

Update of DD4hep implementation of FCAL for ILD

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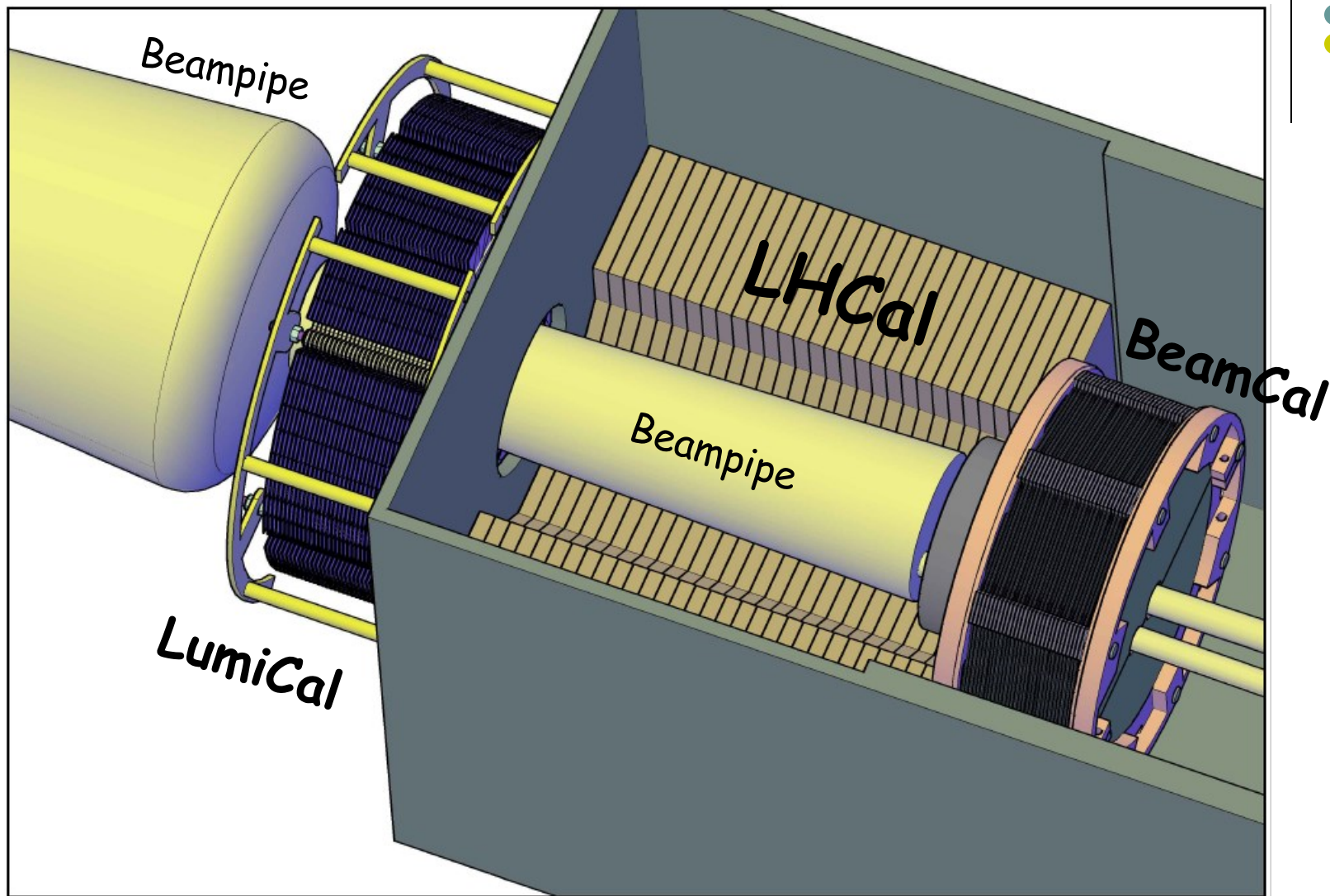
FCAL Workshop, 4th Sep. 2017, Belgrade



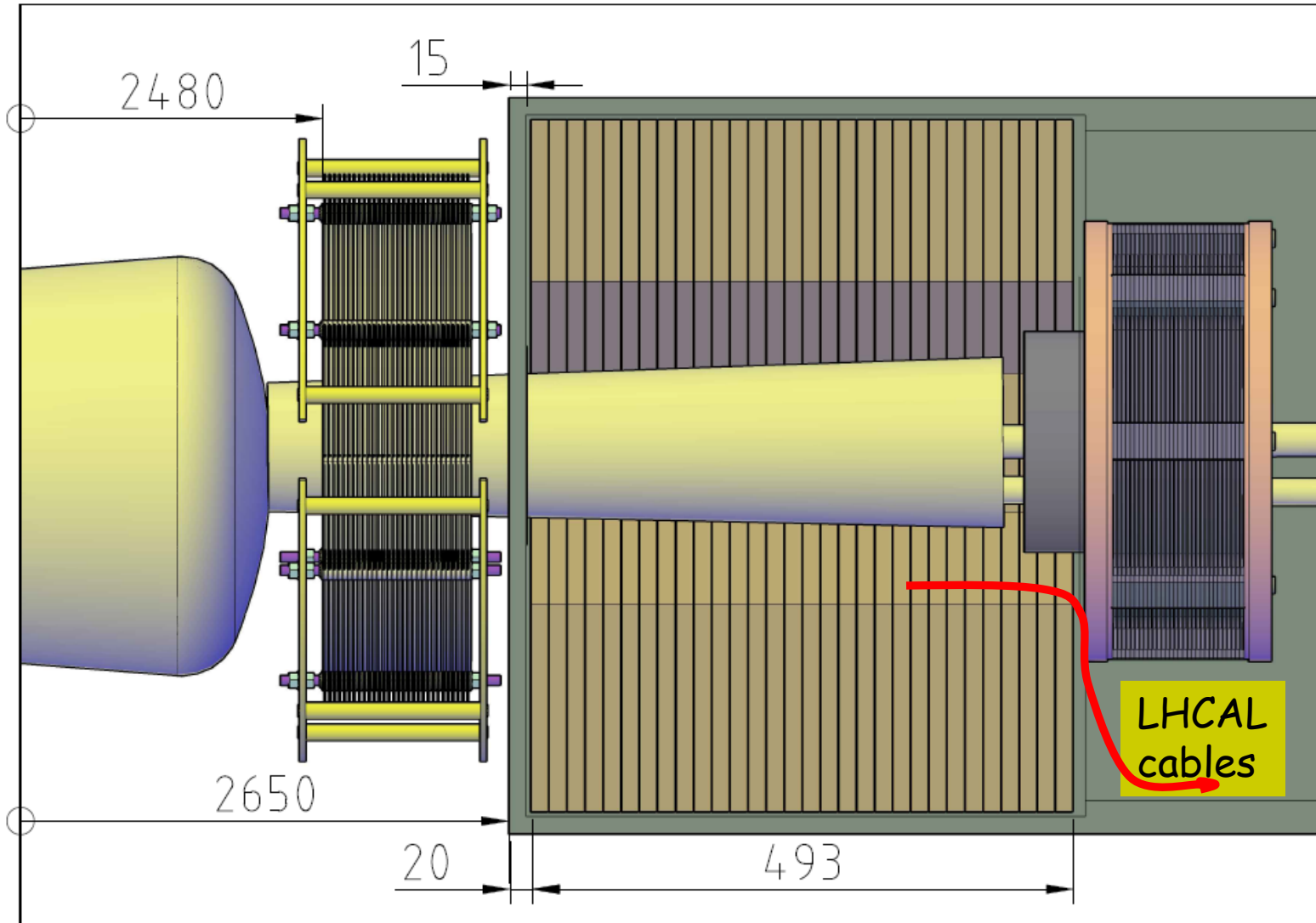
Motivation

- ILC operates with 2 detectors (ILD, SiD) in a push-pull configuration
- Until 3 years ago, both detectors designed with independent MDI constraints, in particular different distances of the final focus magnet to the IP (L^*).
- In September 2014, proposal to unify the L^* for both detectors.
 - Same beam optics tuning for both detectors.
 - Less risk. Shorter recovery time after detector exchange. Equal luminosity performance.
- ILD L^* goes from 4.4 m to 4.1 m

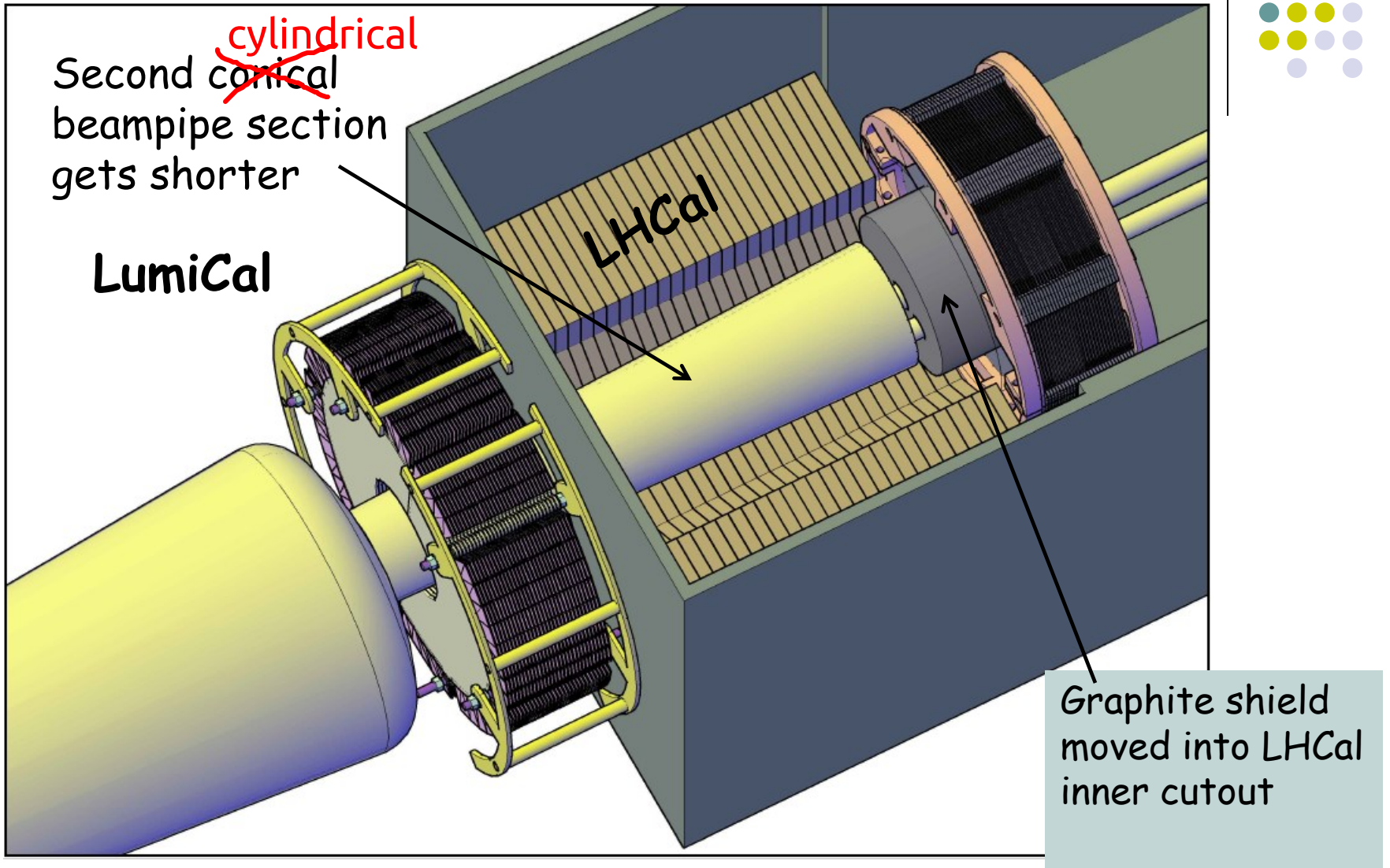
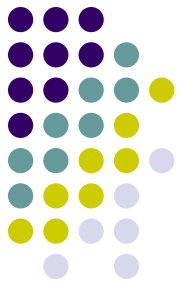
Forward region, reduced $L^* = 4.1\text{m}$ (1)



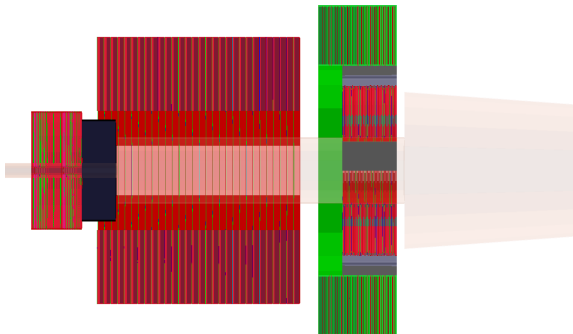
Forward region top view, reduced $L^*=4.1\text{m}$ (2)



Forward region, reduced $L^*=4.1\text{m}$ (3)



Clearance to beampipes



- BeamCal inner radius reduced from 20 to 17.8 mm to preserve angular coverage (to some extent).
- Overlap between BeamCal and beam tube 0.2 mm.

Solved by reducing the beampipe radius through BeamCal 18 \rightarrow 17 mm.
Sill somewhat tight clearances.

Summary

- FCAL detectors adapted to the new L^*
- Coordinated by Sergej. Implemented by Bogdan and SL.
- Beampipe radius corrected in the process.