

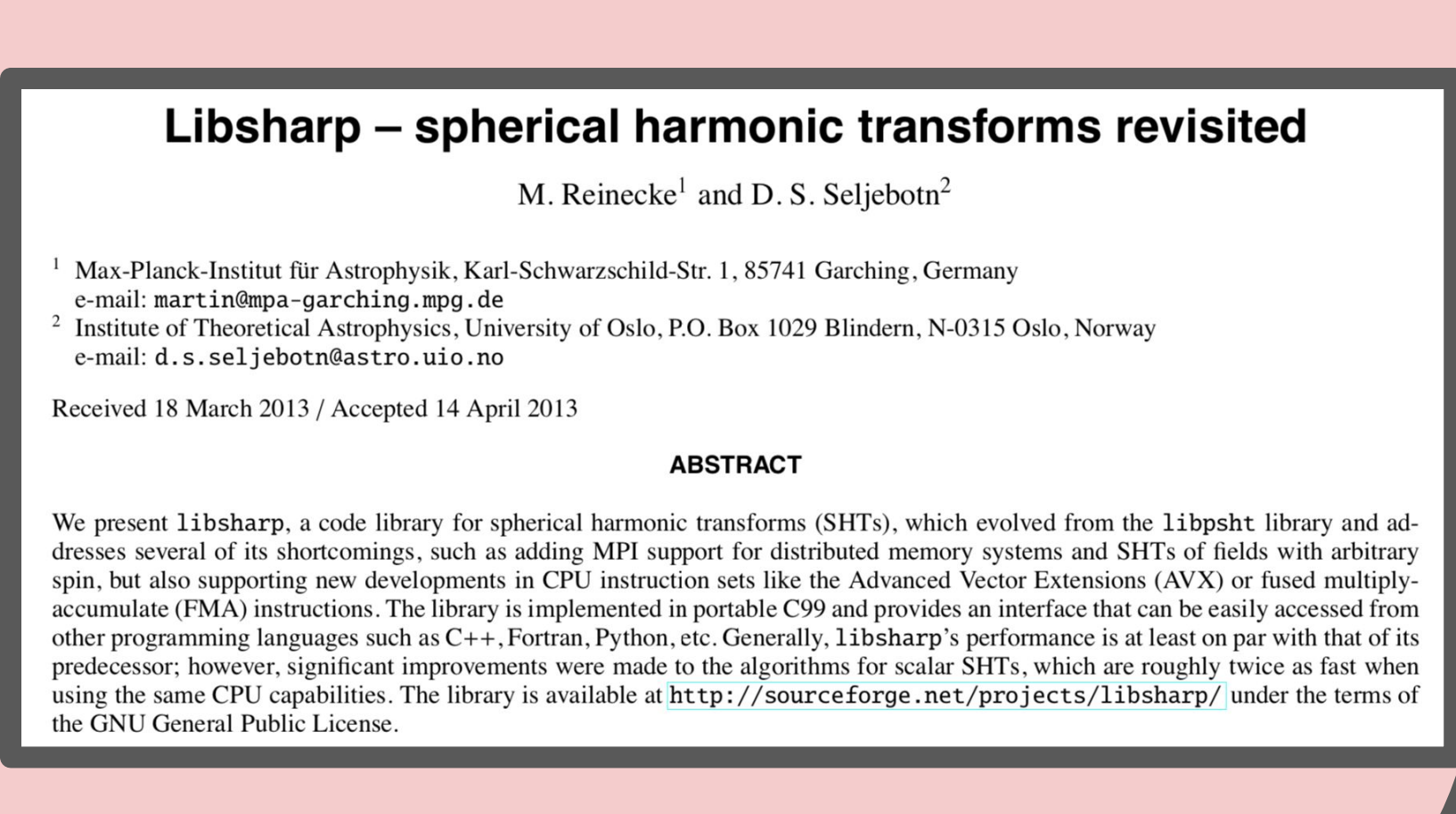
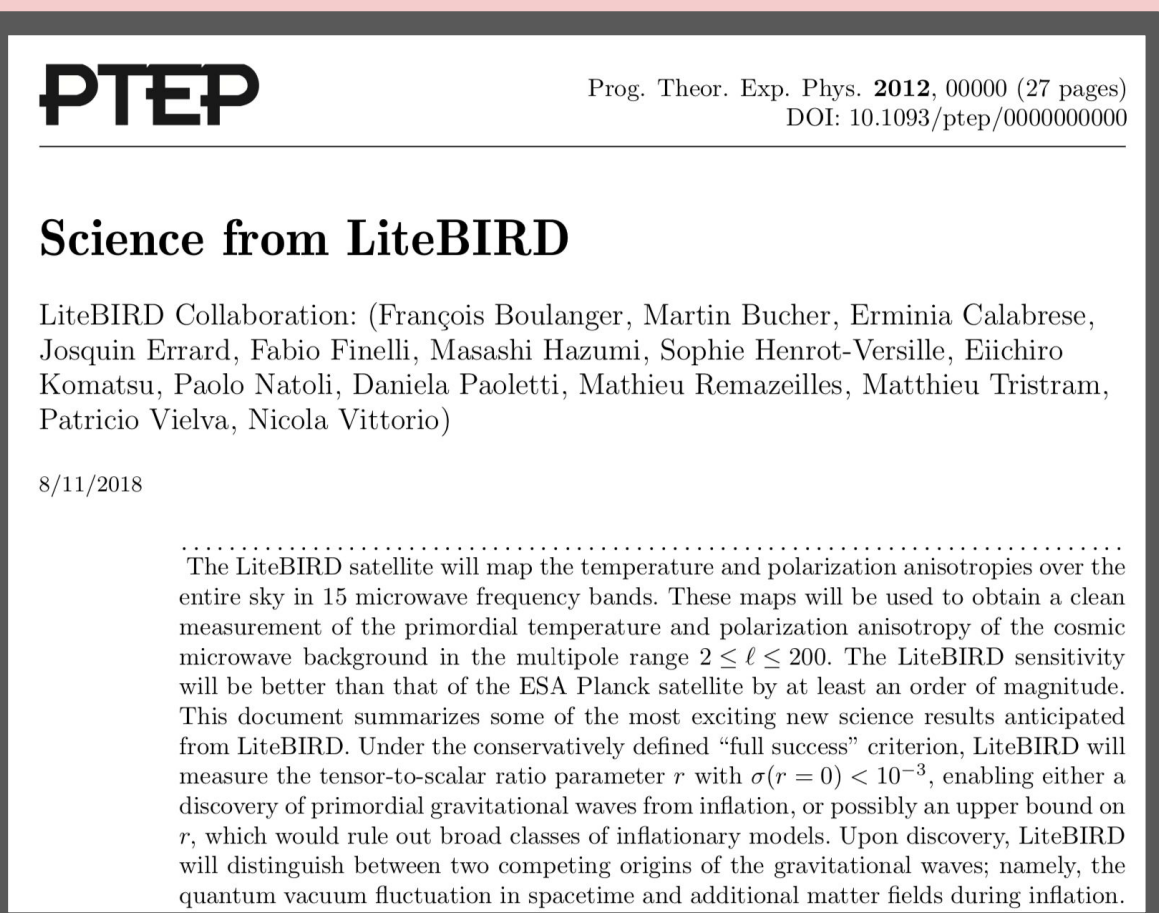
# GERMANY



## Pre-Phase A activities

The German consortium consists of the institutions shown in the bottom right box. The main contributions during the pre-Phase A period so far include (but not limited to):

- Development of the science cases (“Science from LiteBIRD”)
- Participation/organisation of the foreground Joint Study Group (JSG)
- Development of the simulation tools centered around “Planck Levels” simulation suite and associated routines/libraries developed at MPA.



## Expertise in Germany

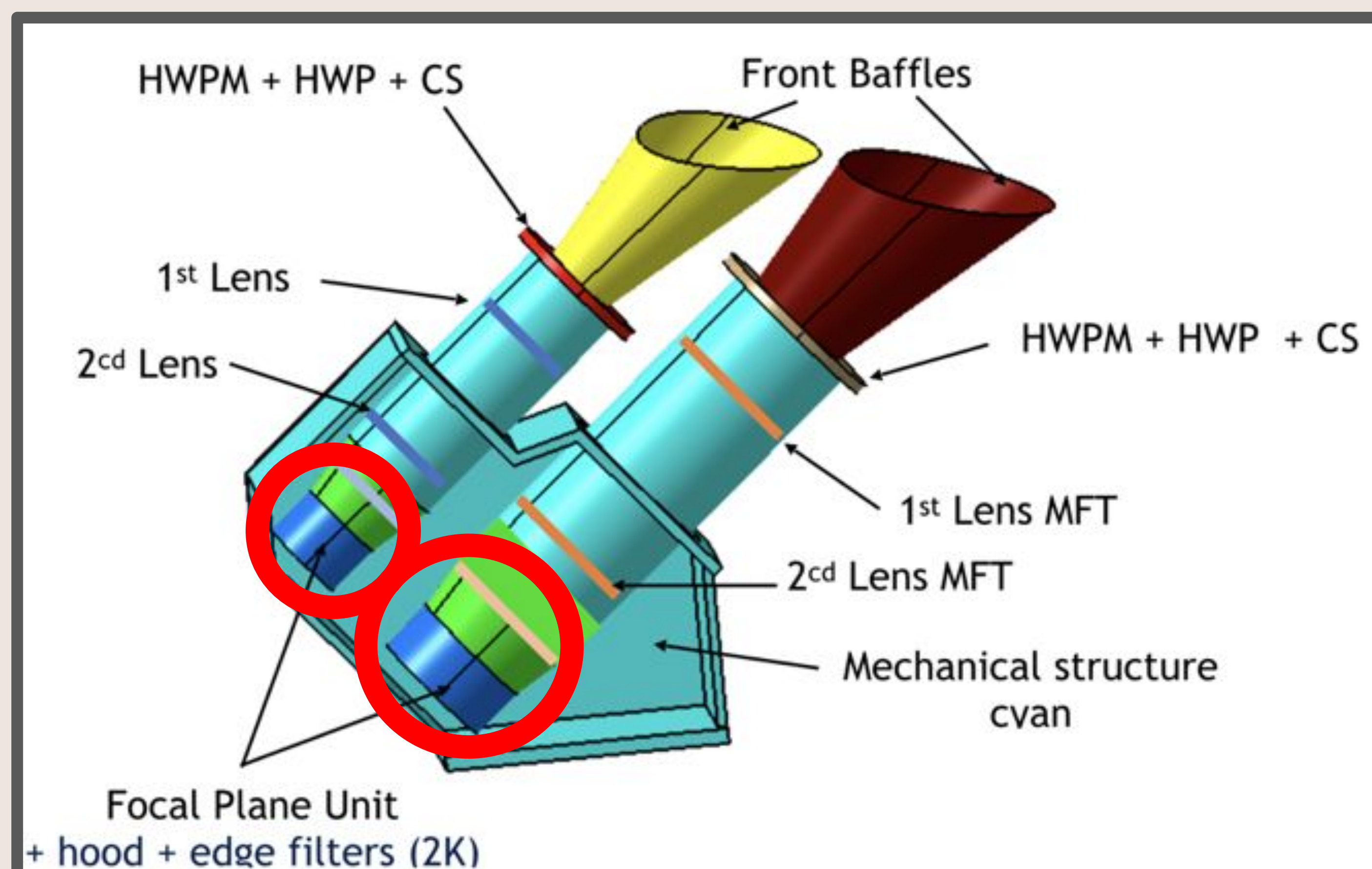
The planned contributions to the success of LiteBIRD mission include:

- **Hardware** (magnetic shield; see the middle panel) - USM
- **Data center** (MPCDF; see the bottom left panel) - MPA
- **End-to-end simulation tools** - MPA, Erlangen
- **Data analysis**, both low and high levels - all
- **Complementary low-frequency synchrotron data** from the ground - Bielefeld

The existing software expertise include:

- Level S (simulation): Planck Levels (MPA); End-to-end Detector simulation (Erlangen)
- Level 0,1 (telemetry to TOD; calibration): Versatile softwares developed for eROSITA (Erlangen)
- Level 2 (map making): ArtDeco (MPA)
- Level 3 (foreground removal): DeltaMap (MPA)
- Level 4 (cosmological analysis): CLASS/MontePython/Cobaya (Aachen); anomaly (Bielefeld); NG (MPA)

## Planned German hardware responsibility: Magnetic shields for MHFT



According to the current task sharing among the European consortium (see the poster on “LiteBIRD-Europe”), Germany is planned to be responsible for the magnetic shields for MHFT.

The locations of the magnetic shields are marked in the **bold red circles** in the left panel.

The challenge is that these components will interface between the telescope tube (European responsibility) and the focal plane (US responsibility), with vastly different temperatures. Therefore, close contacts with both parties will be necessary to produce the components that meet the requirement.

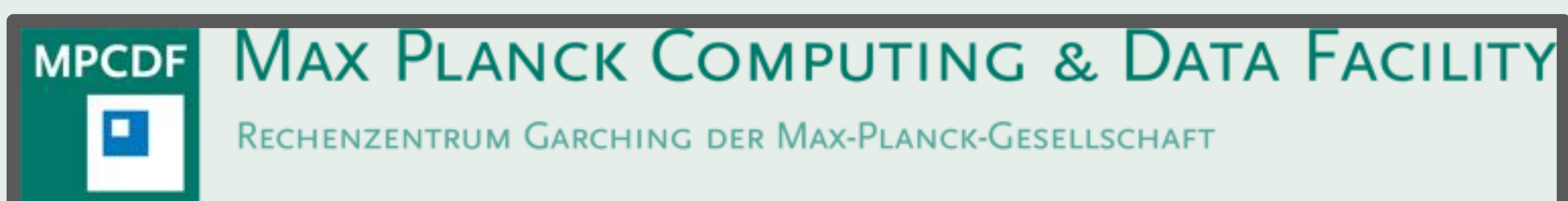
The current plan is that the group at USM will build and perform (warm-)tests of the magnetic shields.

## Interest in European Data Center



We are interested in hosting European Data Center for LiteBIRD.

The candidate location is the Max Planck Computing & Data Facility (MPCDF), which is right next to MPA in Garching. We have excellent support from their staff. We will build on the expertise from the German Data Center for Euclid, which is also housed by MPCDF.



## Participating Institutions



- Max-Planck-Institut für Astrophysik
- Universitäts-Sternwarte, Ludwig-Maximilians-Universität München
- Dr. Karl Remeis-Sternwarte, Universität Erlangen-Nürnberg
- RWTH Aachen University
- Universität Bielefeld
- Universität Göttingen

