

News

20.03.2024

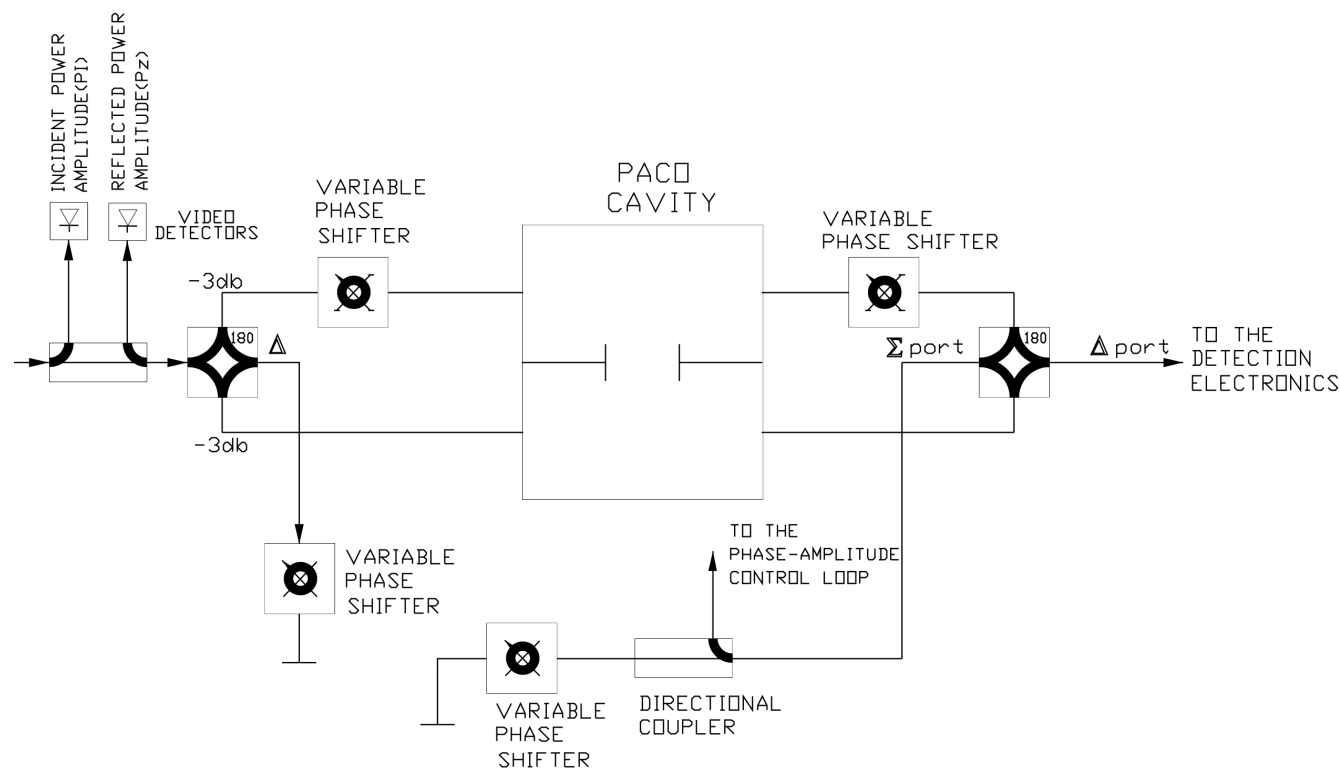
Low level RF

Better understanding of the PACO setup and the role of the “input magic-tee”

Discussion how to do the RF (over)coupling to maximise the signal

Louise had to leave on a very short notice, back in ~2y. Need urgently replacement, looking for PhD candidates (financing available)

We should soon have an exchange also with FNAL on the LLRF system and collaborate on some form



Current plans for cryogenic tests at DESY

Measurement of vibrational spectrum in an insert

μ TCA and SEL test at 1.3 GHz with a single-cell cavity

(Q3/4) Test μ TCA System at 2.1 GHz with MAGO cavity

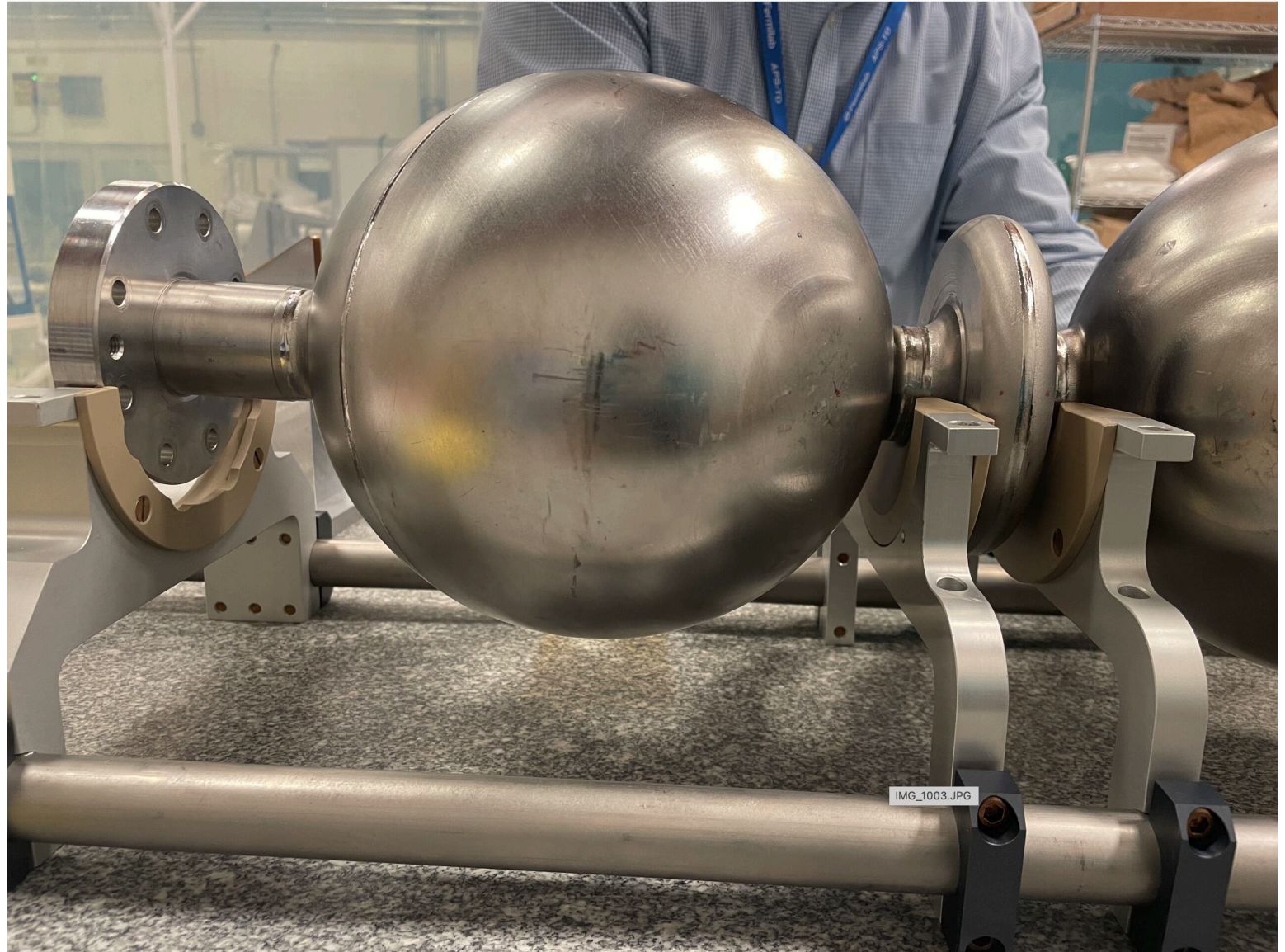
- Spectrum measurement, QvE, testing DOOCS Server, fake signal injection, etc.
- Original plan was also to use first CSI setup, it is not clear that this is possible without Louise

News from Fermilab

Cavity now in support structure

It seems that the cavity bending reduced (from 3 to 1 cm) compared to the measurements at DESY

Could be due to the delicate tuning cell during transport

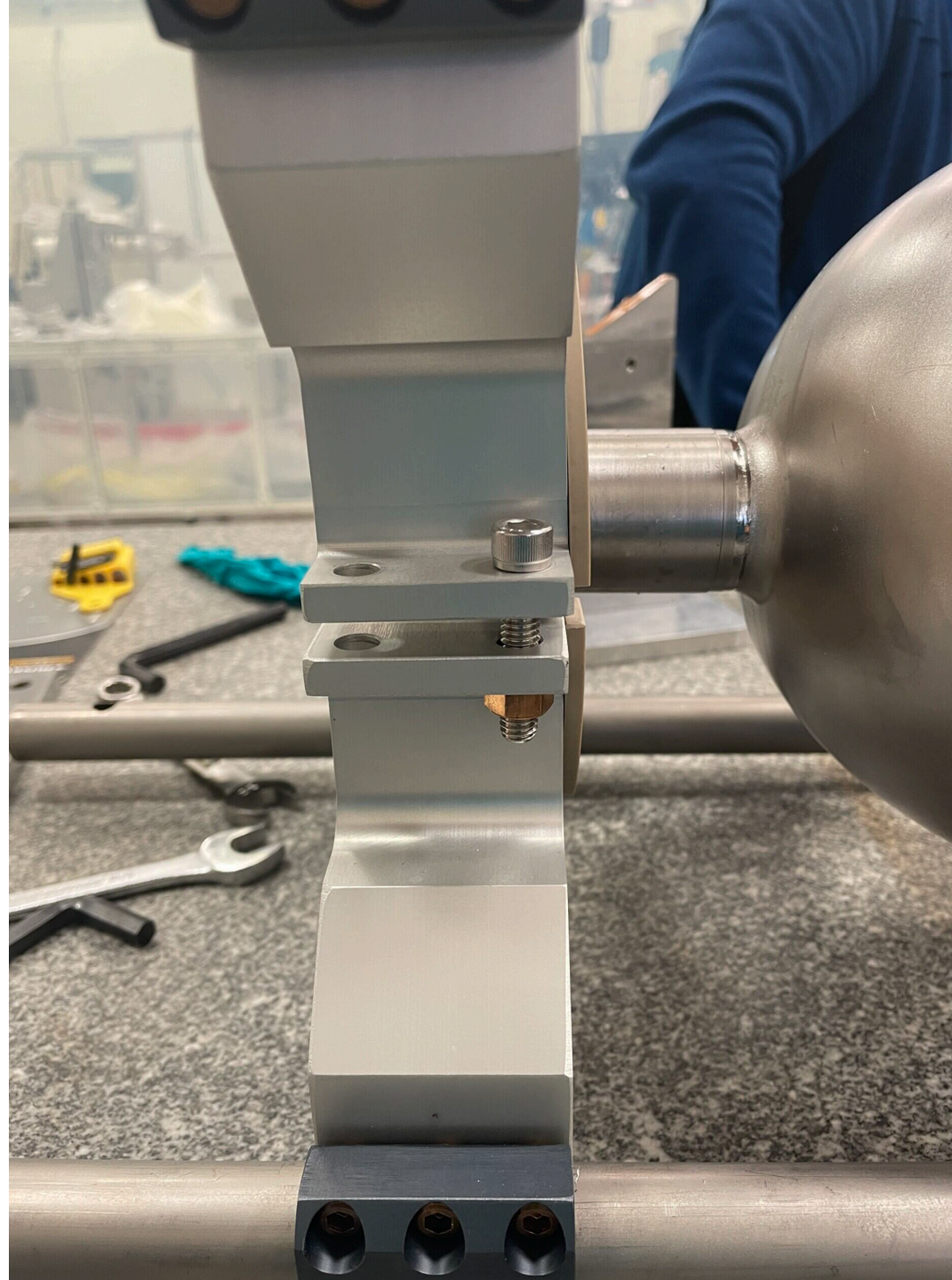


News from Fermilab

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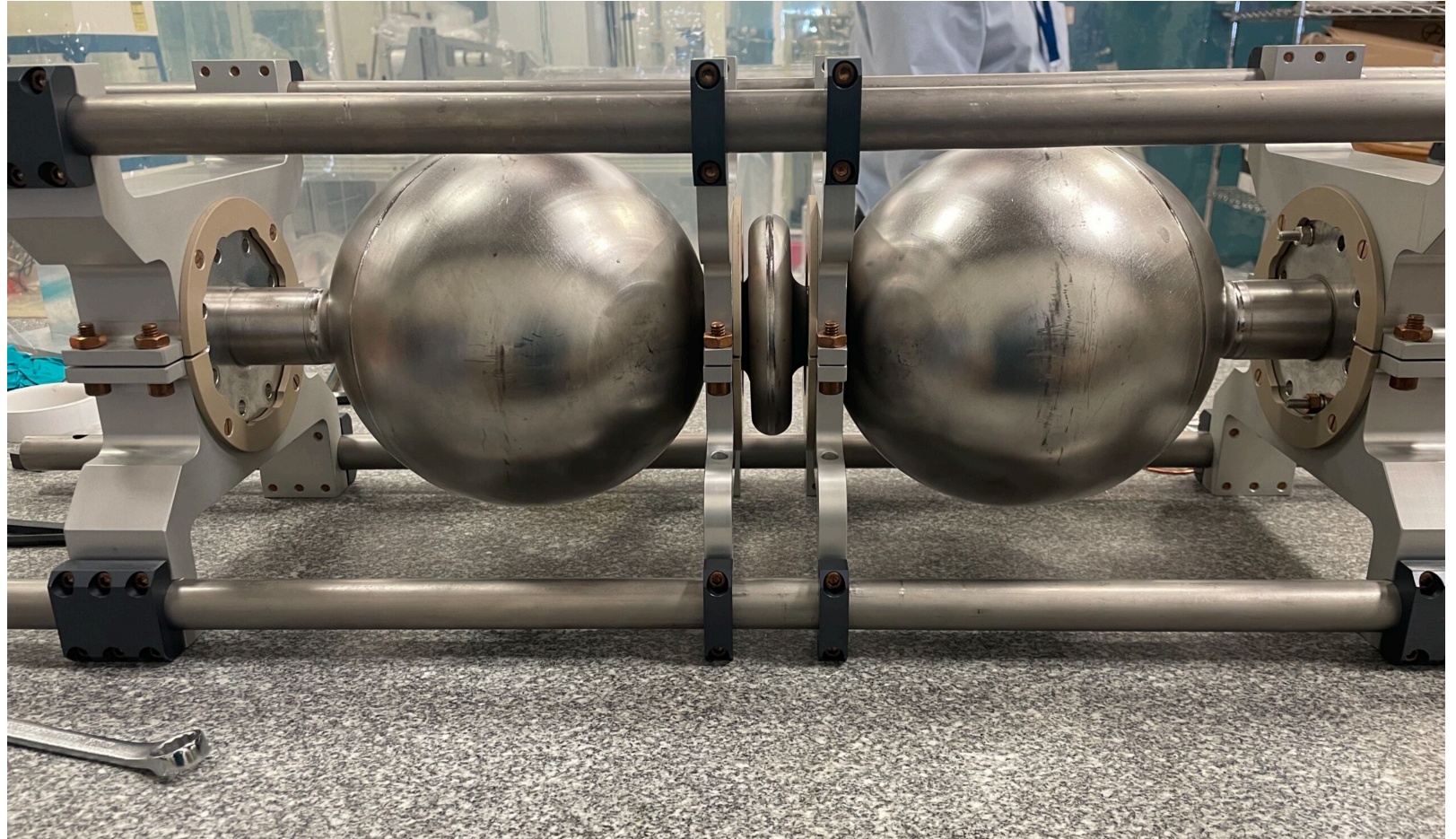


News from Fermilab

**When forced into the frame, cell
frequency change of 40 kHz**

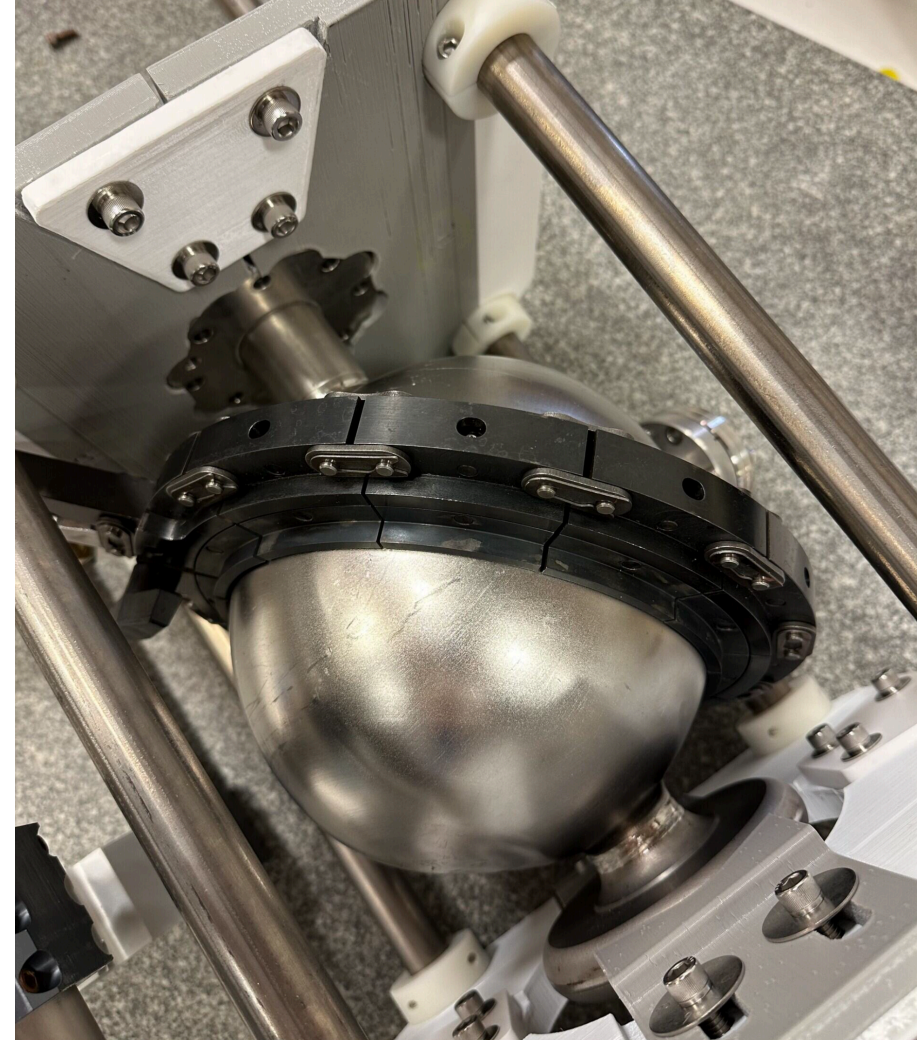
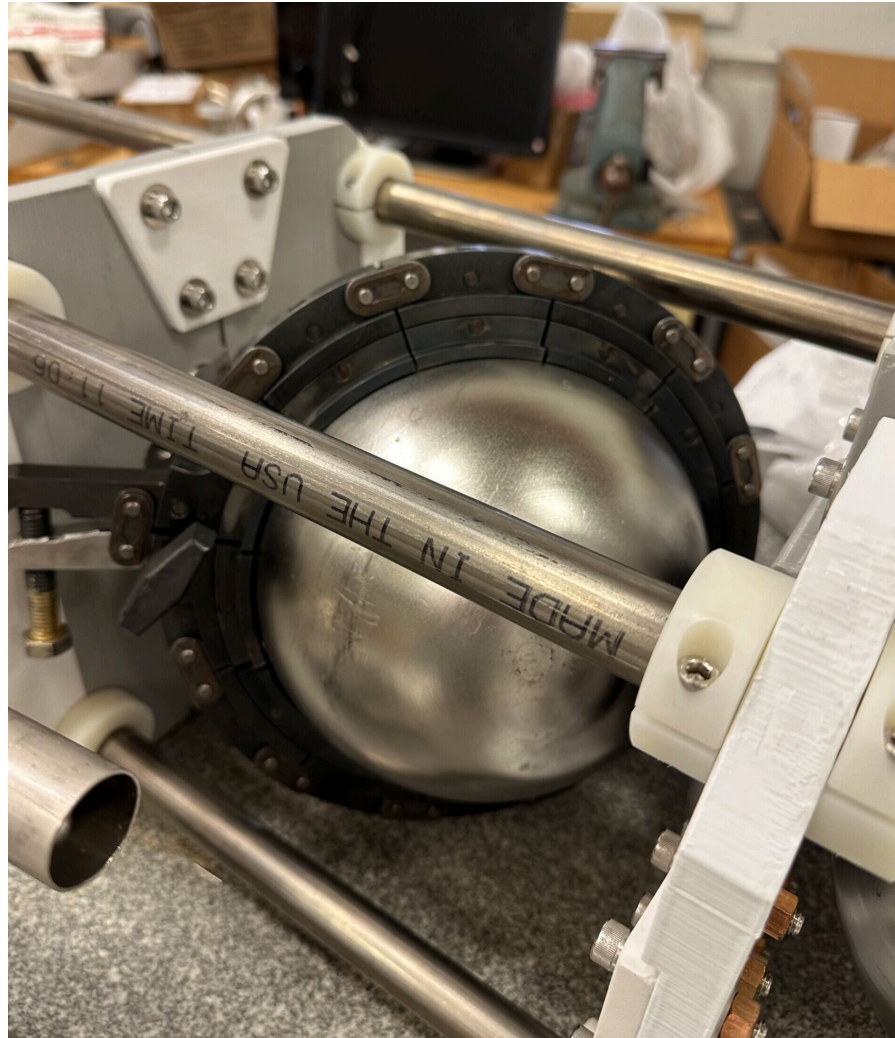
**Plan is still to do later a plastic
tuning**

Proceed now with the BCP

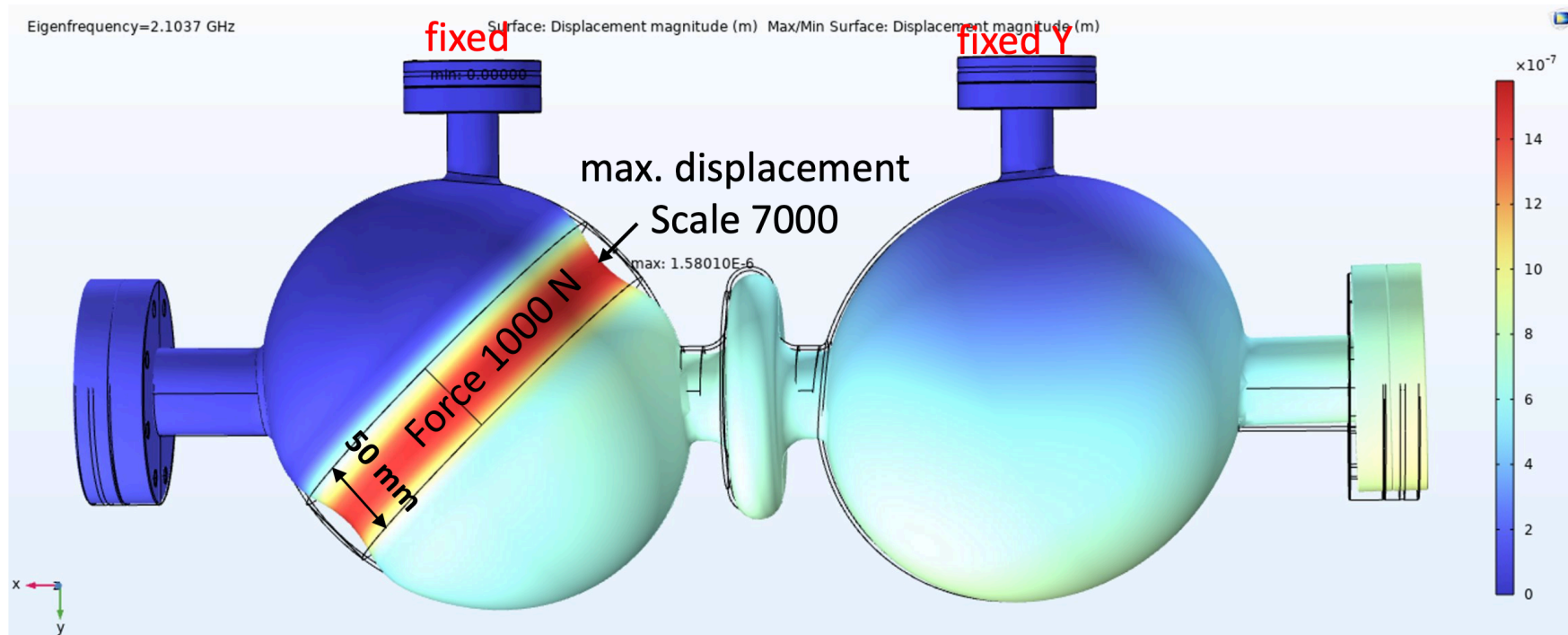


Chain tuner

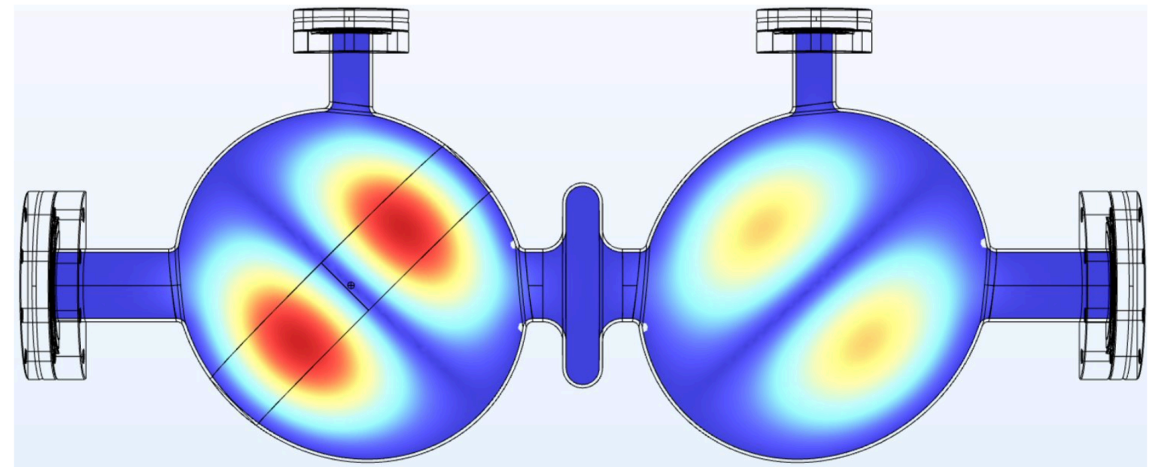
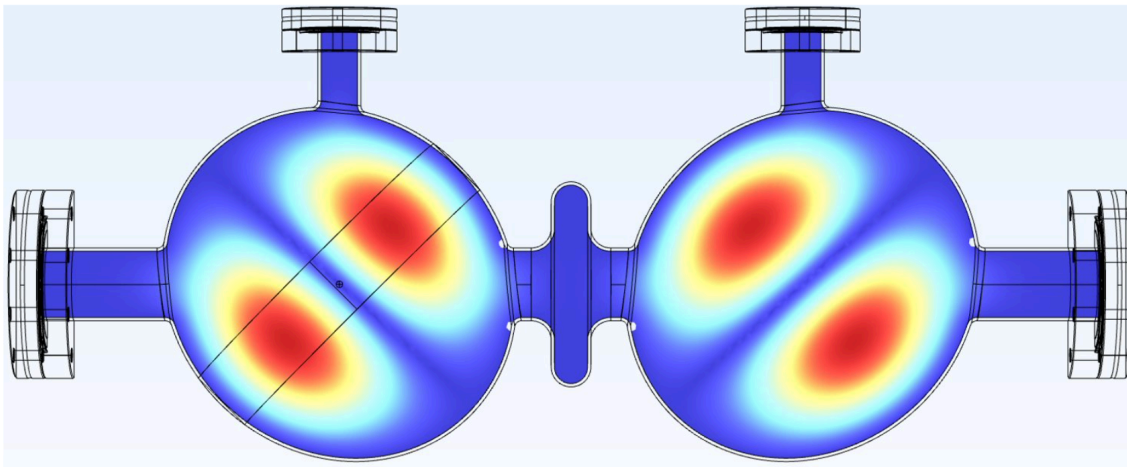
With a test, cavity frequency was changed by 10 kHz



Simulations done by Ivan Gonin and Timergali Khabiboulline, Fermilab



$\sim 4.2 \text{ kHz}/\mu\text{m}$



Proposal for a full day MAGO workshop

Get all contributors on different aspects together to get an overview of every component, understand the overall status and identify critical items

- Review of sources and discuss possible optimised setups (broadband vs. scanning, integration time, etc.)
- Status of LLRF system
- Discuss and plan cryogenic characterisation of the MAGO cavity at DESY
- Choices of data acquisition and data analysis
- Cryostat development and calculation for mechanical dissipation in He (when would it be useful to approach folks from the Gersemi cryostat?)
- Suspension system design (intertwined with cryostat). We hope Oliver Gerberding (UHH) would contribute with a PhD student
- How to optimise for a new cavity (how to do it for non-spherical cells)?
- What would we gain in the future from several cavities: in the same cryostat (parallel, orthogonal), with another cryostat on the campus, from far away locations

Would you consider such a full-day brainstorming and review useful? Would you make the effort to reserve a day for this? Proposal 3. July (or 26. June)?