

FCC Software news & Detector Geometry

FCChh Detector meeting

October 19, 2016
Joschka Lingemann
EP-SFT - CERN

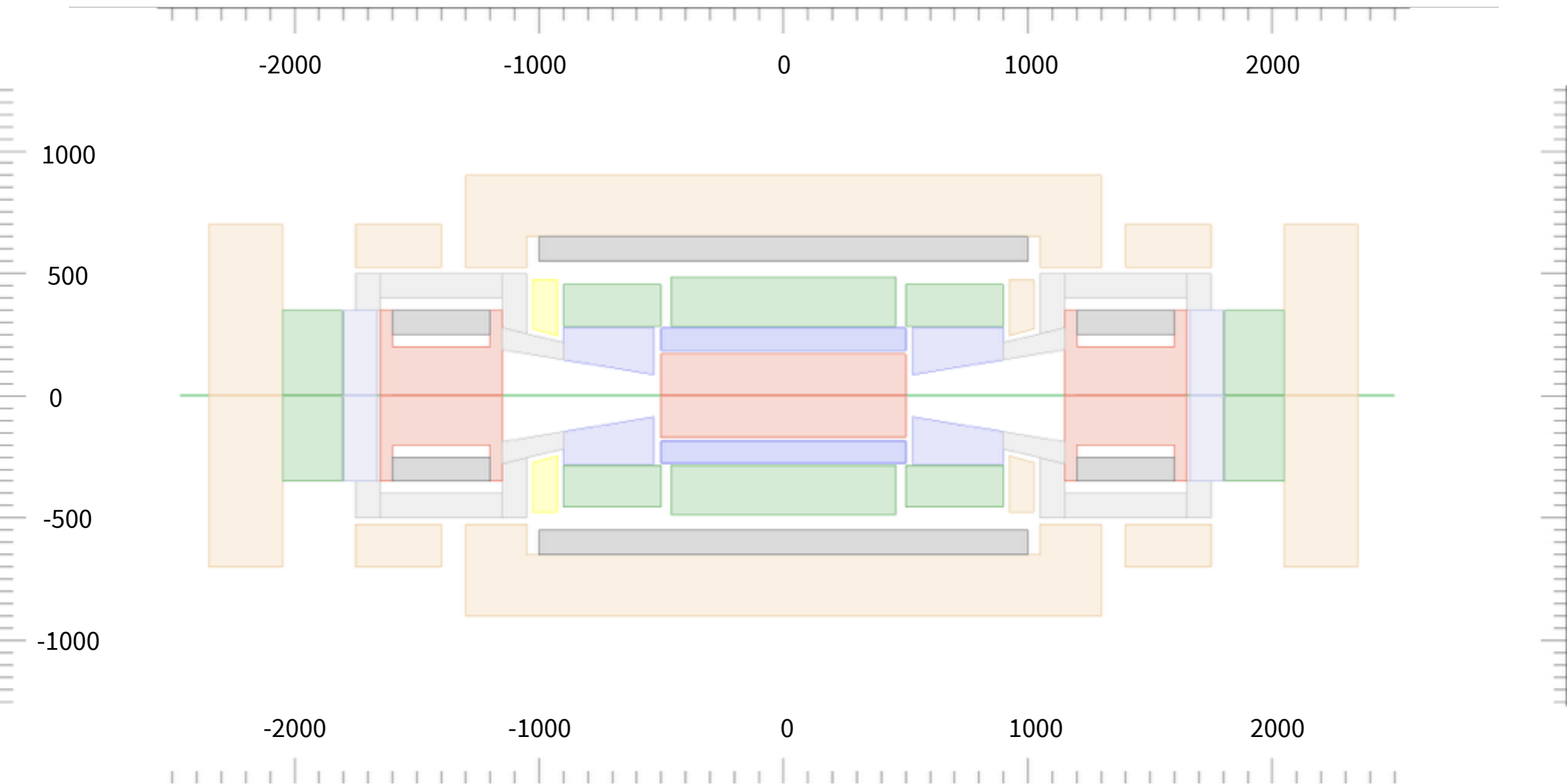
General Software News

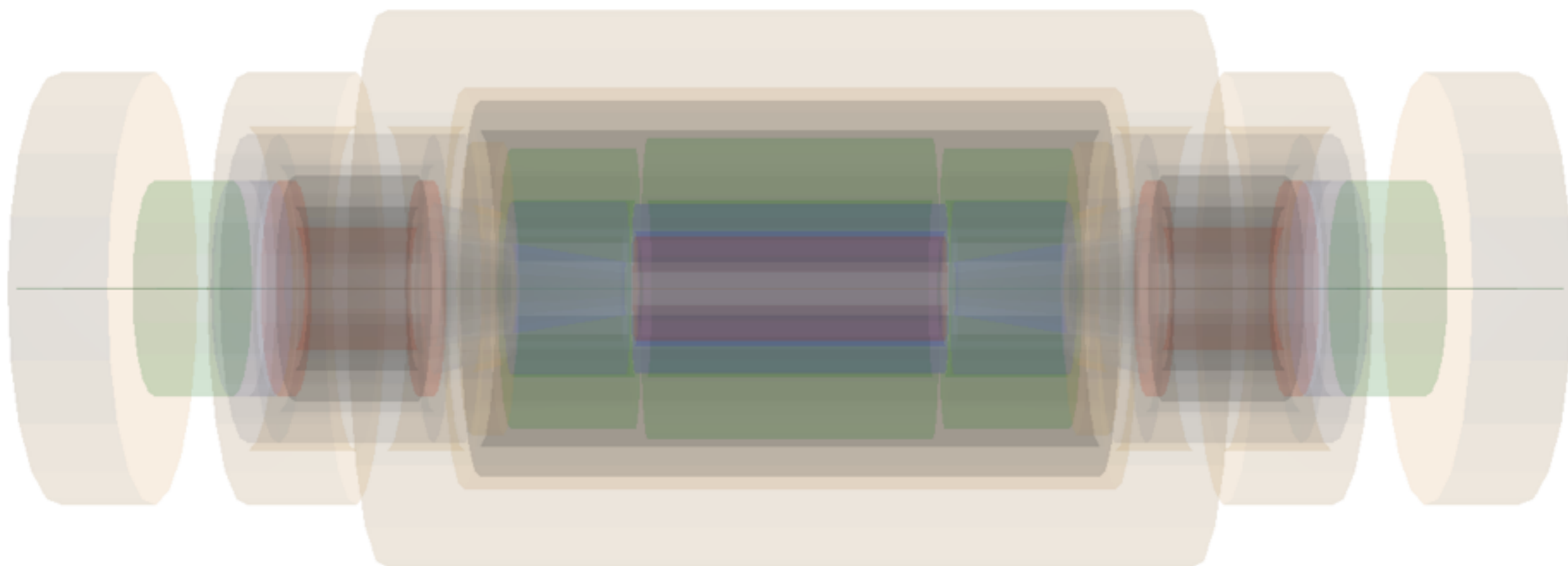
New software release in the next weeks:

- Most notable changes for users:
 - Reviewed the event data model
 - Simulation interfaces updated (Geant & Delphes)
- Take opportunity to update docs and tutorials
- Good starting point for new people
- Will be the **version (\pm patches) for Berlin studies**

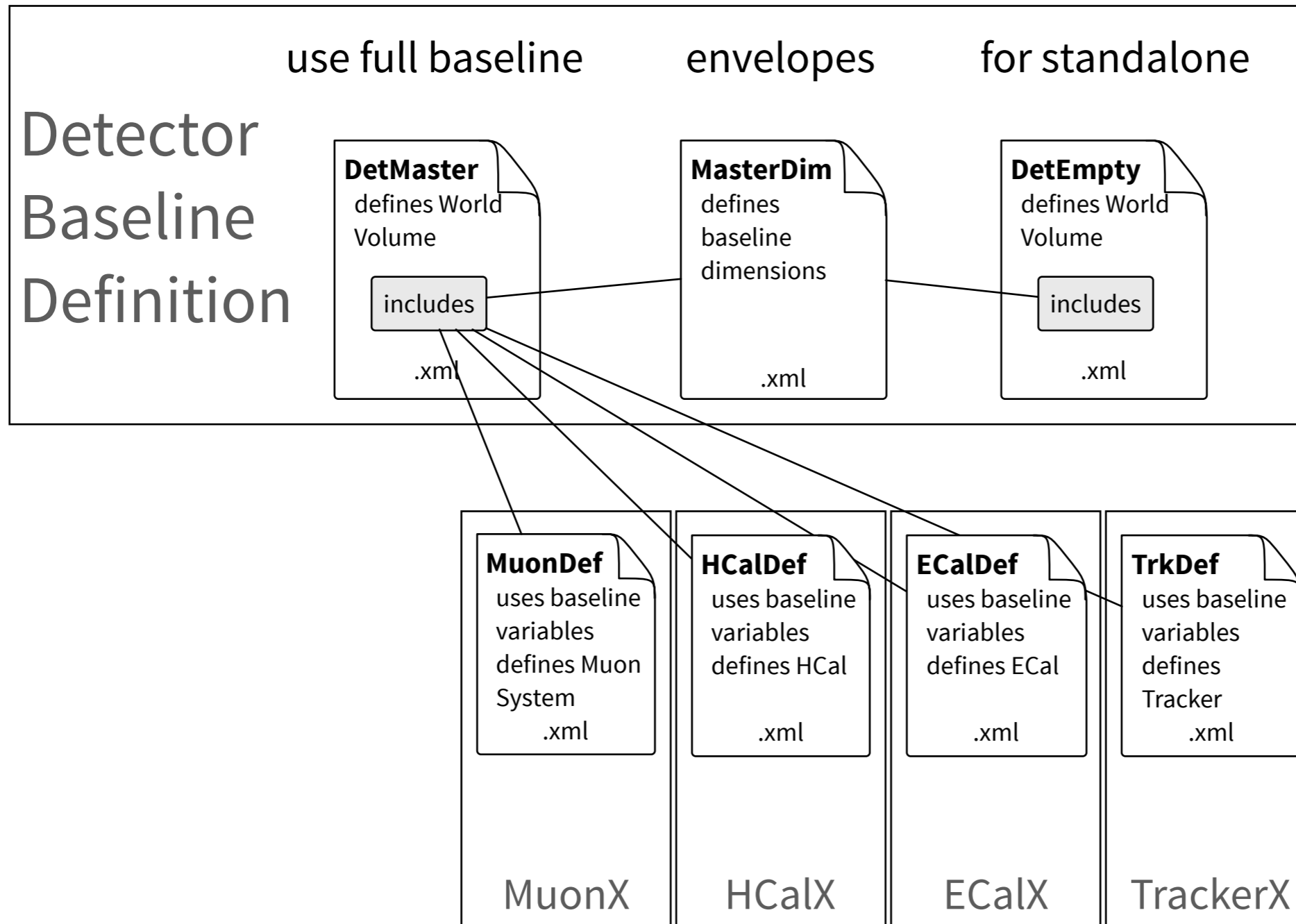
New technical student started recently: Grid / batch infrastructure

Geometry of Baseline 1: Rough envelopes



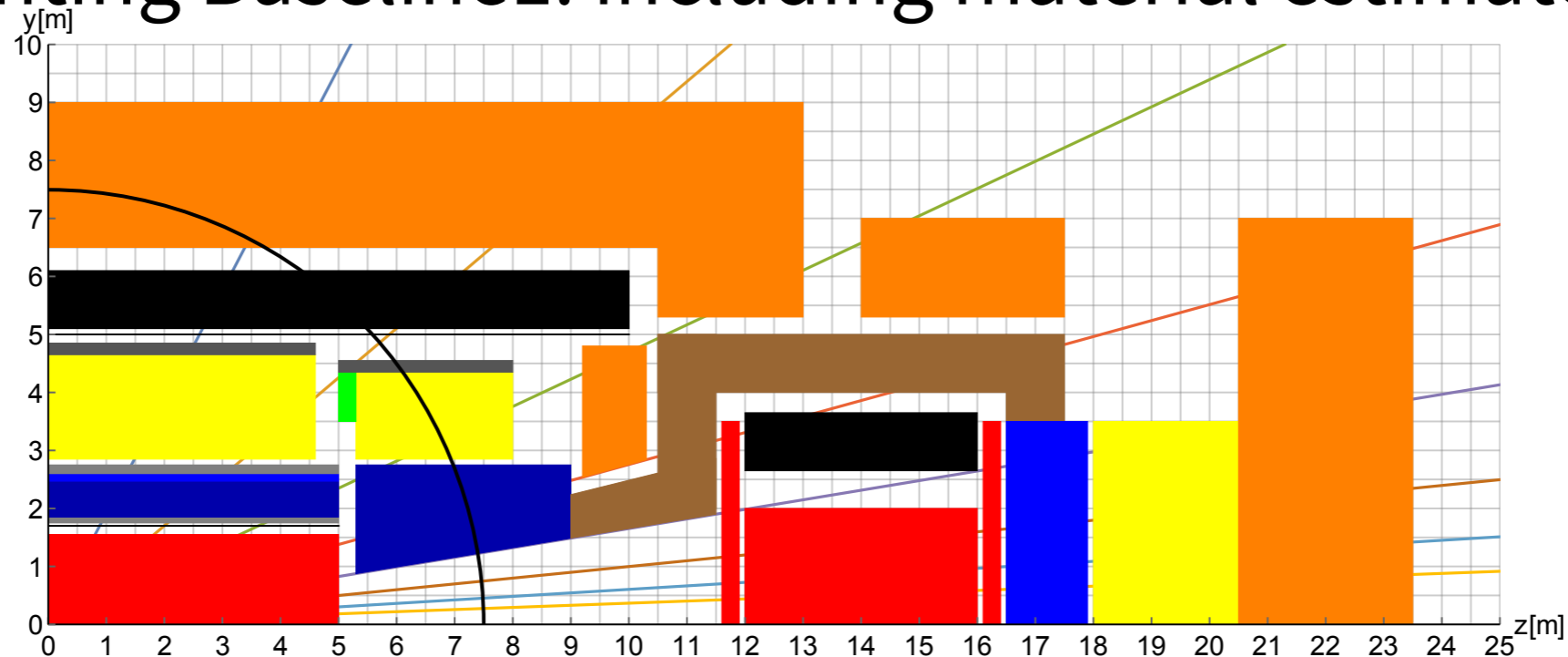


Easy to exchange sub-detectors that “fit the bill”



FCCh baseline geometry: Concrete sub-detectors

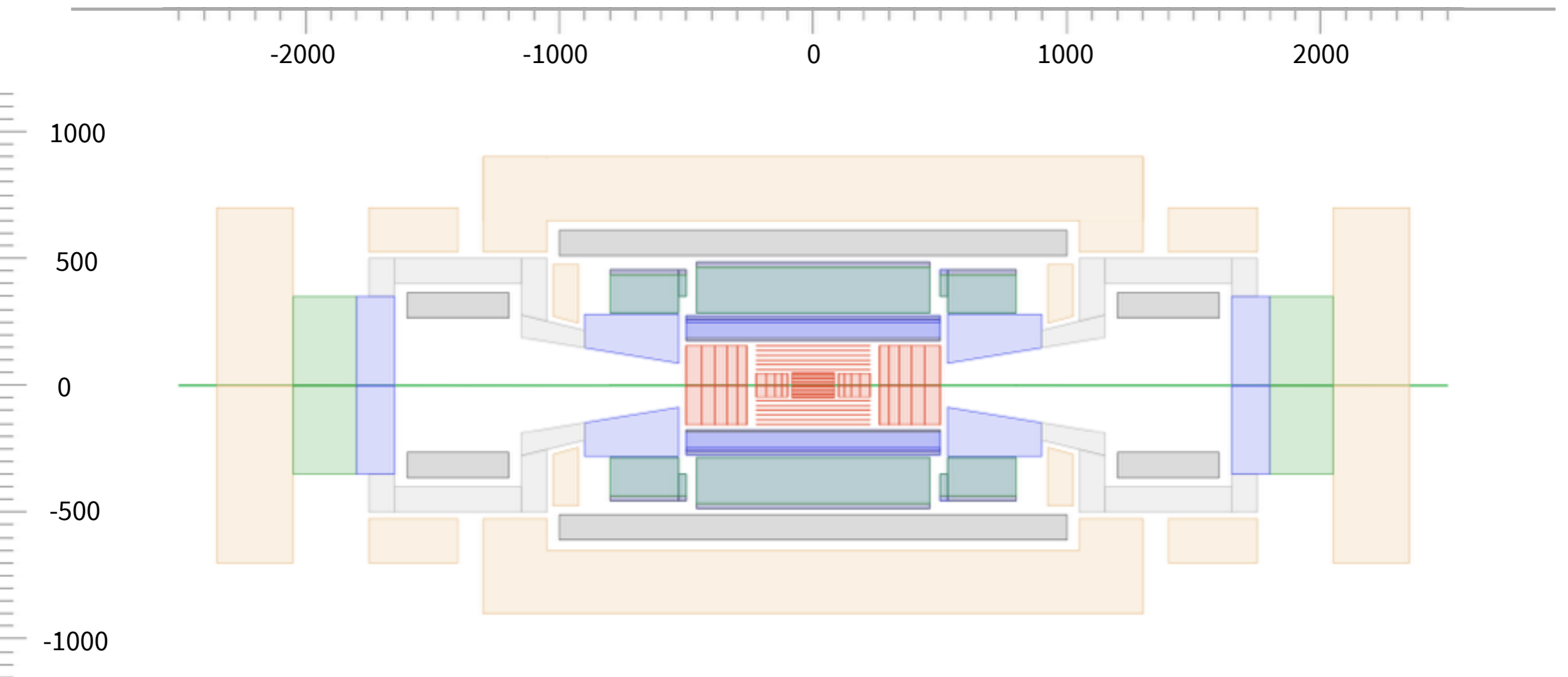
Implementing Baseline1: including material estimates



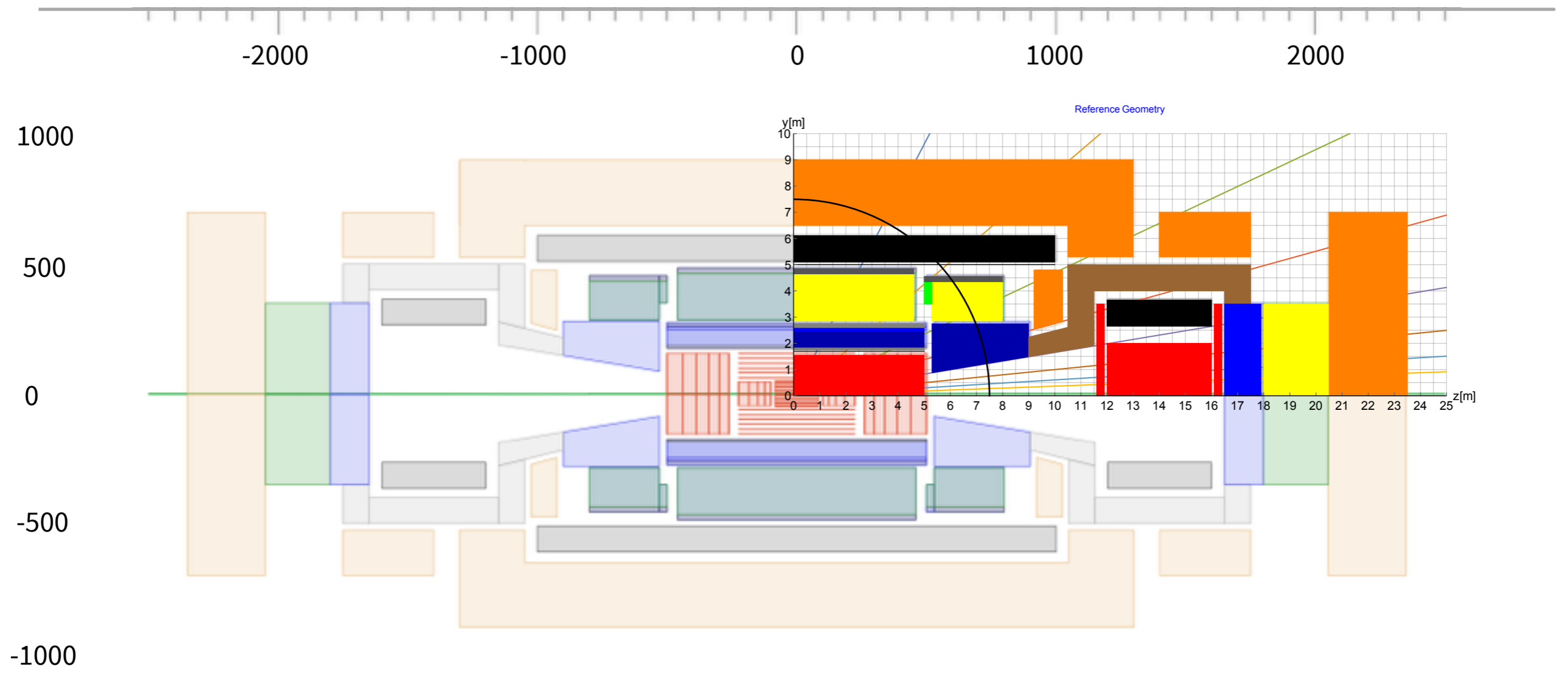
For baseline sub-detectors:

- TkLayout Tracker, LAr EMCal, Tile-HCal
- Average material to check material budget, etc.

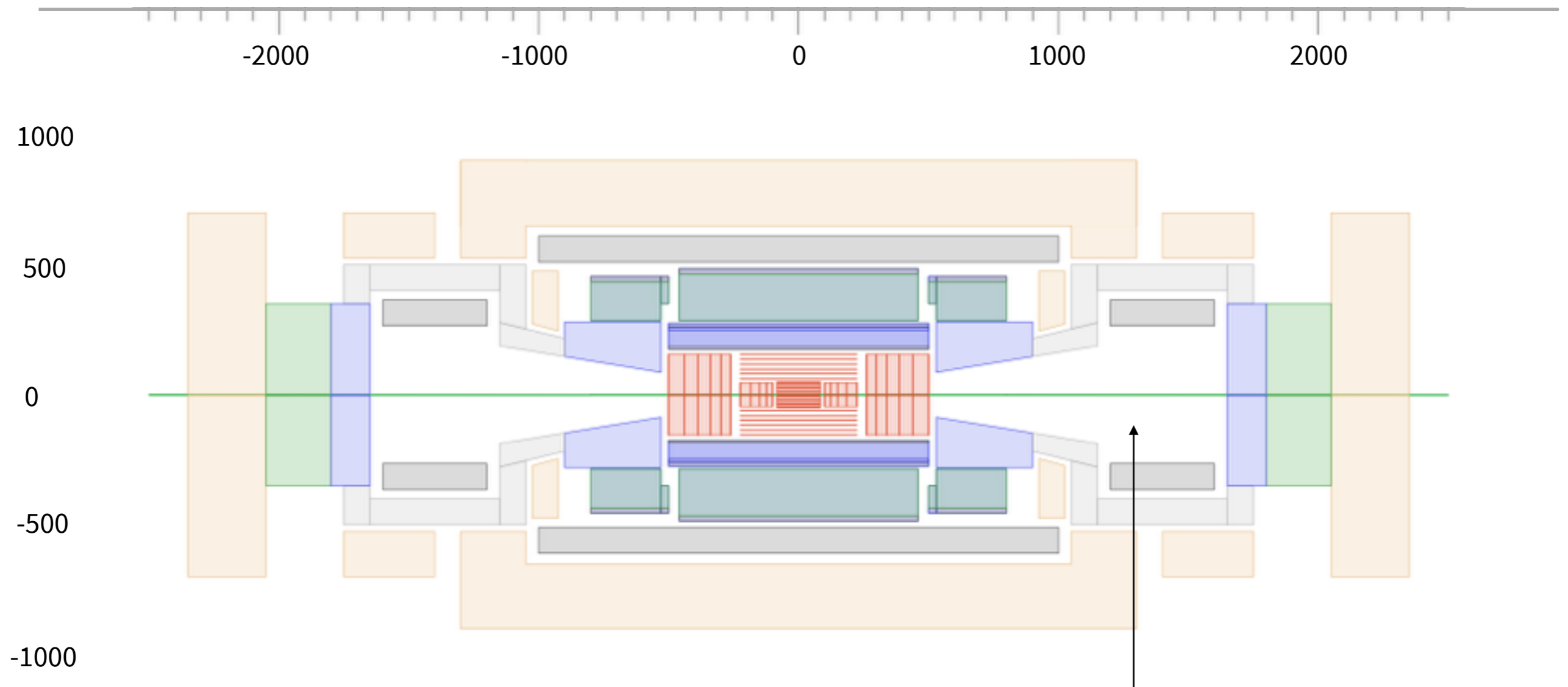
Detector Baseline 1: Material estimates



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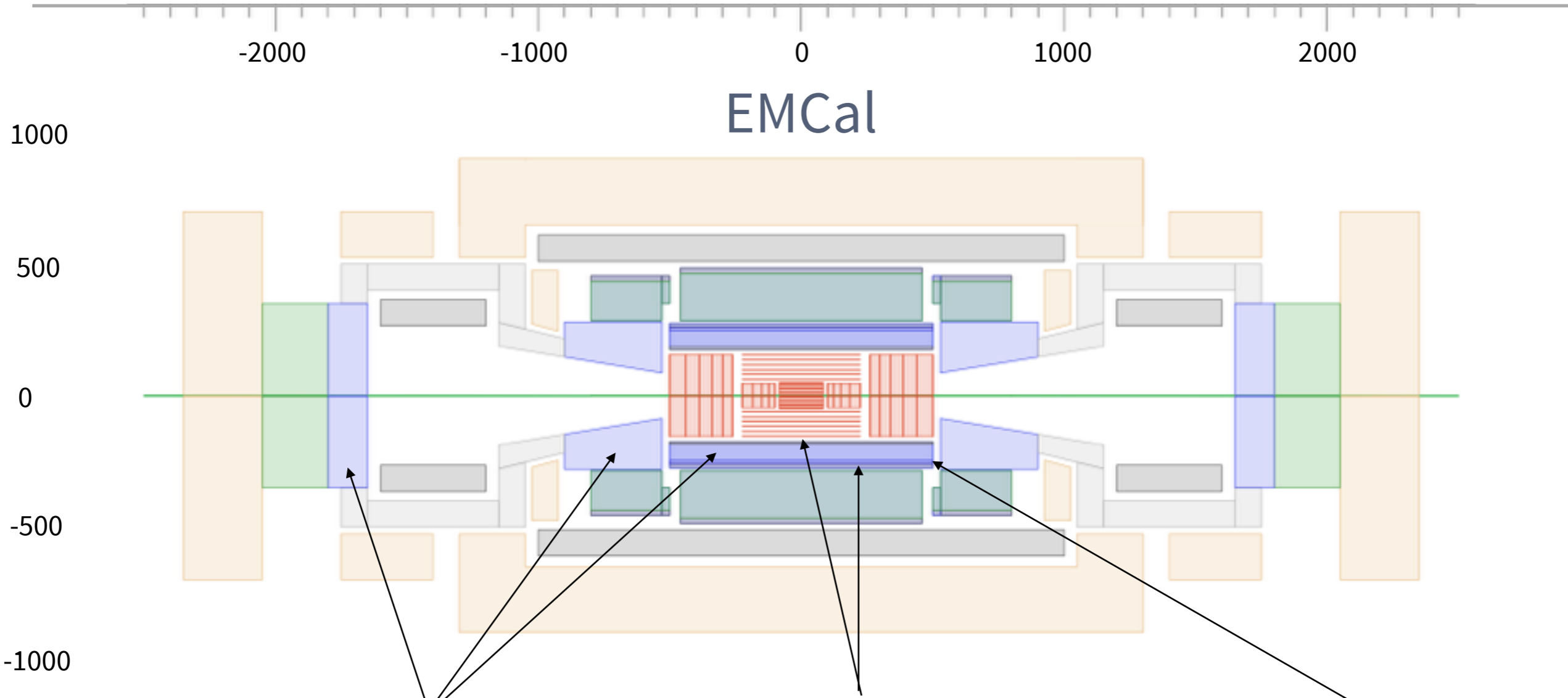


Central tracker layers / discs:

- 20% Si, 42% C, 2% Cu, 6% Al, 30% Polystyrene
- No forward system, yet

to be clarified

Detector Baseline 1: Material estimates



EMCal

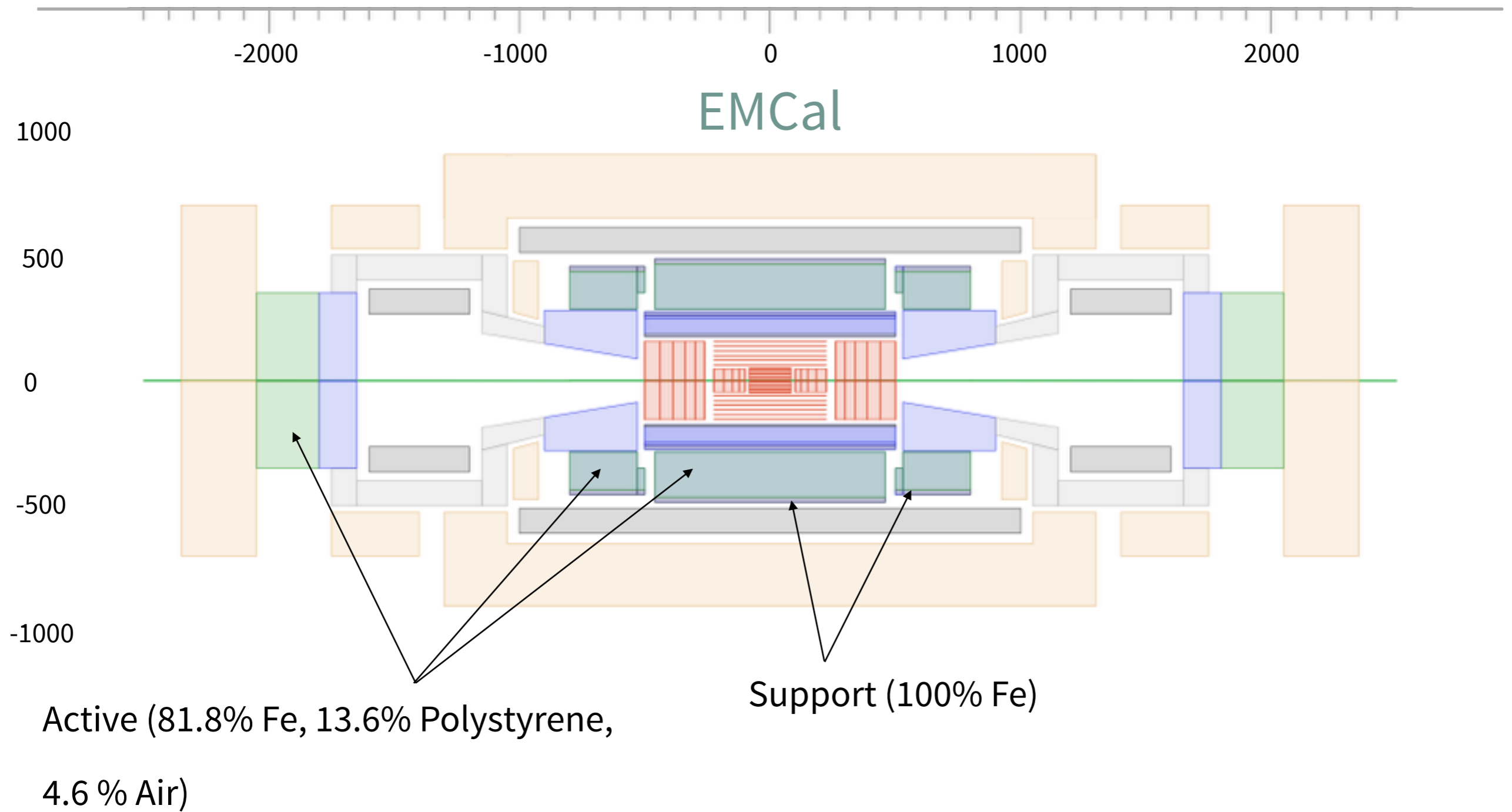
Cryostat (100% Al)

Pure LAr

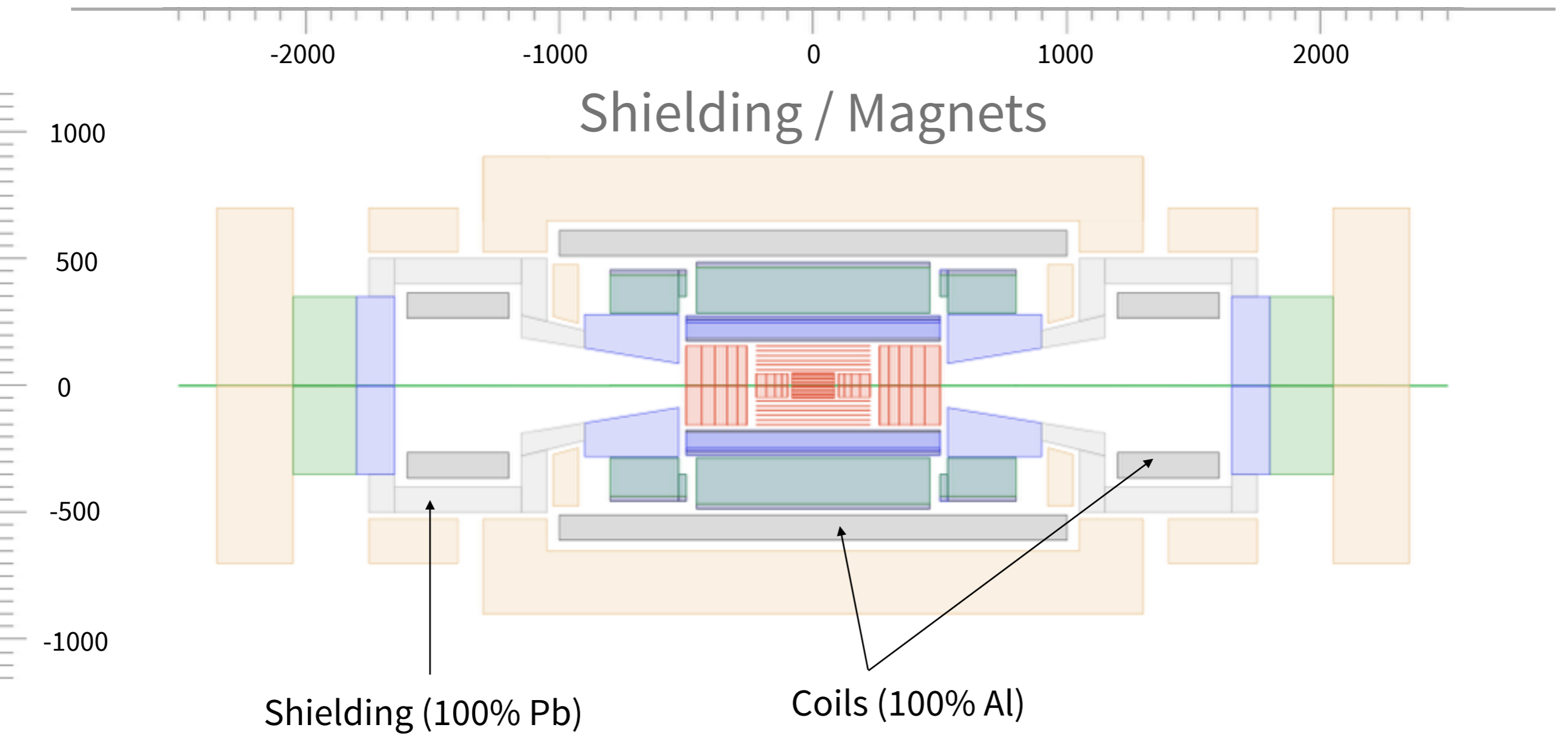
Active (64.8% LAr, 21.7% Pb, 7.2% Cu, 6.3%

Polysyrene)

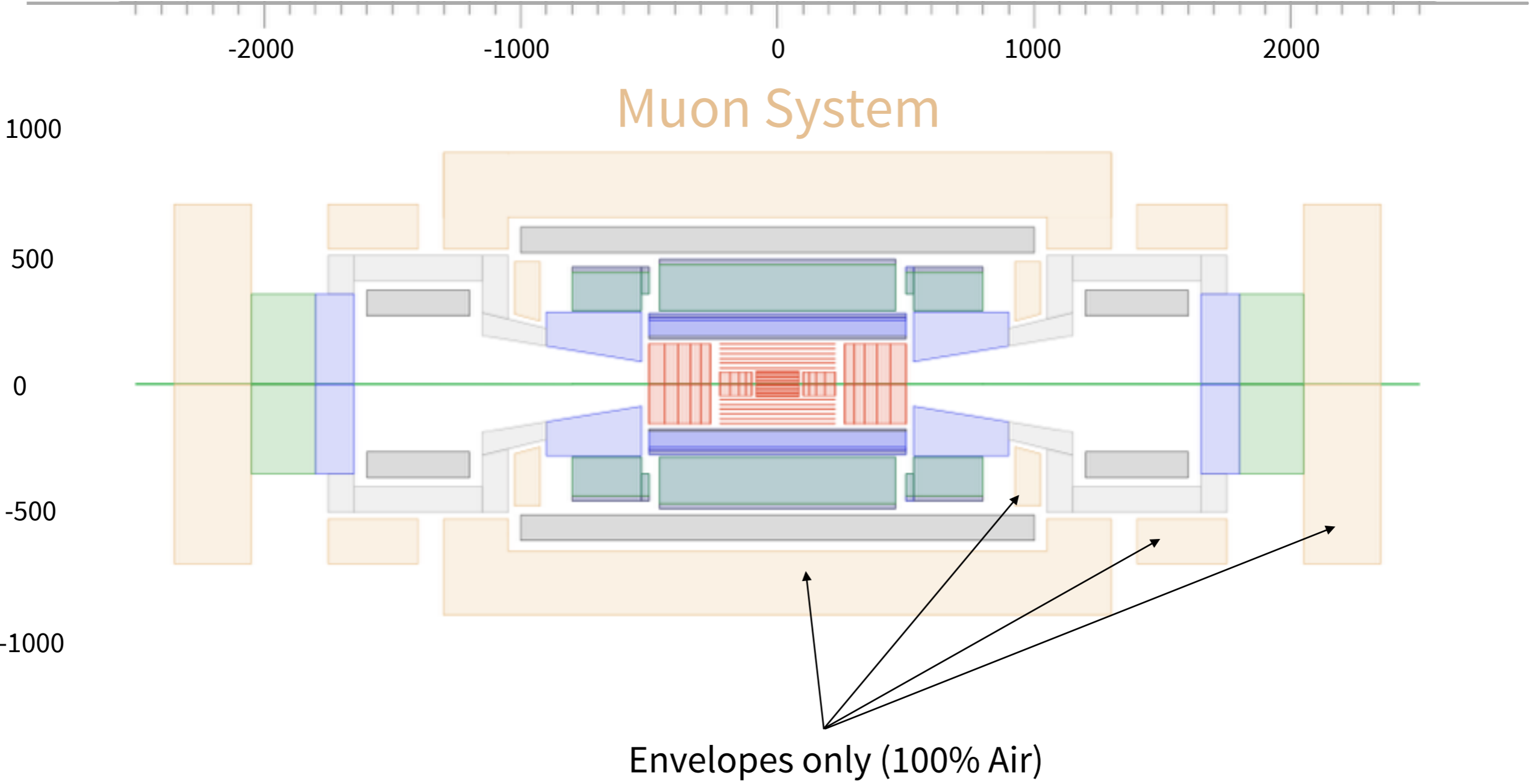
Detector Baseline 1: Material estimates



Detector Baseline 1: Material estimates



Detector Baseline 1: Material estimates



Conclusion

New software release being prepared

- Several updates that should improve usability

Updated detector geometry:

- Effective materials to verify material estimates
- Coarser envelopes for mix and match