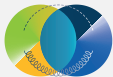


RA4 report

Julia K. Vogel & Emmanuel Stamou



color meets flavor

UBonn – FTD

01.12.2025

RA4: search for the Axion

Key objectives:

- Shape the BabyIAXO experiment and secure funding for its full magnet (DFG Major Research Instrumentation proposal for magnet submitted!)
- Design, construct, and operate a new cavity-based haloscope experiment here in the cellar (SUPAX)
- Pioneer new searches for axions at the Belle II, BESIII, and LHCb experiments (interplay with RA2)
- Prepare Lohengrin for dark-photon searches (long-term planning, future ELSA program)

Proposed personal and funding request

	2026	2027	2028	2029	2030	2031	2032
Staff Category	Number of Persons						
Professors ^a	0	0	1	1	1	1	1
Independent Junior Research Group Leaders	0	0	0	0	0	0	0
Postdoctoral Researchers	1	2	2	2	2	2	2
Doctoral Researchers	2	2	3	3	3	3	3
Other Staff	0	0	0	0	0	0	0

^a Investigator Group Leader.

(Exp. Investigator Group: axions via rare decays or future cavity-based exp. or for Lohengrin?)

	2026	2027	2028	2029	2030	2031	2032
Funding Category	Totals per year in k€						
Staff (total of Table 4.5.4.1)	147	301	490	502	515	528	541
Direct project costs (excl. staff)	18	61	71	71	76	46	76
Total Instrumentation (< 150)	100	0	0	0	0	0	0
Total Instrumentation (≥ 150)	0	150	150	0	0	150	0
BabylAXO (Detector)	0	150	150	0	0	0	0
Lohengrin (Pixel detector)	0	0	0	0	0	150	0

(from proposal - before cuts)

CmF - RA4 Kick-Off

Tuesday Dec 2, 2025, 10:00 AM → 4:00 PM Europe/Berlin
CP-03-123 - E5a Seminarraum (TU Dortmund)
Emmanuel Stamou (TU Dortmund), Julia Vogel (TU Dortmund)

Registration
You are registered for this event. [Open details](#)

Participants
Emmanuel Stamou, Isot Fleck, Jaime Ruiz, Julia Vogel, Kristof Schmieden, Matthias Schott, Sławomira Stafkova, Thomas Mannel, Thorsten Feldmann

Time	Topic	Speakers	Duration
10:15 AM	Introduction RA4	Emmanuel Stamou (TU Dortmund), Julia Vogel (TU Dortmund)	20m
10:35 AM	Axion searches with satellite missions and NuSTAR	Jaime Ruiz (TU Dortmund)	25m
11:00 AM	Lohengrin	Matthias Harnet, Philip Bechtle	25m
11:25 AM	Solar axion searches and IAXO	Matthias Schott	25m
11:50 AM	SUPAX	Matthias Schott	25m
12:15 PM	Lunch		
1:45 PM	Light New Physics searches at Belle 2	Sławomira Stafkova	15m
2:00 PM	The flavour of ALP models	Thorsten Feldmann	15m
2:15 PM	Open discussion of (to be) submitted projects		30m
2:45 PM	Cross-functional teams and discussion		30m

- 02/12/2025 at 10:15 at the TU Dortmund (and zoom)
- still **open slots** for contributions
- discuss planned projects and find new connections within the CmF

Register at:

<https://indico.e5.physik.tu-dortmund.de/event/4233/>

First 7 submitted projects

- *Active Myon Shield for the BabyIAXO Experiment* (Schott)
- *Magnetsystem for the BabyIAXO Experiment* (Desch / Schott)
- *Advanced Multilayer Coatings for the BabyIAXO X-ray Telescope* (Vogel)
- *Plasmon-axion searches with helioscope experiments* (Ruz)
- *Gravitationally Trapping of Stellar and Dark-Matter Axions by Black Holes* (Ruz)
- *Hadronic Backgrounds in Searches for Feebly Interacting Particles* (Hamer / Bechtle / Desch; RA4/TA1)
- *Flavour structures in axion models and generic extensions with light New Physics and their phenomenology* (Feldmann / Stamou / Stefkova; RA2/RA4)