Simulation, Analysis & Software

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New mailing list

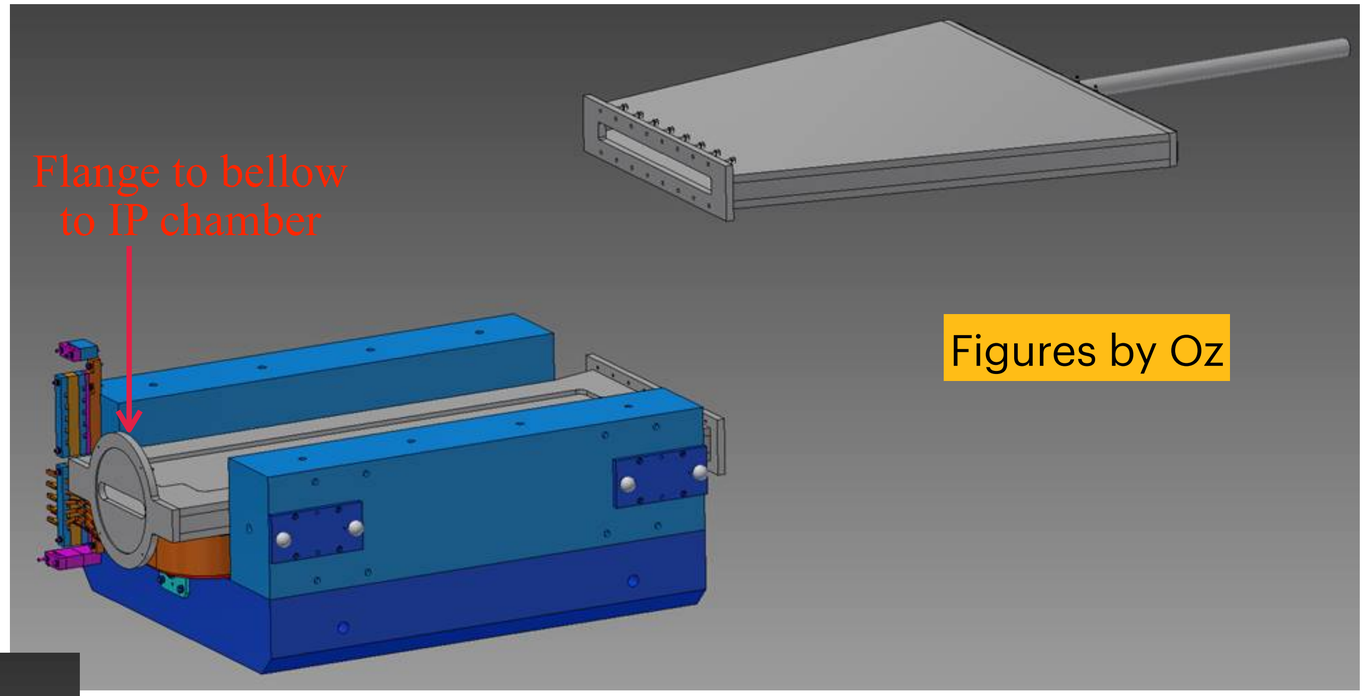
- There's a new group mailing list created by Matthew (thanks!)
- **Simulation, Analysis & Software (SAS)**: luxe-sas@desy.de
- Search for "luxe" in https://lists.desy.de/sympa
- When the group is approved by DESY's IT:
  - self-subscribe yourself there with your favorite email address
- All related announcements will be sent there

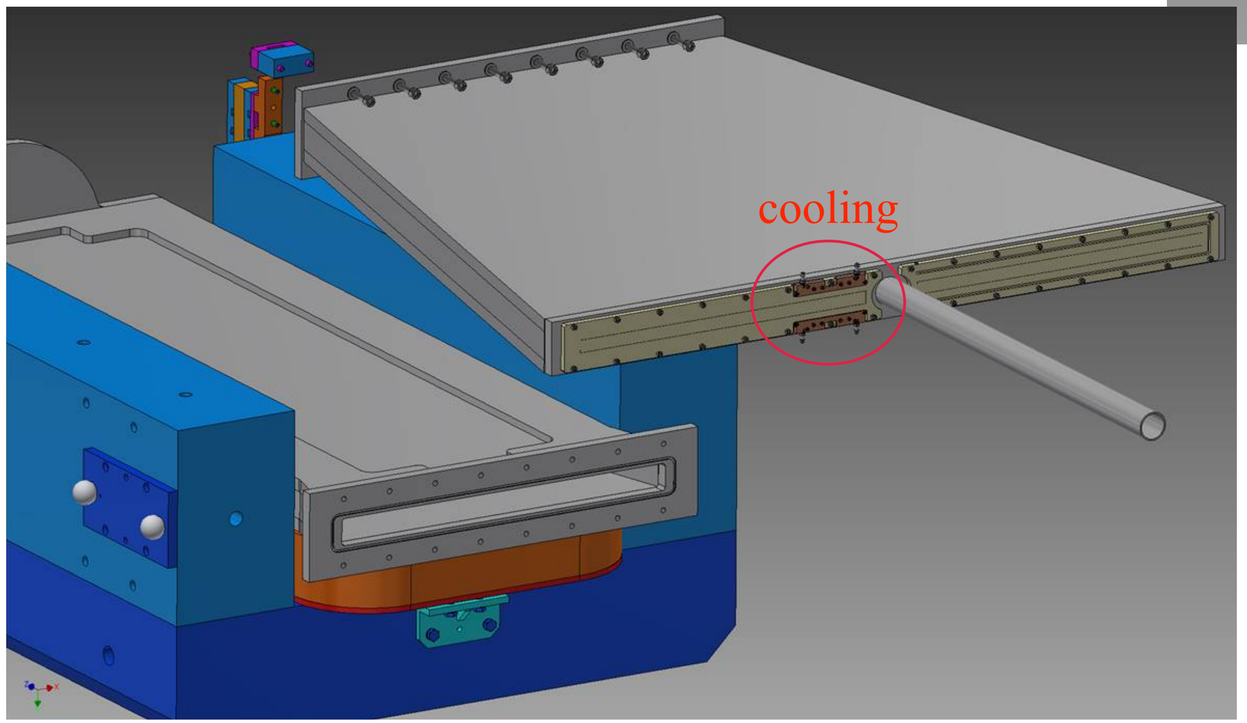
Reminder of ongoing issues

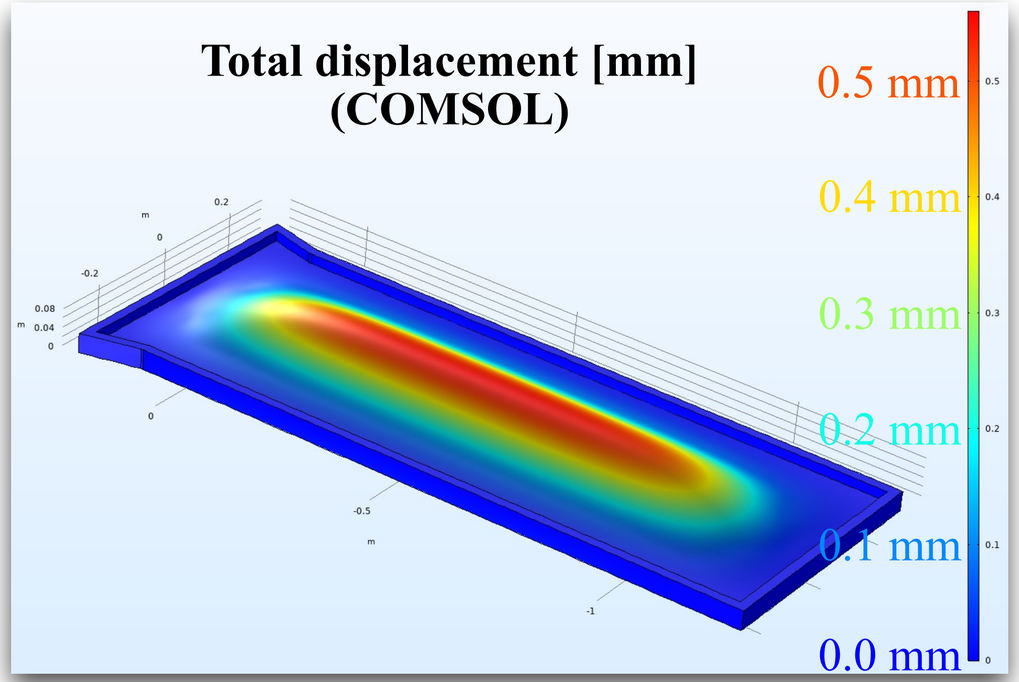
- FLUKA radiation map
- Large (simplified) background-only samples
- Flat signal samples for B-field predictions
- Large stats for low ξ signals
- New bits in the model (Sasha keeps updating it)
- Kickoff NPOD studies with the full LUXE setup
  - Background from the dump/environment
  - pass the MadGraph signal through the model
  - Beate has suggested that we can use H1's (HERA) old EM+Had spaghetti calorimeter (SpaCal):
    - $R = 1.6$ m, $d = 30_{\mathrm{EM}} + 30_{\mathrm{Had}}$ cm, $\sigma_E = 7\,\%/\sqrt{E}$, $\sigma_t \sim 0.4$ ns, $\sigma_r \sim 4$ mm
    - GEANT3 model exists - can we convert it to GEANT4?

New chambers

- Magnet can be opened (easier!)
- Stainless steel (with machining+welding)
  - Much more heavy
  - Less deformation due to vacuum
- Window still made of Aluminum
- Added cooling pieces







News from Sasha & Maryna

- Completed simulating ~0.4 BX of the bkg with updated geometry:
  - shielding material was changed to iron,
  - additional shielding implemented for ECal and tracker,
  - added tracker electronics crate with sensitive PCBs
  - added two new XFEL infrastructure components.
  - did a rough check that there are recording of particles in those new components, but did not analyze it fully yet

- There are new 267 (out of 1010) processed BXs for $\xi = 1$ in:
  - /nfs/dust/luxe/group/MCProduction/Signal/g4/ptarmigan-v0.8.1/e-laser/phase0/gpc/1.0
  - Maryna has analyzed the other low ξ (0.15, 0.3, 0.5, 0.7) to update the plot for back-scattering calorimeter with higher statistics (~1000 BX)

News from Kyle

- Discussed with Louis the technicalities for running FLUKA on the DESY cluster
- There is now data for $2*10^6$ primary electrons
- With repeated application, this could be feasibly brought up to $1*10^7$ within a few days