Tracker @ sLHC
DESY HH Activity

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DESY CMS Group Meeting
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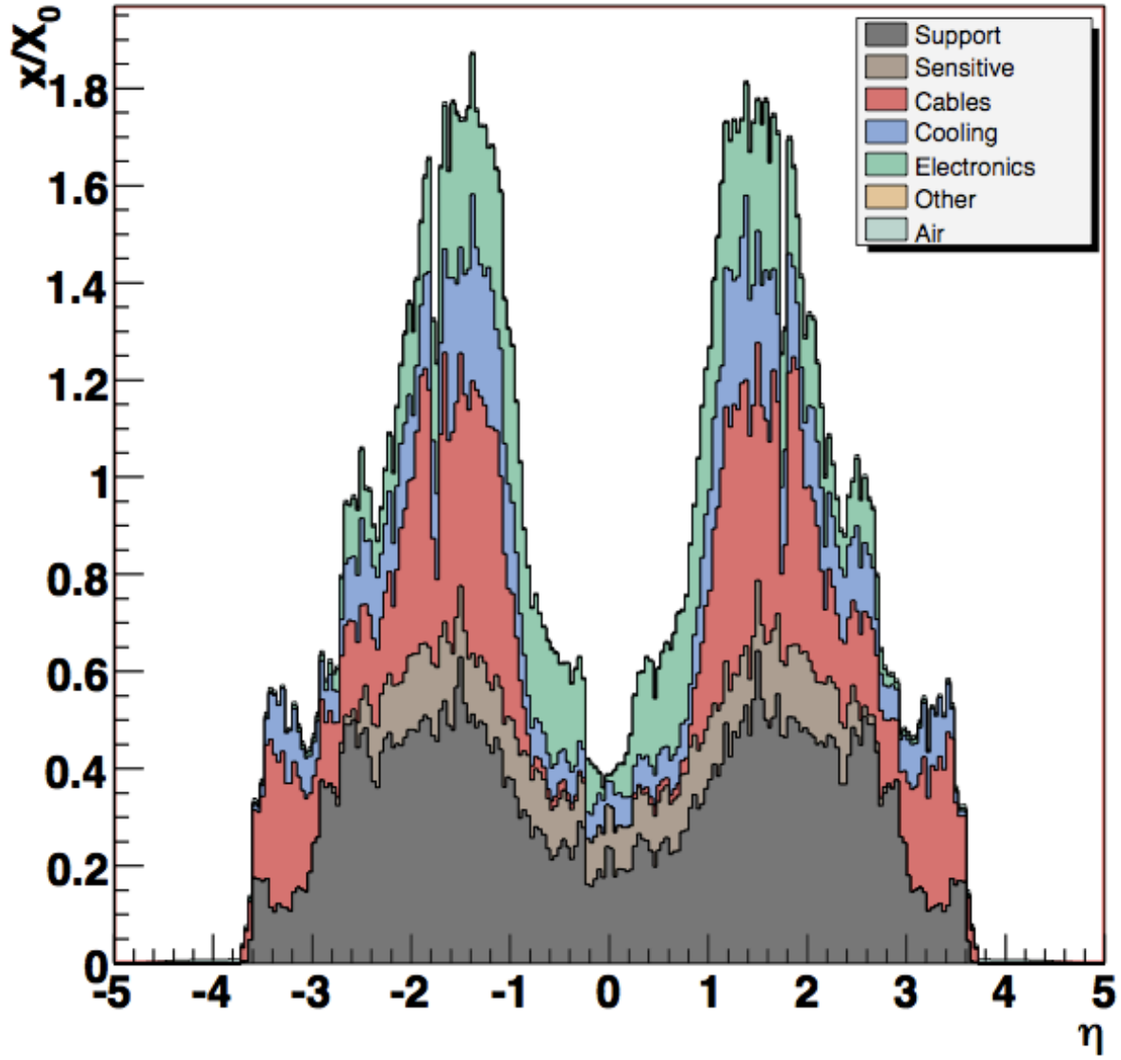
Requirements for a new Tracker

- Deal with much higher track density per bunch crossing
  - Increase granularity ➔ keep occupancy low
  - Use sensor with short strips (strixels)
  - More channels
  - New module design
- Tracker must provide trigger information
  - New module design
- Reduce material budget
  - Limitation of current tracker

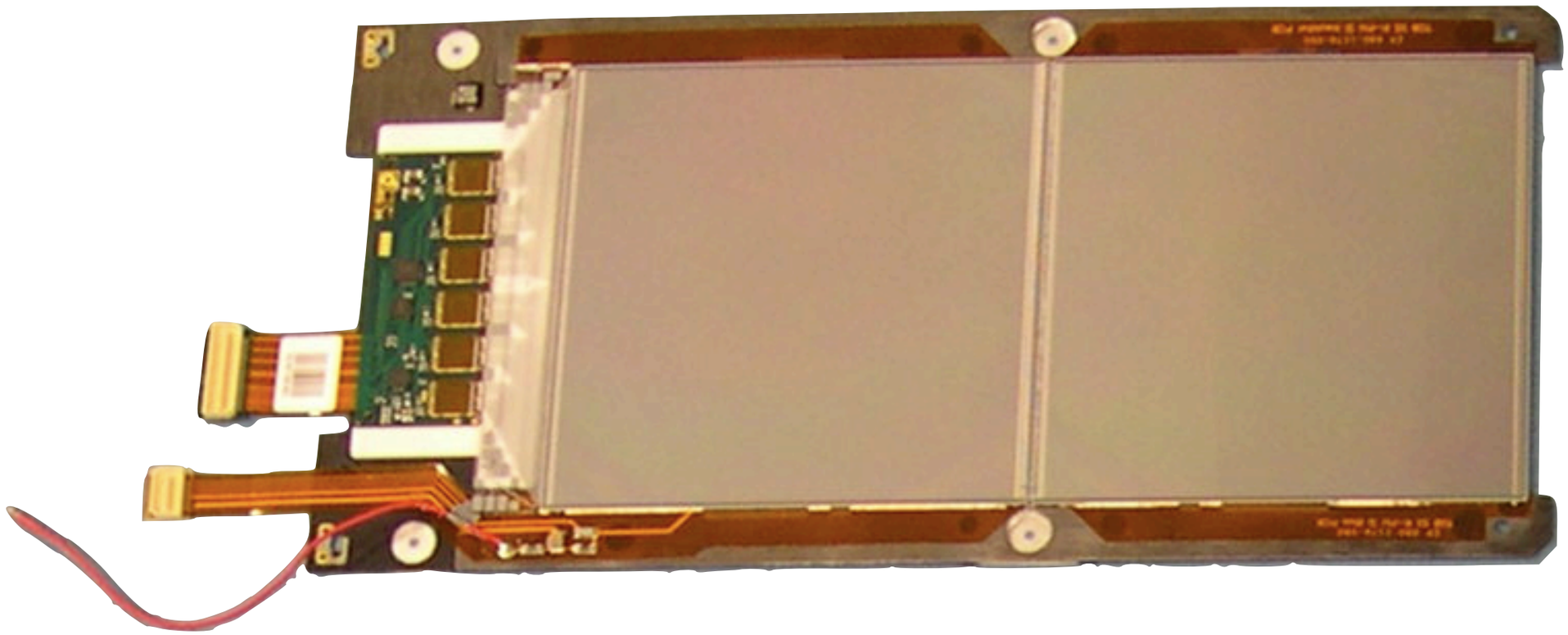
Our involvement:

- Optimize cooling scheme for new module design and CO2 cooling system
- Improve interface between pipes and modules

➡ based on FE calculations and may be prototyping



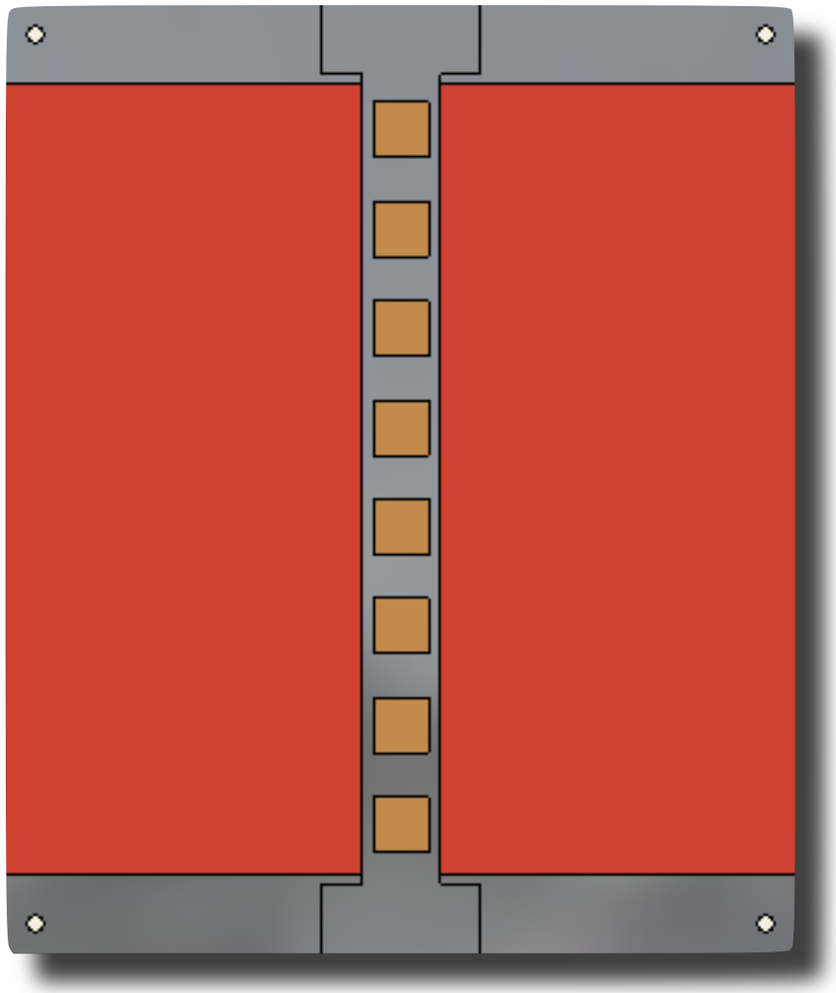
First Idea of a new Module



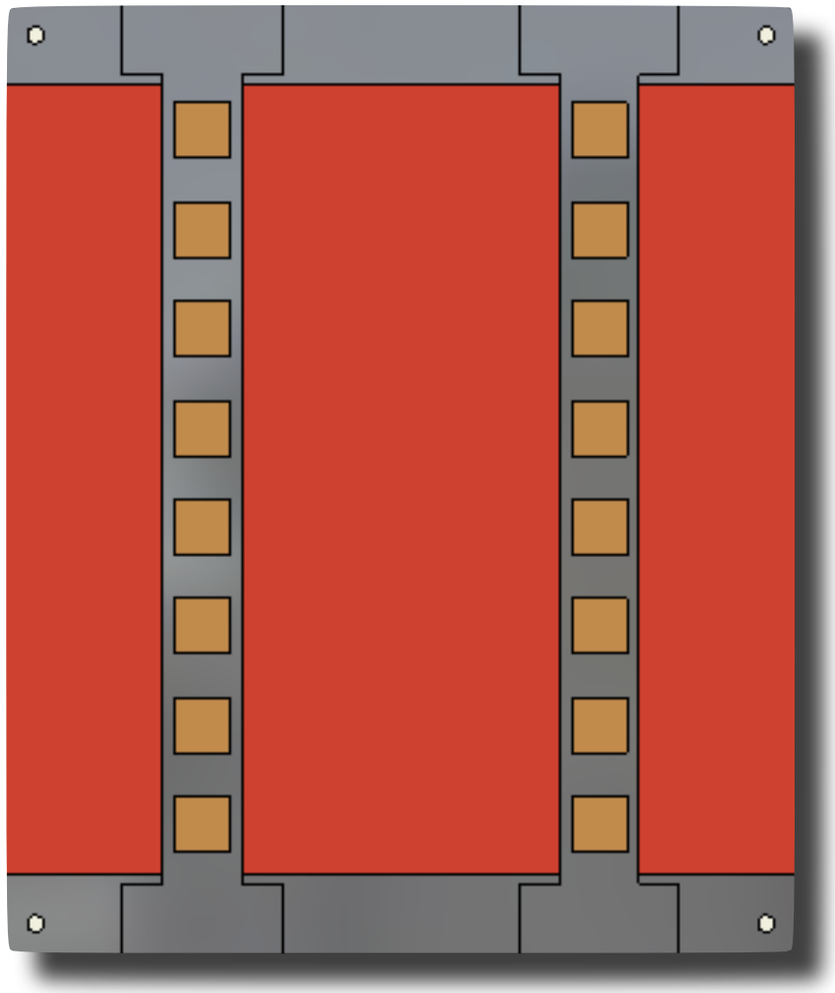
Current TOB R-Phi Module

- 2 sensors (100 mm x 100 mm)
- 20 cm strips
- ~ 125 um pitch

First Idea of a new Module

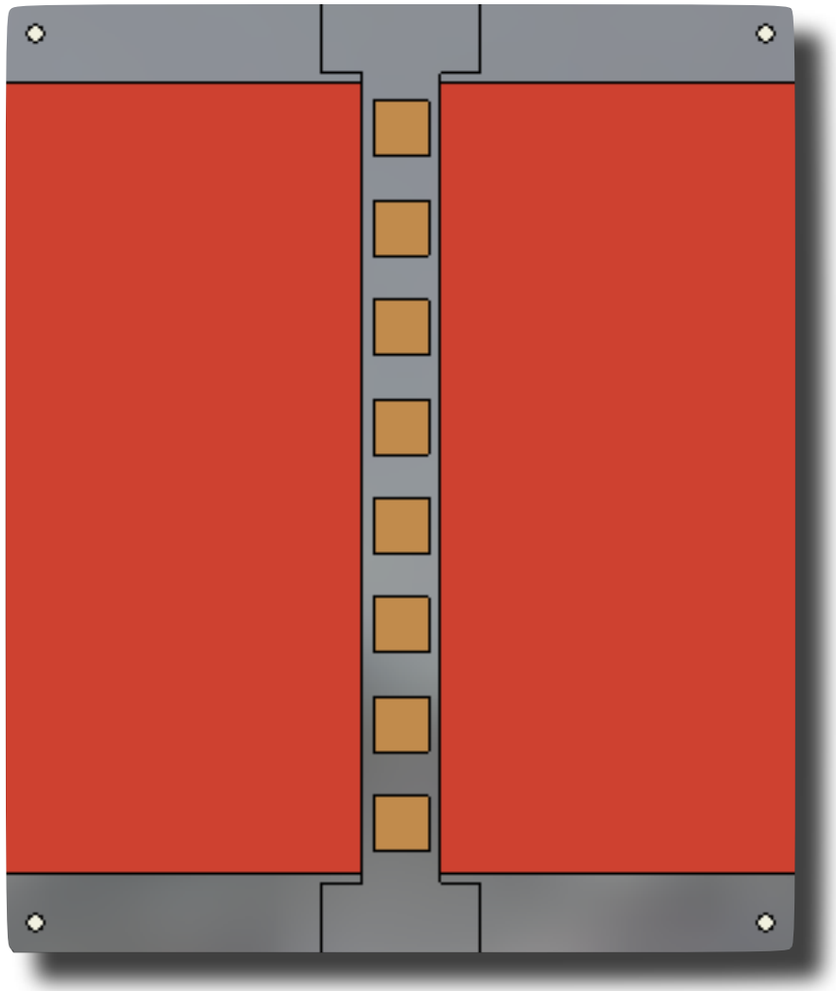


- 1 sensor (100 mm x 100 mm)
- 2 x 1024 x 5 cm strixels
- ~ 95 um pitch



- 1 sensor (100 mm x 100 mm)
- 4 x 1024 x 2.5 cm strixels
- ~ 95 um pitch

First Idea of a new Module



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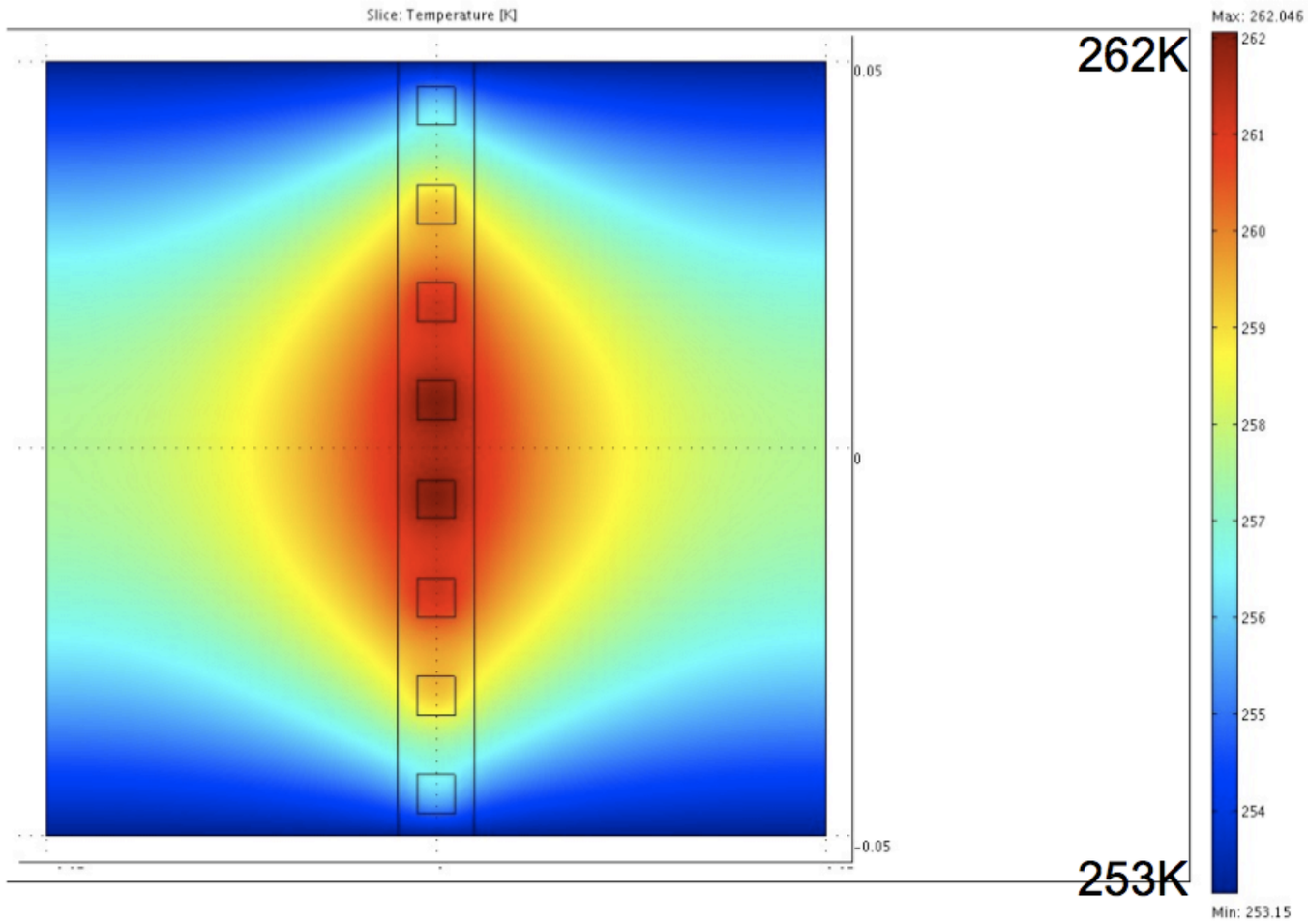

- Keep heat load on sensor as low as possible
- Find best way to cool with least amount of material
- New Materials?