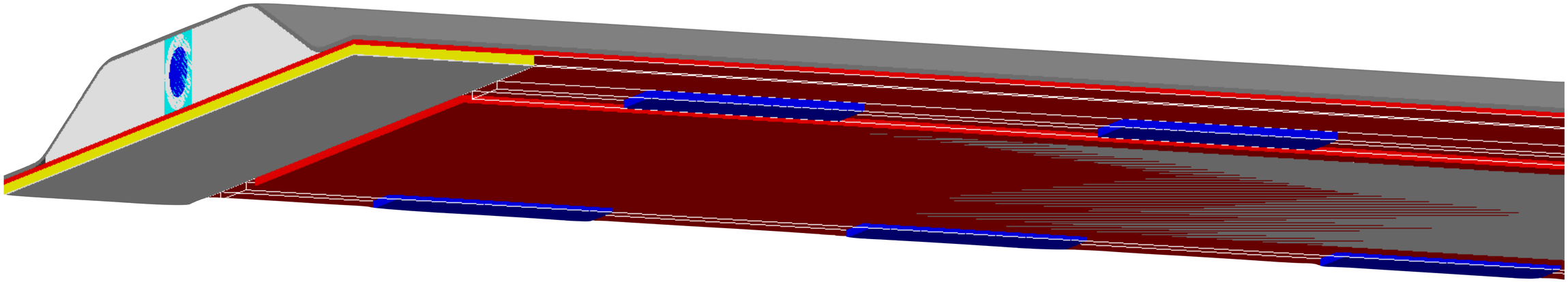
Next

- Cleaning the codes
- Test
- Pull request

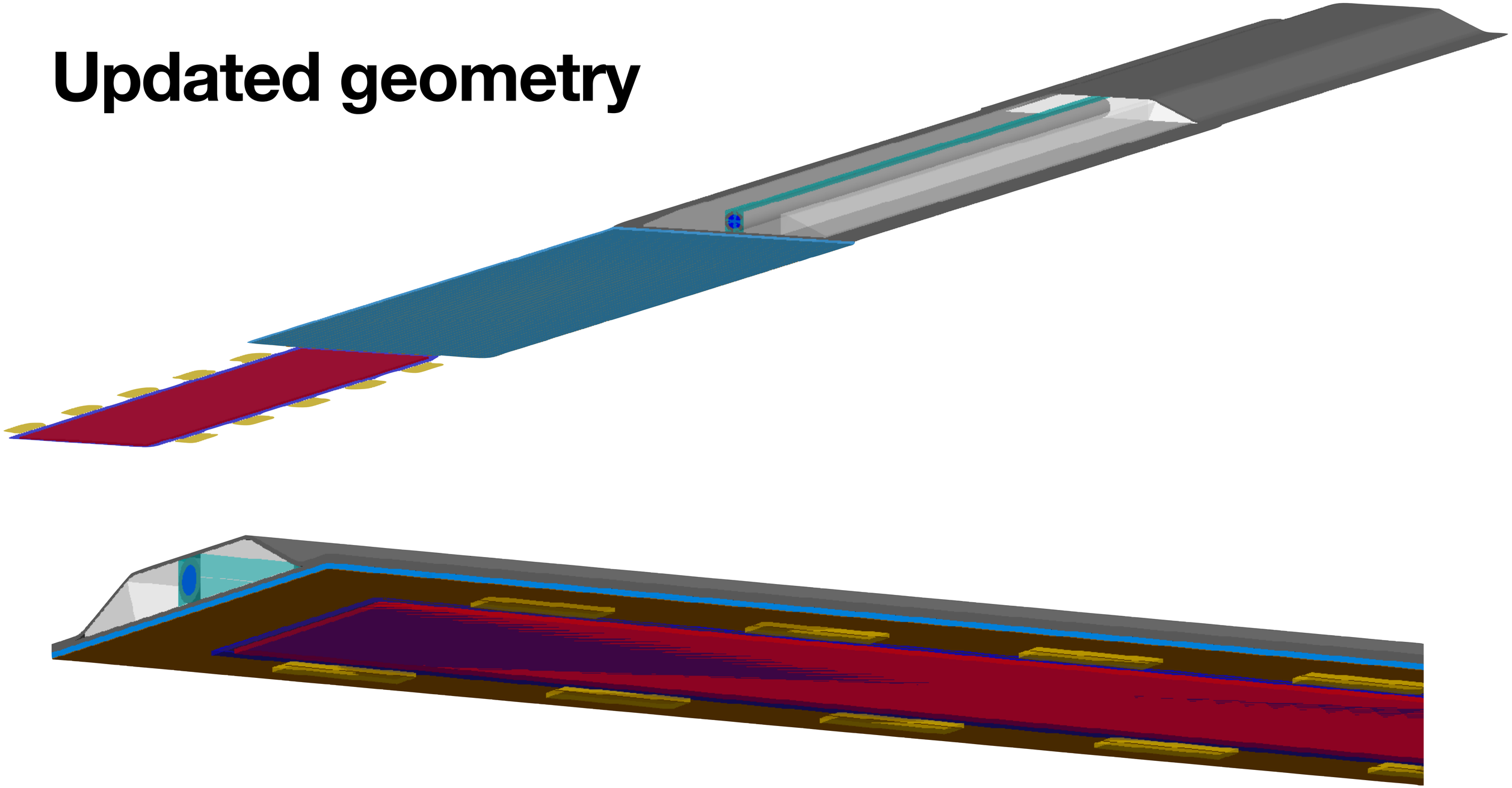
backup

Gallery of the current model





Updated geometry



Changed parameters

name	before	after	meaning
stave_straight_cooler_x	0.01905 cm	0.03 cm	thickness of the CFRP plates
hdi_copper_x	0.0052 cm	0.00376 cm	thickness of the copper layer in HID
pgs_x	0.02 cm	0.03 cm	thickness of PGS, to be merged to stave_straight_cooler_x
stave_slant_cooler_y	0.6345120525 cm	0.6322614829 cm	length of the slant part
stave_straight_outer_y	0.33451 cm	0.33227 cm	length of the CFRP plates