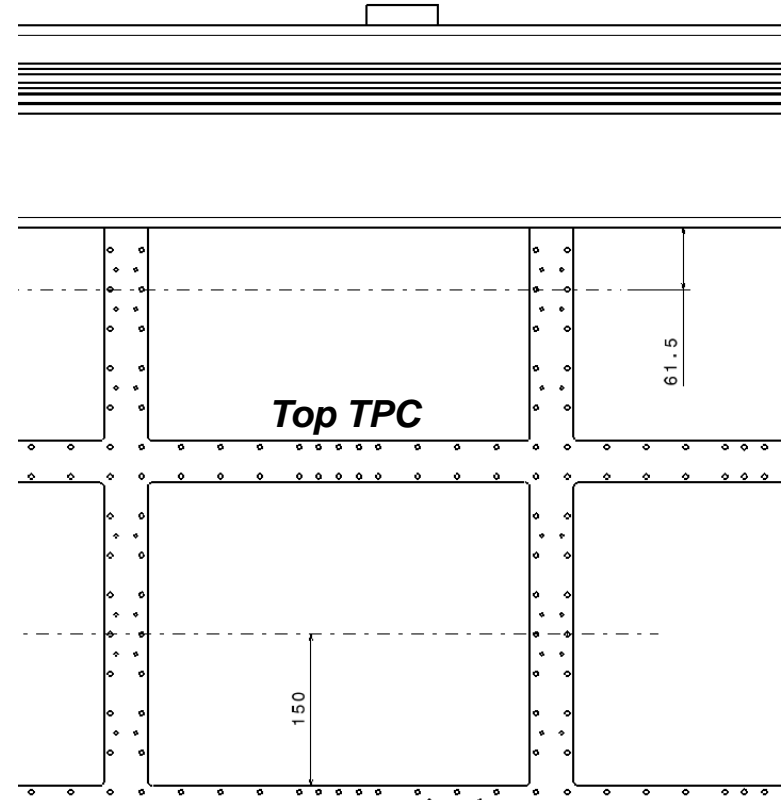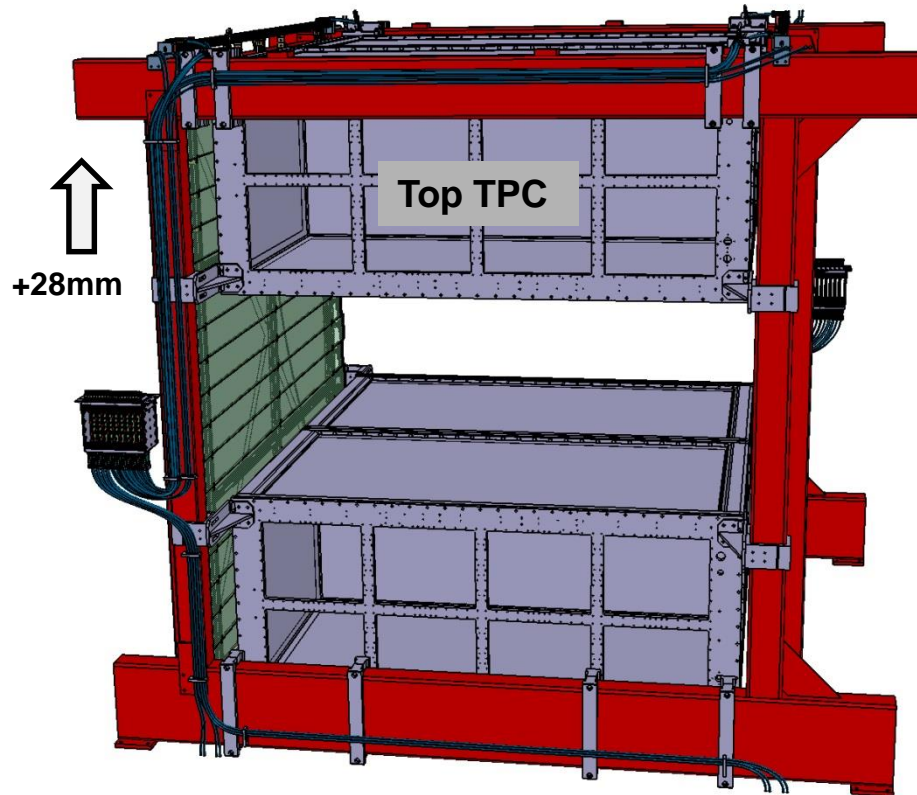# sFGD integration status

- *Latest envelope size (and final..!)*
- *MPPC connector orientation*
- *Status on cabling to the Crates*

UNIVERSITÉ DE GENÈVE
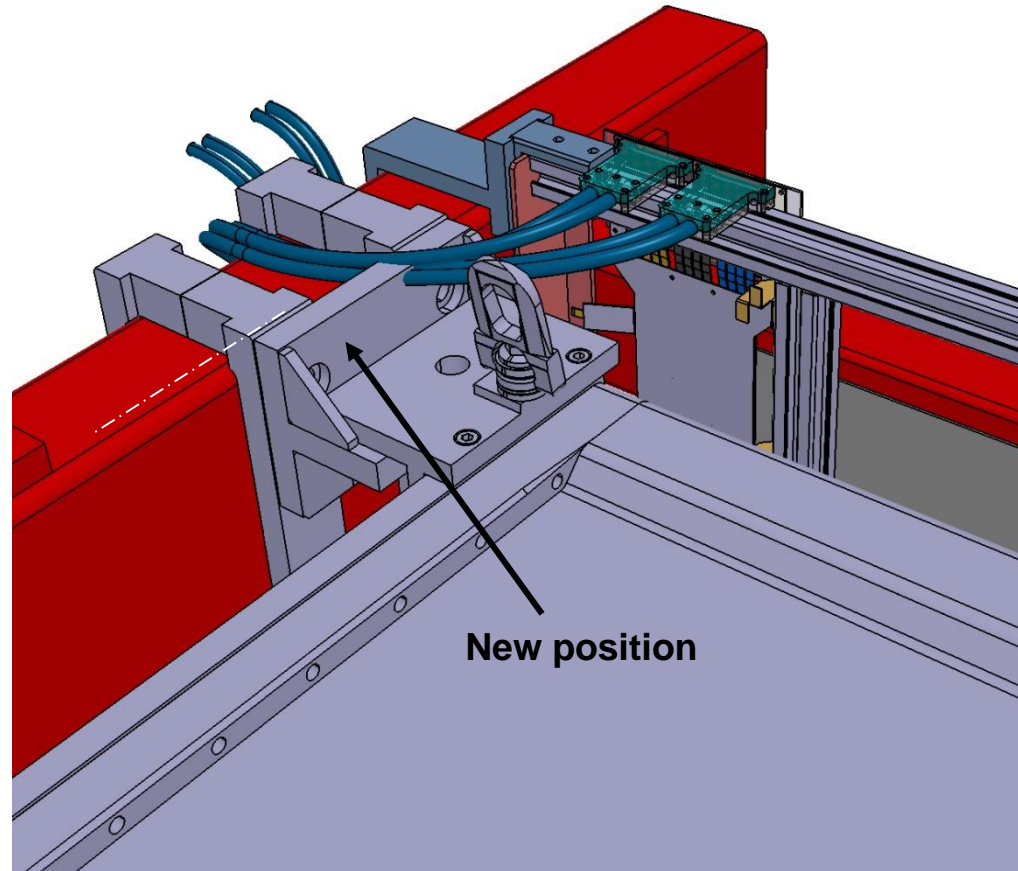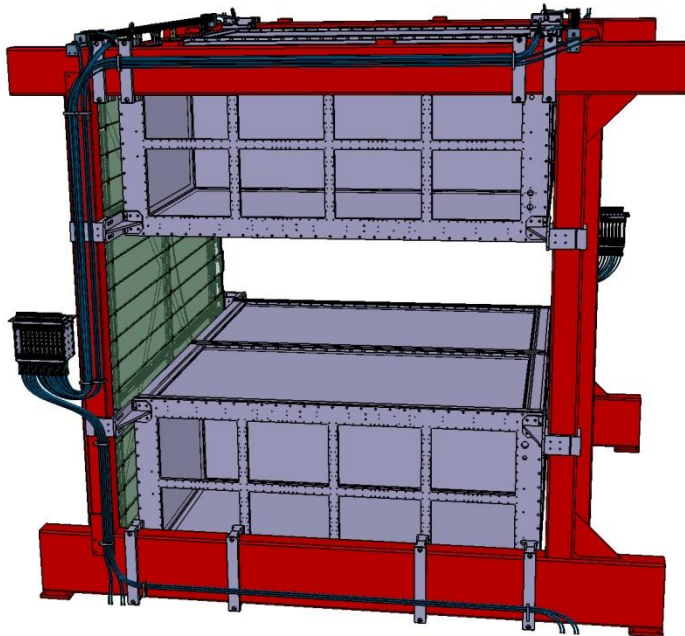**FACULTÉ DES SCIENCES**

Latest TPC design & positioning

+28mm

Top TPC

Top TPC

61.5

150

- **Top TPC** is moved up by <u>28mm</u> (max allowable shift / MicroMegas access)
- Bottom TPC is fixed by bracket design (no shift)
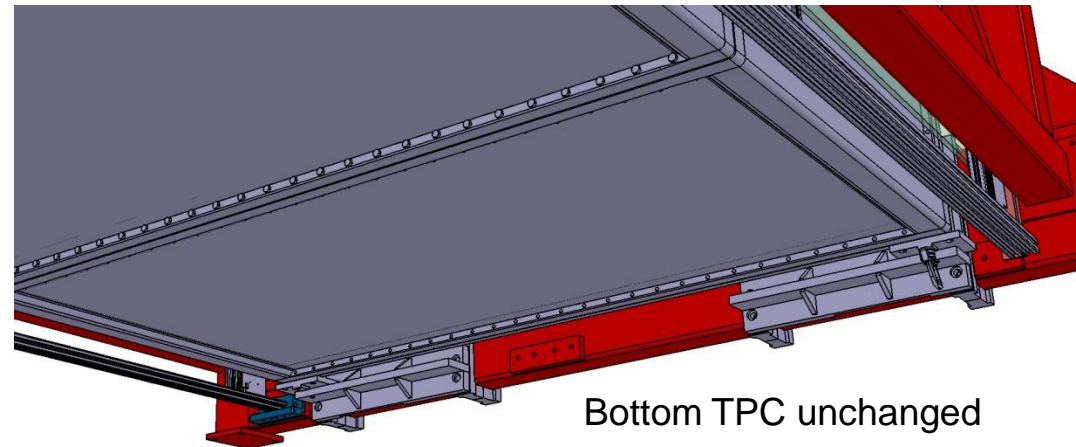- US/DStream TOF unchanged (more details on Patch panels and mechanics)

Franck CADOUX (UNIGE), WG1 meeting, January 13, 2020

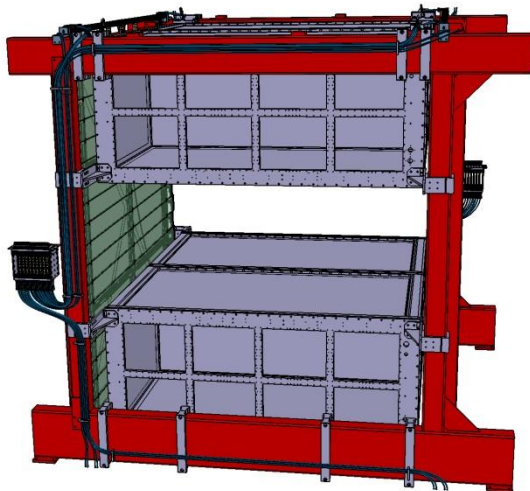## UNIVERSITÉ DE GENÈVE
FACULTÉ DES SCIENCES
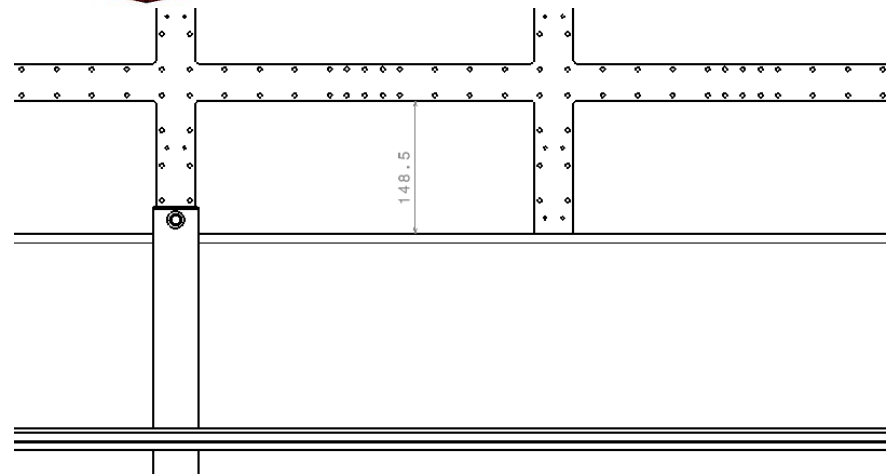
Latest TPC design & positioning

New position

Latest TPC design & positioning

Bottom TPC unchanged

148.5

- **Bottom TPC** already positioned to it lowest position / MicroMegas access

Latest TPC design & positioning

759mm

2007mm (connector to connector)

…otherwise 2013mm (bar to bar)

Latest TPC design & positioning

Nu Beam

2320mm (basket beams)
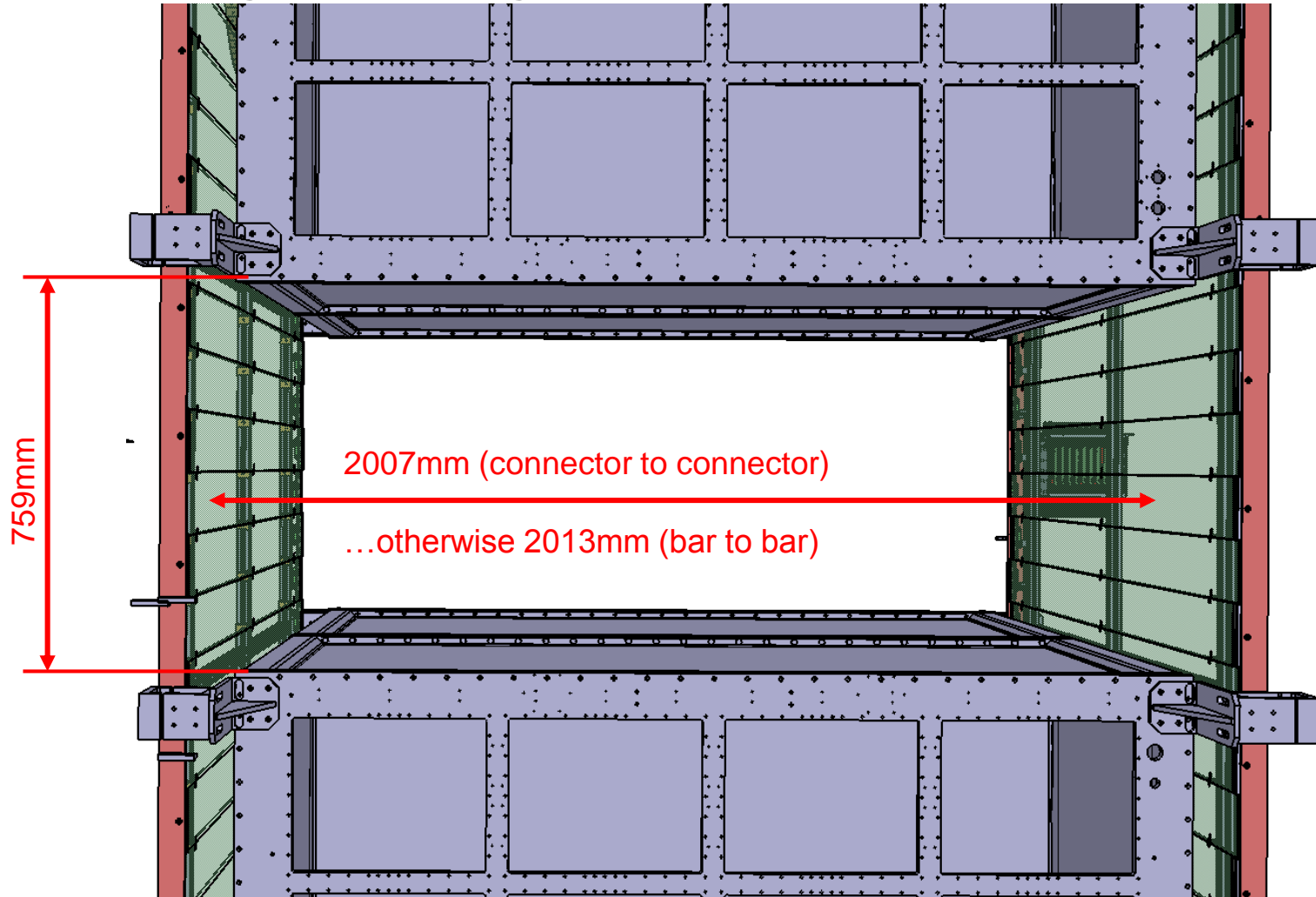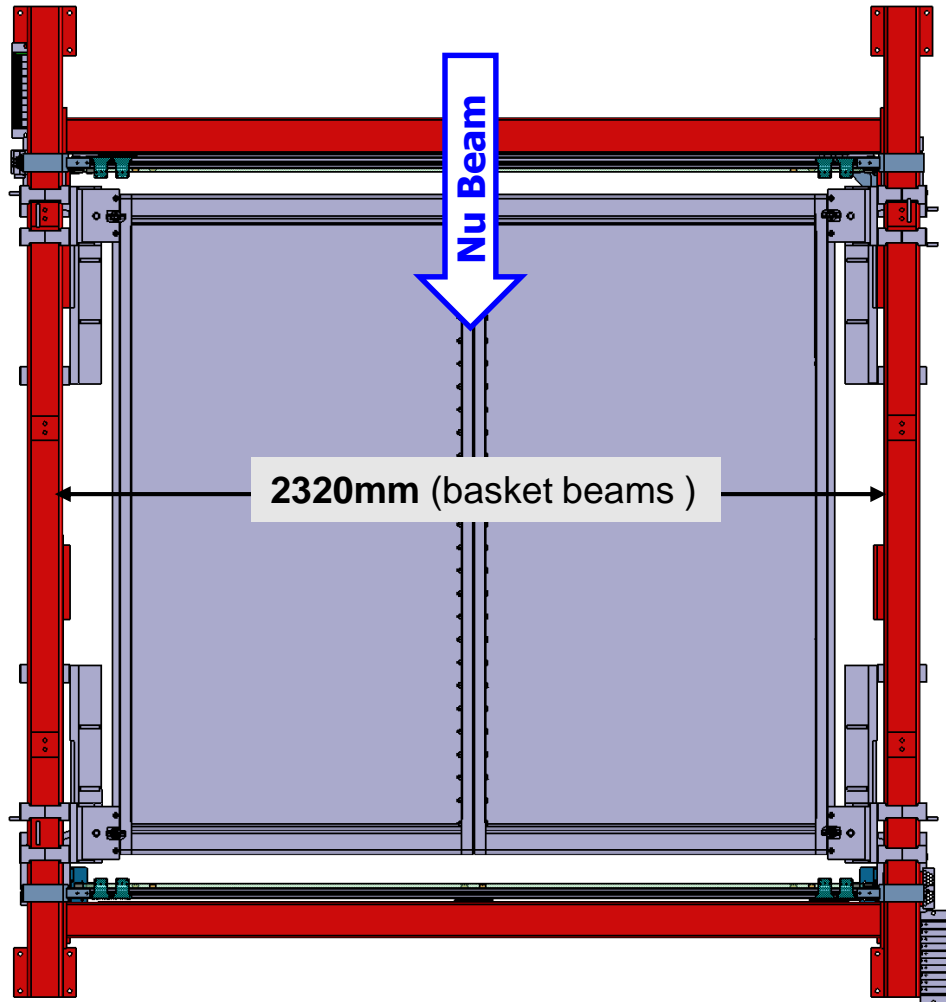
Margin for installation / deformations...

Envelope size:
- Beam axis: 2007mm (-2x10mm)*
- Height: 759mm (-2x10mm)
- Other: 2320mm (-2x10mm)

* Worst case.. Could easily be **2013mm**

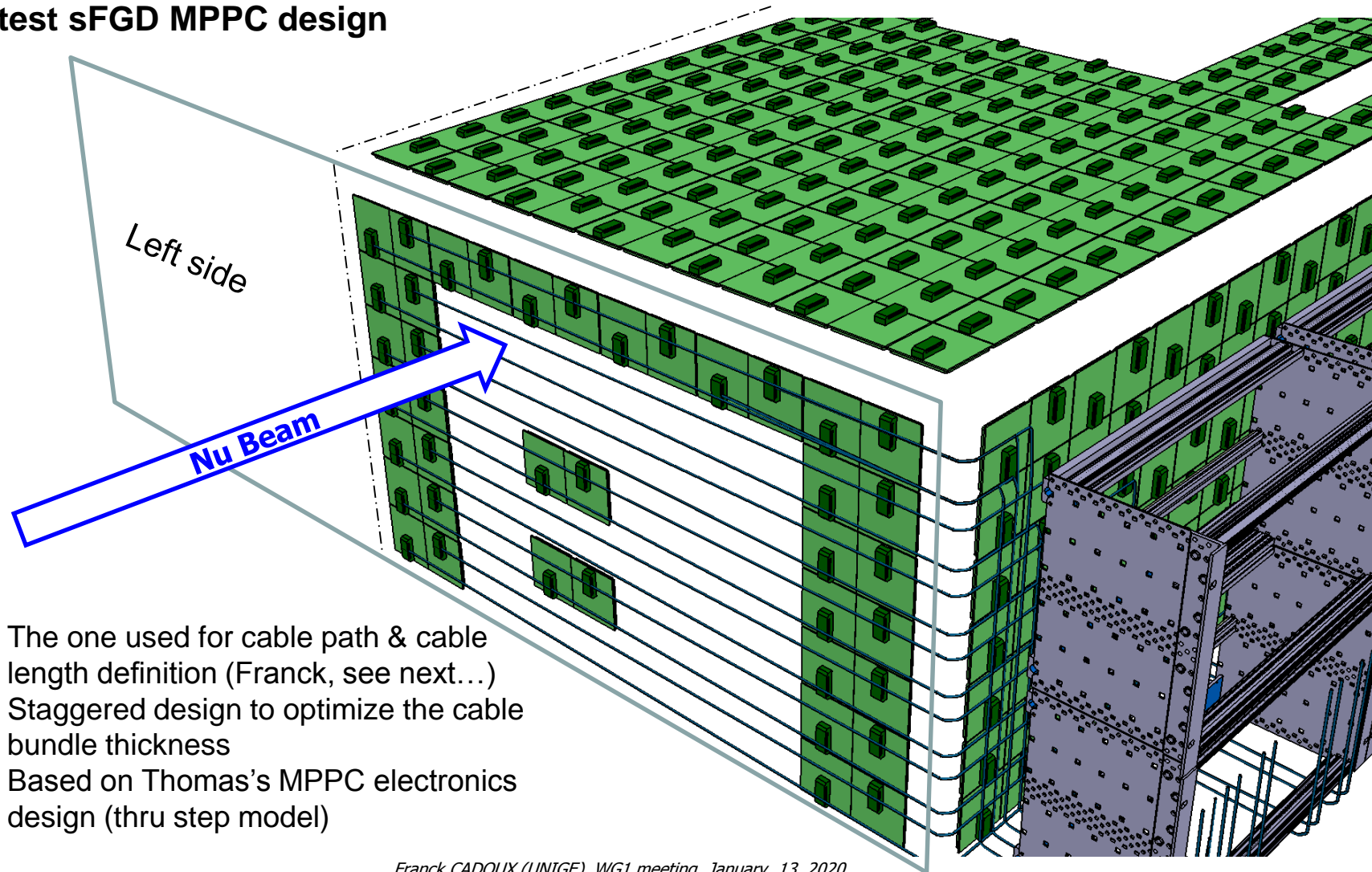**Latest sFGD MPPC design**

Left side

Nu Beam

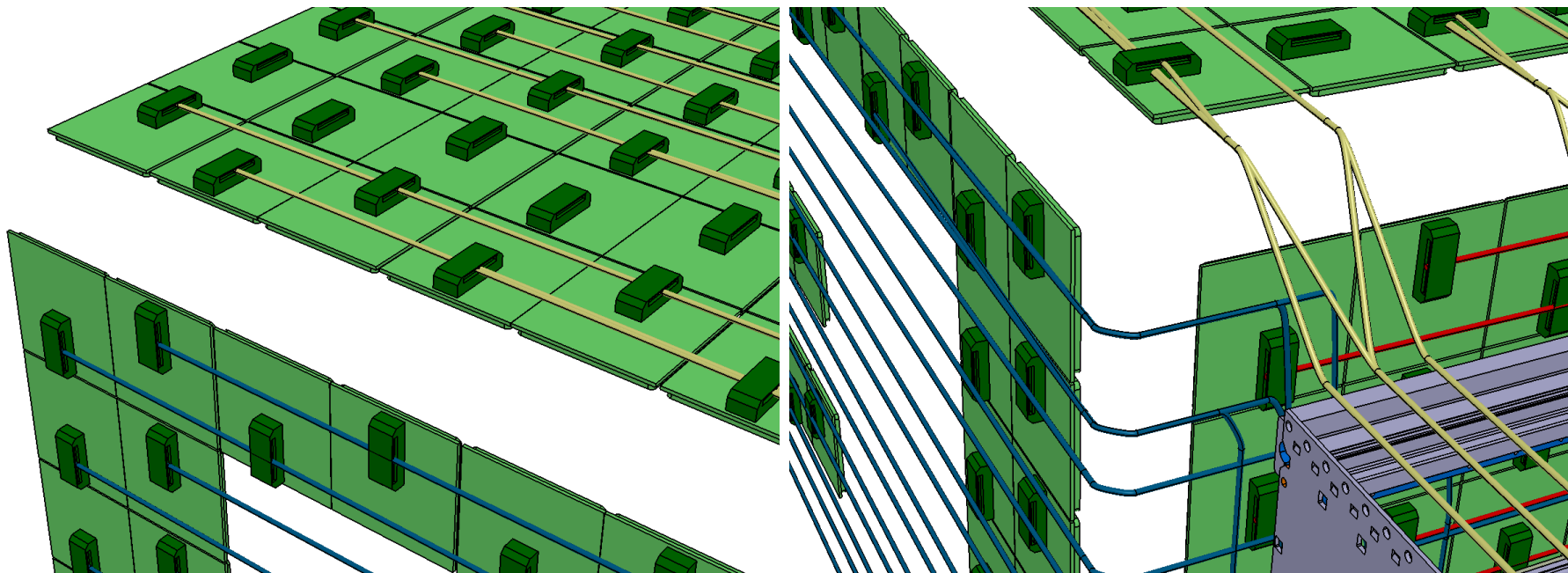- The one used for cable path & cable length definition (Franck, see next…)
- Staggered design to optimize the cable bundle thickness
- Based on Thomas's MPPC electronics design (thru step model)

Latest sFGD MPPC design (simplified version)

- Connector orientation is driven by the cabling to CRATES
- Mirror symmetry for **Upstream RIGHT/LEFT** sides, and 180° rotation for **RIGHT/LEFT** sides and **Top RIGHT/LEFT**

Latest sFGD MPPC design & connector (detailed version)
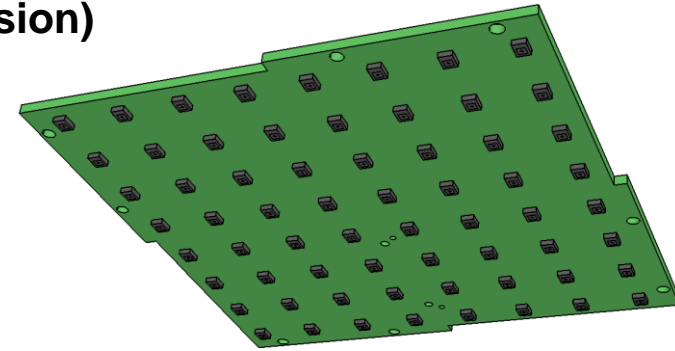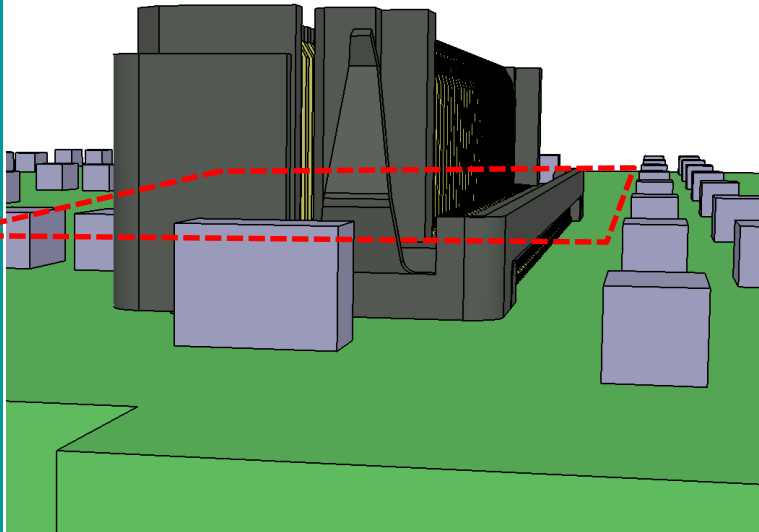
Bottom side

- Some capacitors sticking out from the top
- How far should be the cut out on light tight sheet?
- Avoid any silicon penetration into the connector

Top side

UNIVERSITÉ
DE GENÈVE

FACULTÉ DES SCIENCES
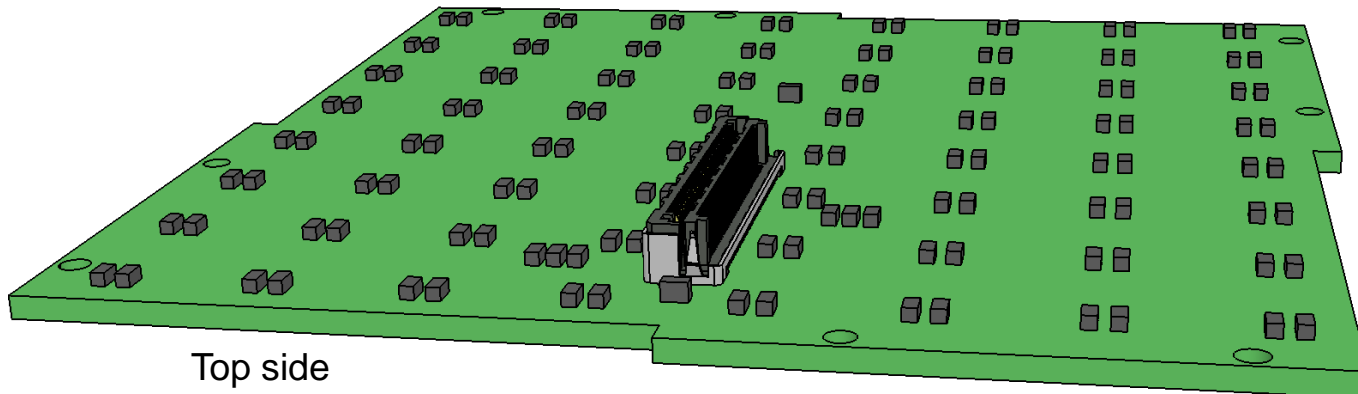
Latest sFGD MPPC design & connector
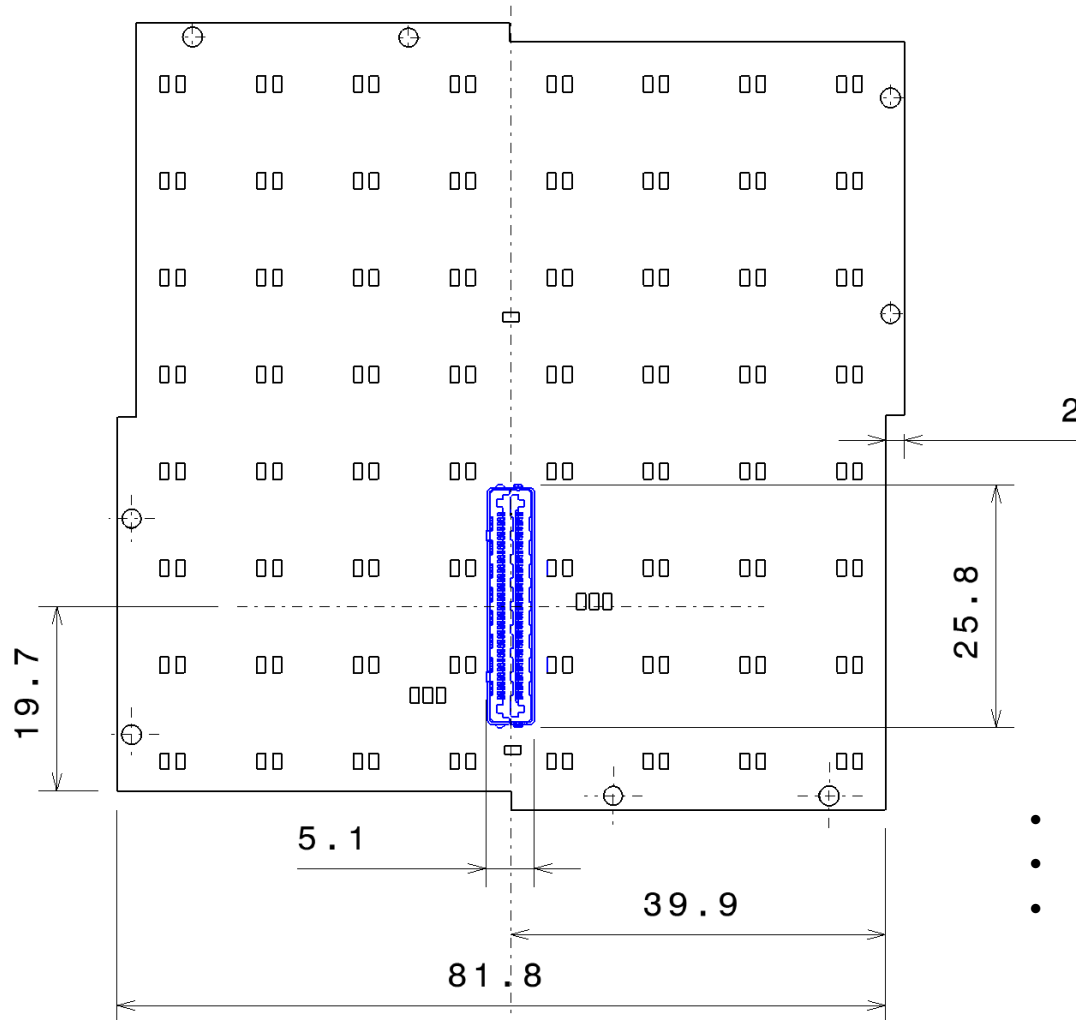
- **Step model** to be sent to Larry
- Complete the side panel design
- Design the light tight barrier

Latest sFGD MPPC design & connector
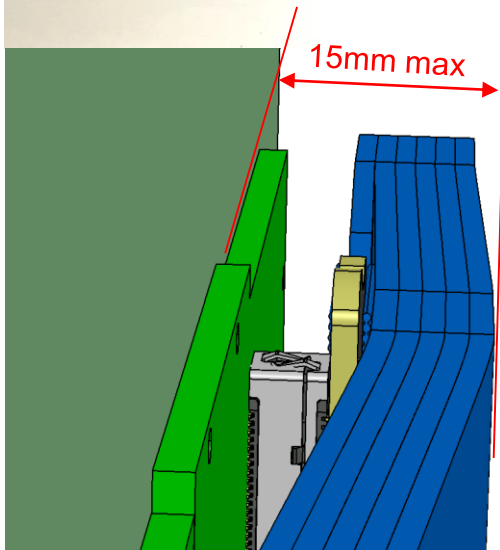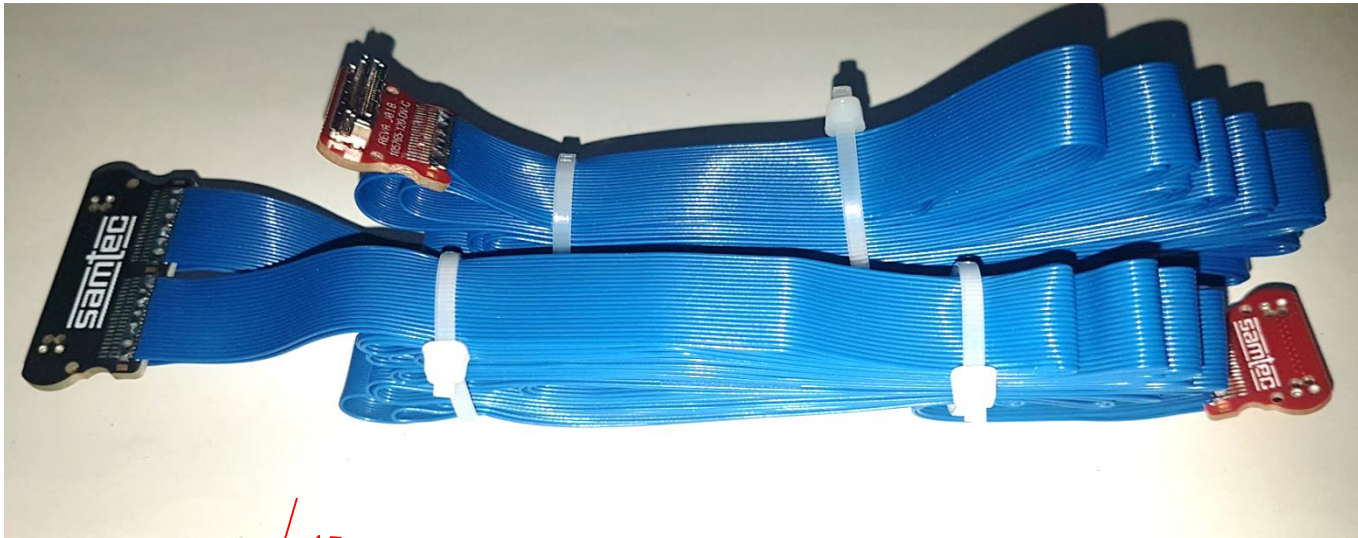
15mm max

- Thanks to MPPC staggering…
  only 6 MPPC out of 12 on a line
- Maximum stacking on flat cables
  (6 MPPC): **7.5mm**
- Stacking from PCB to cable:
  15mm max

Latest sFGD MPPC cable length

- Cable length recorded in an excel file (by CAD)
- **Flat Cables are simplified (**here only its "neutral fibre")…some margins to be added
- Try to limit the number of flavours (cable lengths)

Latest sFGD cable length (example of Top side)

TOP SIDE		

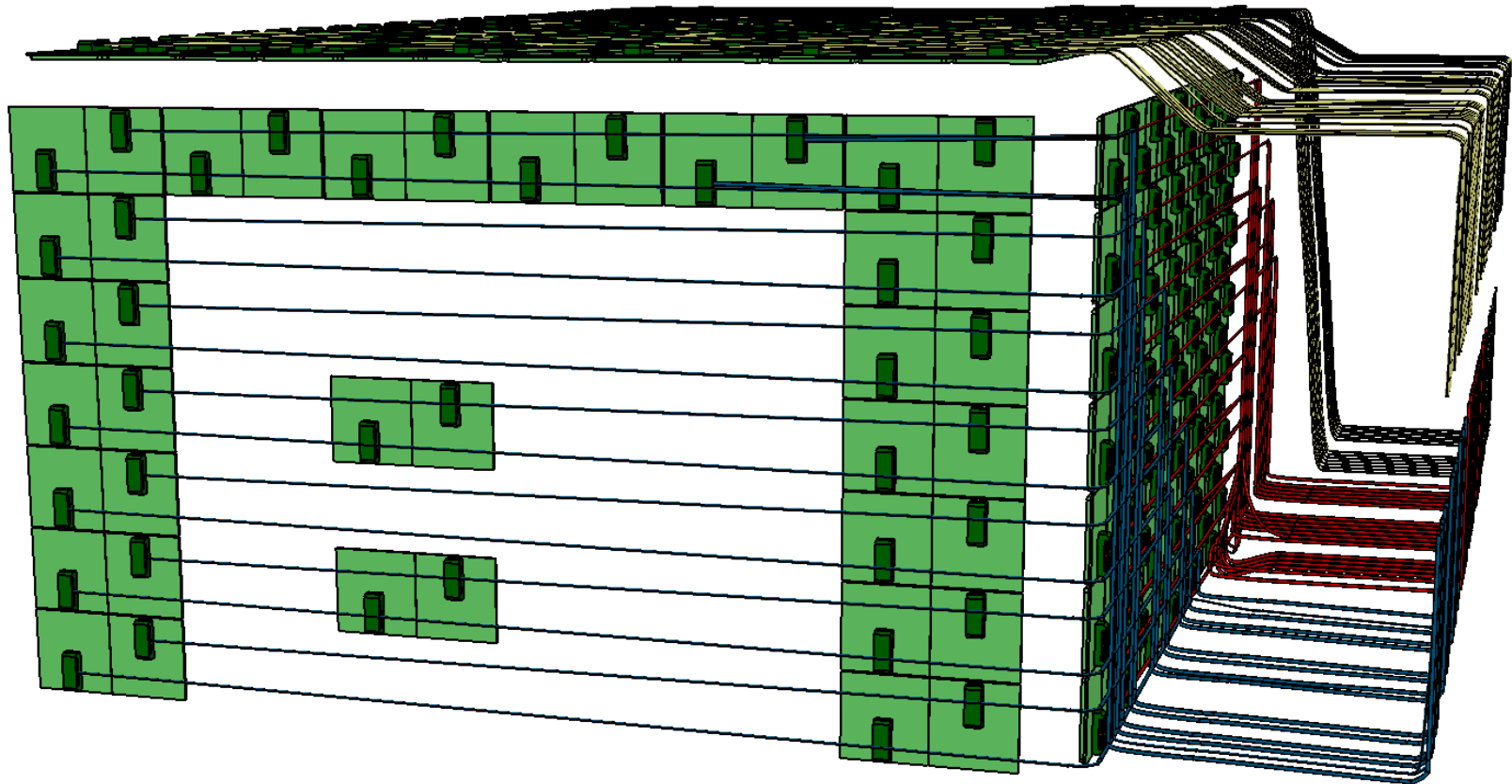| "r side" ROW#	L1	L2	L3	L4	L5	L6	L7	L8	L9	L10	L11	L12
1	1535	1453	1316	1235	1098	1015	880	796	880	743	606	470
2	1535	1453	1316	1235	1098	1015	880	796	880	743	606	470
3	1551	1453	1333	1235	1114	1016	895	797	882	770	609	497
4	1550	1468	1331	1250	1113	1030	895	811	895	758	621	485
5	1575	1468	1356	1250	1138	1030	920	811	895	758	621	485
6	1580	1498	1361	1280	1143	1060	925	841	925	788	651	515
7	1580	1498	1361	1280	1143	1060	925	841	925	788	651	515
8	1617	1535	1398	1317	1180	1097	962	878	938	843	665	570
9	1617	1535	1398	1317	1180	1097	962	878	938	843	665	570
10	1650	1535	1431	1317	1213	1097	995	878	970	880	697	607
11	1647	1565	1428	1347	1210	1127	992	908	968	873	695	600
12	1712	1565	1493	1347	1275	1127	1057	908	968	873	695	600
13	1705	1623	1486	1405	1268	1185	1050	966	1026	931	753	658
14	1705	1623	1486	1405	1268	1185	1050	966	1026	931	753	658
15	1755	1673	1536	1455	1318	1235	1100	1016	1076	981	803	708
16	1755	1673	1536	1455	1318	1235	1100	1016	1076	981	803	708
17	1816	1660	1597	1455	1379	1235	1161	1016	1133	1038	860	765
18	1816	1734	1597	1516	1379	1296	1161	1077	1137	1042	864	769
19	2057	1734	1837	1516	1617	1296	1397	1077	1137	1042	864	769
20	2059	1976	1839	1756	1619	1536	1399	1316	1350	1315	1130	1095
21	2059	1976	1839	1756	1619	1536	1399	1316	1350	1315	1130	1095
22	2059	1976	1839	1756	1619	1536	1399	1316	1350	1315	1130	1095

Min=	470
Max=	2059
Mean val.=	1195