

DESY Summer Student Programme 2023

Summary of the Evaluation and closing words

Olaf Behnke for the organisers
Hamburg, September 7th 2023



Bright skies
welcoming you
seven weeks ago
in Hamburg

Then came the




but nature
needed it

THURSDAY, SEPTEMBER 7

9:45 AM → 10:00 AM CMS Talk: Discrimination between tWZ and ttZ production using Machine Learning

Speaker: Sebastiano Quinto (CMS (CMS-Experiment))


 Discrimination bet...


10:00 AM → 10:15 AM Exploiting Electron Wakefields as a Cost-Effective and Versatile THz Source for XFEL Pump-Probe Experiments

Speaker: Jonah Richards (MXL)

10:15 AM → 10:30 AM Optimization of V0-finding at a future Higgs factory

Speaker: Sara Aumiller (FTX (Technol. zukuenft. Teilchenph. Experim.))

 DESY_FTX_SaraAu...

 FTX_SaraAumiller_...

10:30 AM → 10:45 AM Theory talk 1

Speaker: Leonard Scheuer (T (Theorie))

10:45 AM → 11:15 AM Coffee Break

coffee and cookies

11:15 AM → 11:30 AM Development of Experimental Techniques at the Small Quantum Systems Scientific Instrument at European XFEL

Speaker: Thomas Ward (XFEL-EZ-SQS)

11:30 AM → 11:50 AM Longitudinal Diagnostics for fs Electron Bunches

Speakers: Linus Boelte (MSK (Strahlkontrollen)), Linus Boelte, Roman Janovic

11:50 AM → 12:05 PM Applying neural networks for image de-jittering in scanning x-ray microprobes

Speaker: Giorgio Bruni-Campanella (PS-PETRA-S)

12:05 PM → 12:20 PM Particle track reconstruction in LUXE with Quantum Computing Algorithms

Speaker: Sachin Gupta

12:20 PM → 12:45 PM Evaluation and Closing

- preview of the evaluation results
- closing words



Femtosecond Transient Absorption Spectroscopy for Investigation of Non-Thermal Equilibrium Dynamics of Gold Nanorods

Author:

Giuseppe GIORGIO

Università degli Studi di Bari Aldo Moro

Supervisor:

Kai-Fu WONG

CFEL ATTO group, DESY

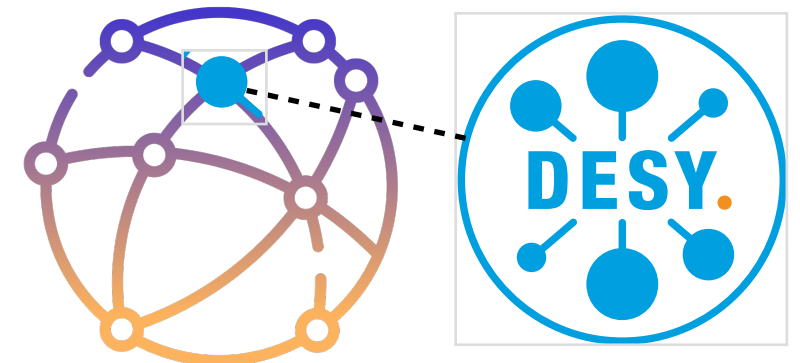
September 1, 2023

Abstract

The study of high density or metallic materials has been of high interest in the last few years, since the capability of analyzing such difficult systems experimentally has recently emerged. Nanoparticles or nanorods exhibit properties which can be understood by delving into their dynamics. It is well established that, after the photoexcitation of gold nanosamples, different distributions emerge at different time scales, which last fractions of picoseconds. The aim of this report is to describe a pump probe transient absorption experimental setup that captures this extremely swift dynamics. Initial results are promising, successfully inducing the desired dynamics that align well with existing literature. Refinements to the experimental setup, encompassing fine-tuning, beam characterization, and pulse duration optimization, are anticipated to provide deeper insights into plasmonic nanostructure photoexcitation dynamics.

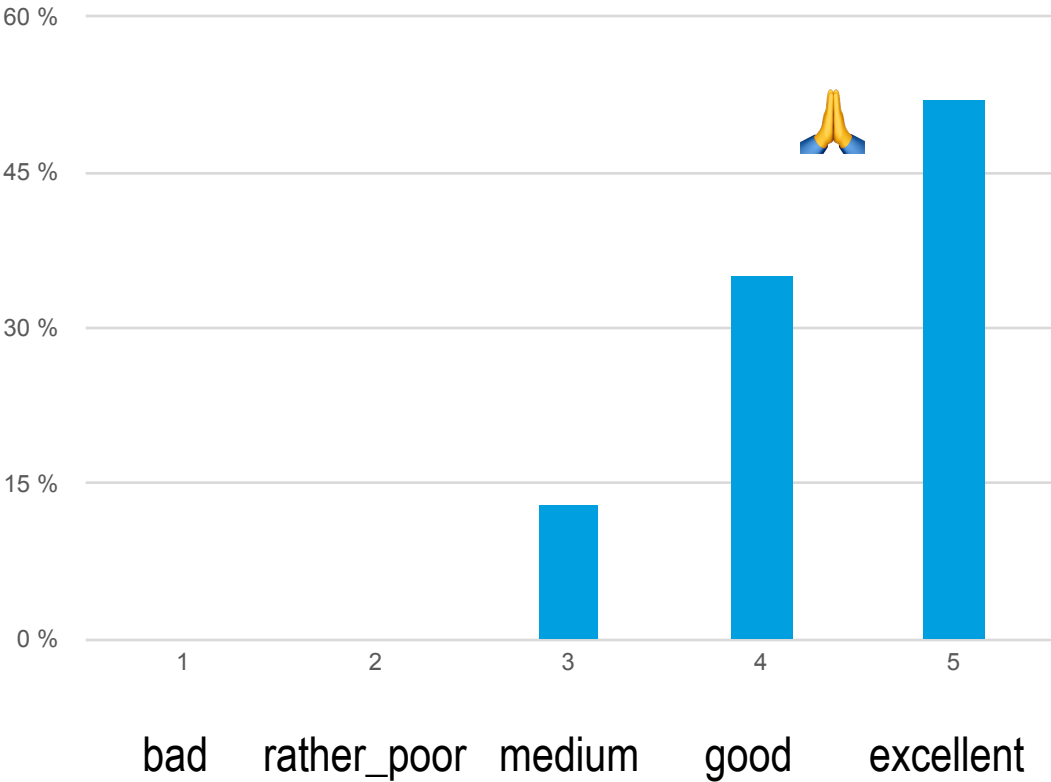
Results

- First of all: nice scientific results examples of which you have just presented in the last two mornings → looking forward to your reports
- Hopefully: insights into how we do science at DESY
- Lectures about a broad range of topics
- But also: Contacts to scientists at DESY and other students from all over the world

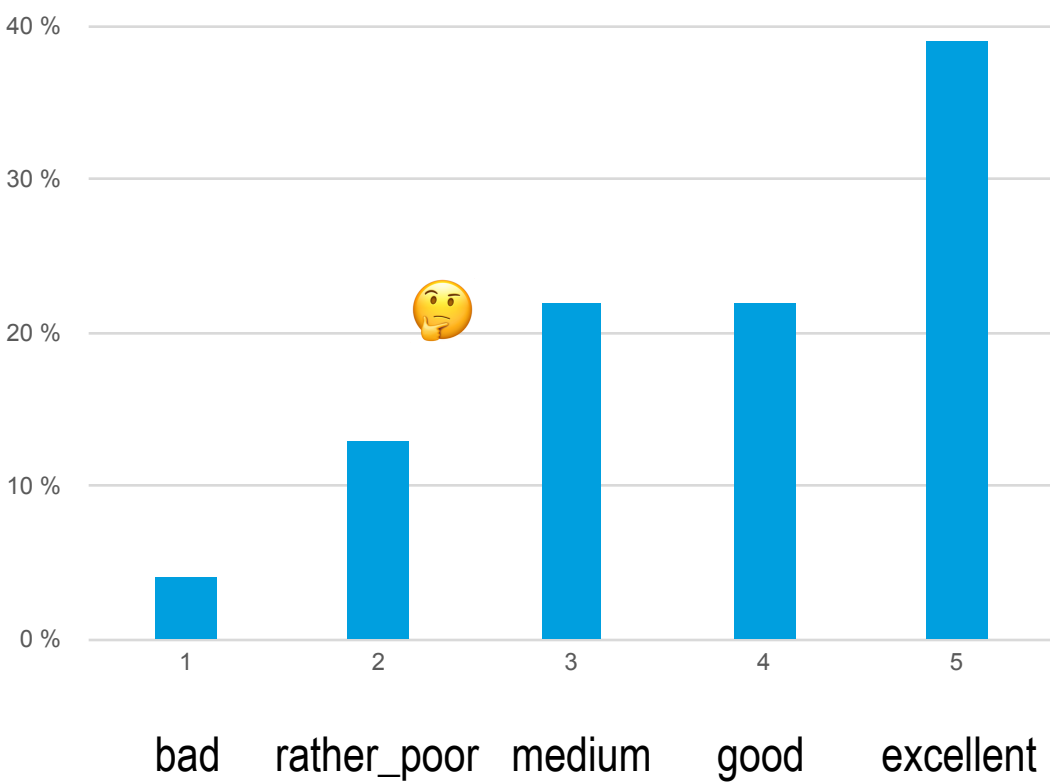


Survey: Project Work

Please rate how you overall liked your project work



Please rate how well your project was defined and easy to start with



Survey: Project Work

Comments on project work

“The worked project was a really valuable experience for me and I learned so much in this 8 weeks in terms of maths, coding, general research and much more. The supervision was extremely good, I was surprised how often and for how long the supervisors took time to meet with us, to teach and to help.”

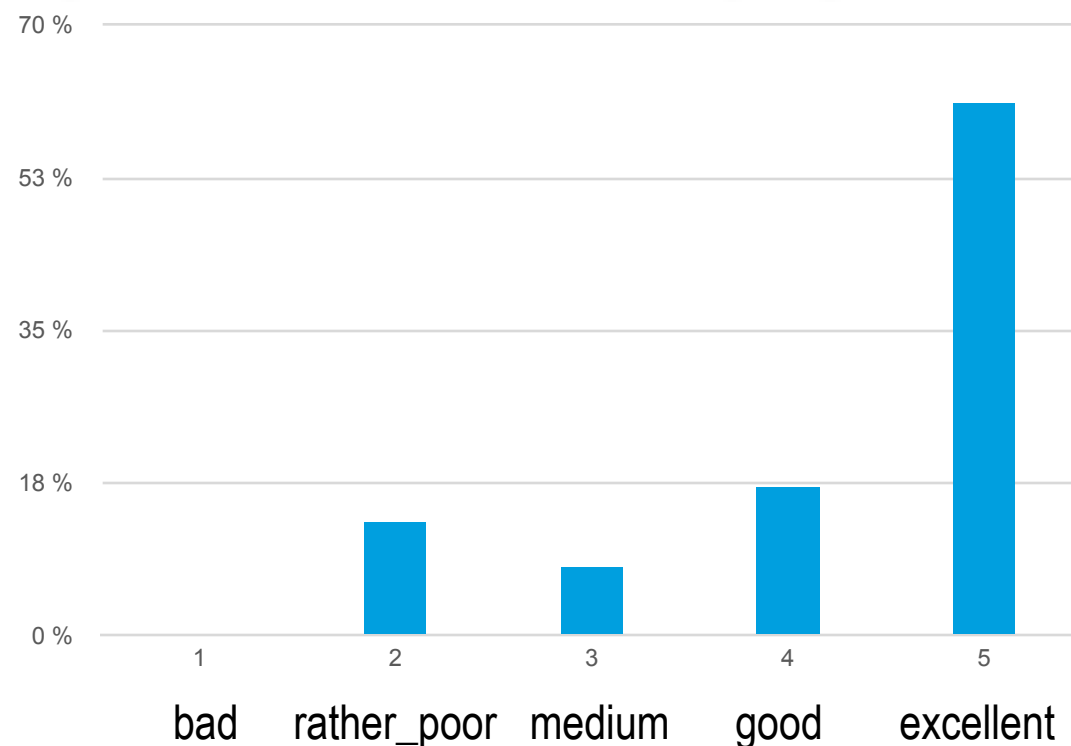
“The goal of the project was not very well defined...”

“However the fact that my supervisor was not on campus 3 of the 7 weeks...”

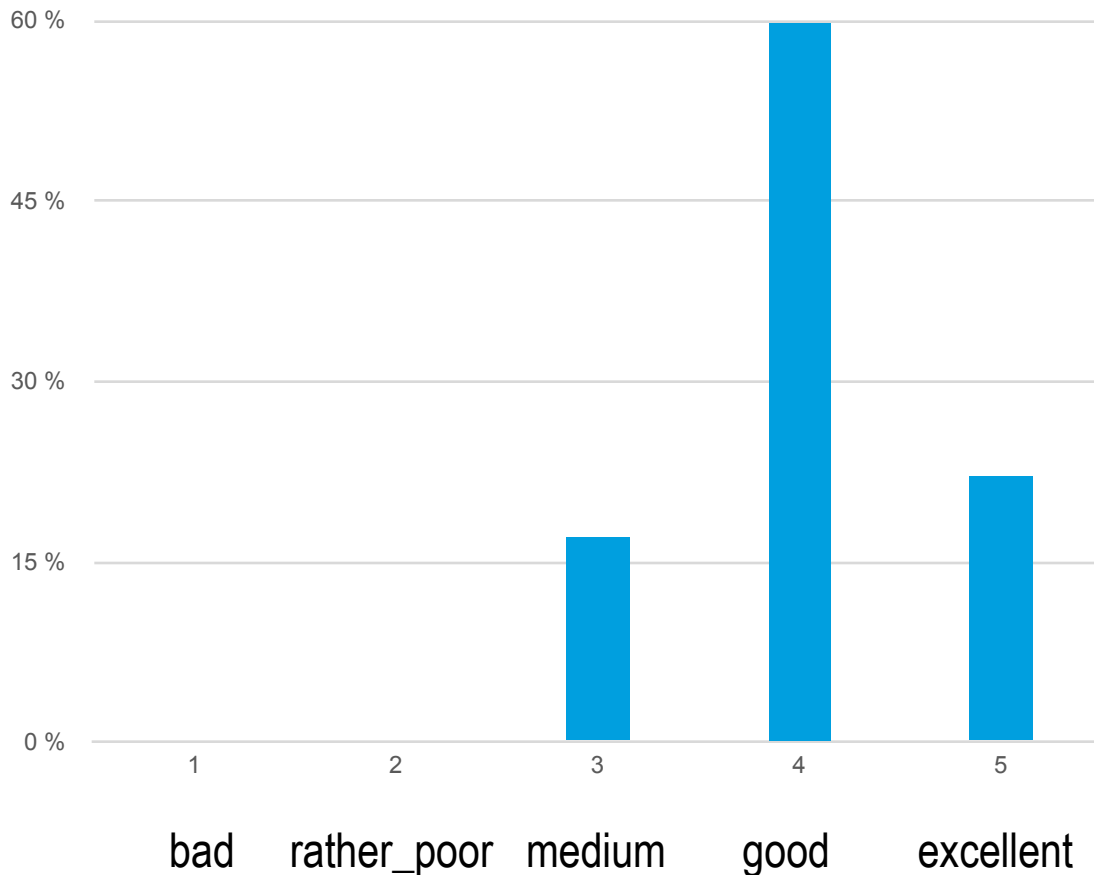


Our official supervisor's code of conduct: for each project there should be **always** at least one knowledgeable DESY supervisor available helping the student on a daily basis..

Please rate the quality of the supervision of the work project



Survey: Lectures




Feedback on the lectures:

“The lectures were good, well balanced, not too detailed (except for one), but still giving an interesting overview of the topics”

“The large variance in previous knowledge among the summer students makes it hard to keep the lecture program understandable for the people with less previous knowledge and still make it useful for people further along in their education”

Suggestions/wishes from you:

- Start lectures at 9am → preserve more time for work projects
- Don't run overtime 
- Better coordination between lectures to avoid repetition
- Add a statistics lecture a la Glen Cowan

Survey: Lectures

Project Work - Lecture Ratio



A. much more lecture time needed: 0 (0.00%)

B. a bit more lecture time needed: 3 (13.04%)

C. fine as is: 10 (43.48%)

D. a bit more time for project work (less lectures): 7 (30.43%)

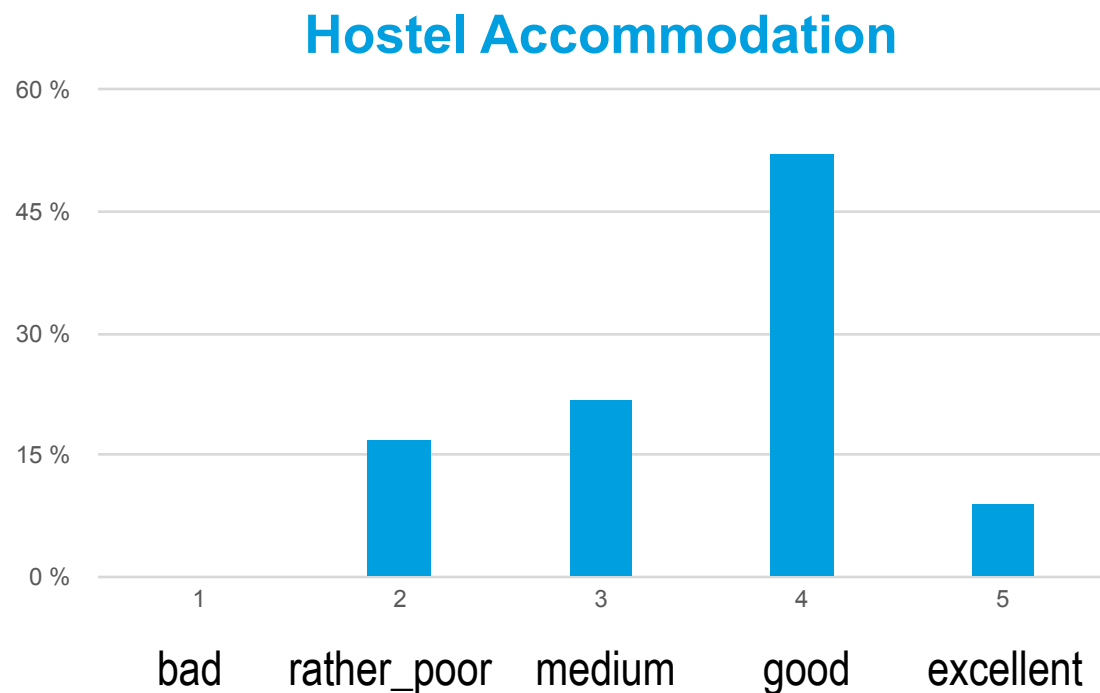
E. much more time for project work (only few lectures): 1 (4.35%)

F. No selection: 2 (8.70%)



- On average: Wish to have a bit more time for project work and thus less lectures → we will take that into account for the future

Survey: Accommodation



Feedback on the Accommodation:

“The rooms were modern and spacious enough for these few weeks.. The linen exchange times however are very inconvenient.”

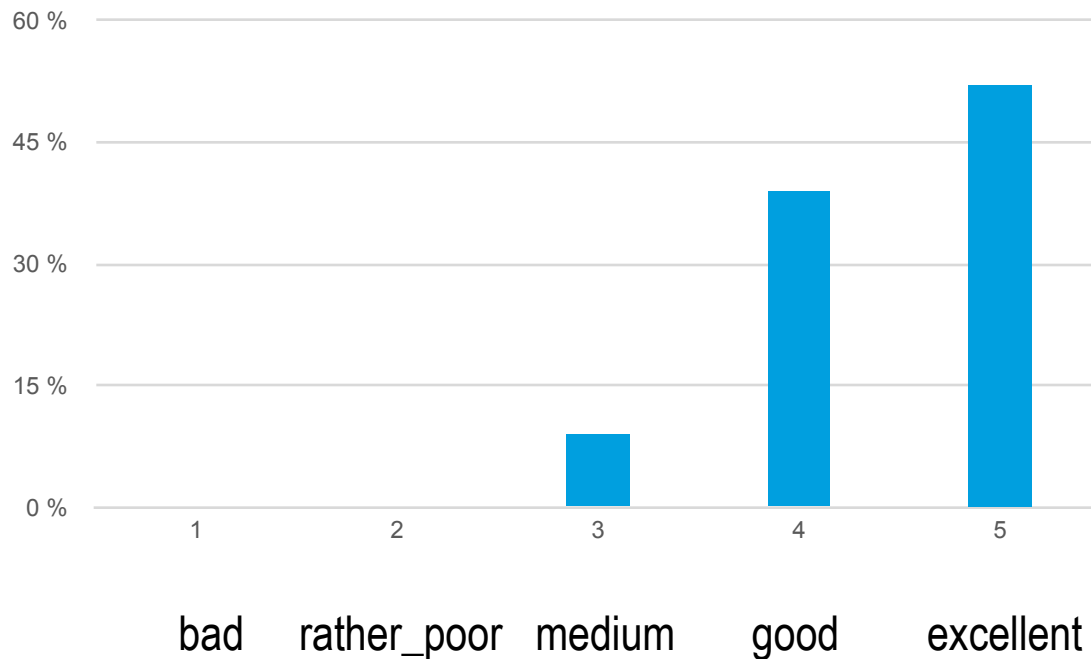
“The kitchen itself is horror. It’s always dirty, very few equipment.”

“Quite small room, sometimes problems with exchanging towels. All in all it was good.”

“ Expensive”

Mixed feedback → We will relay this to the DESY hostel

Survey: Quality of Information



Feedback on the Information:

“Everything shared by email or on WhatsApp was precise”

“Very clear”

“Would be great to put this on the webpages beforehand”

Criticism on unclear information on:

- Application for Tax-ID and whom it concerns
- Not needing VISA for Americans

➔ We are on a learning curve

Survey: Quality of the organisation on-site

- „Excellent”
- “Very nice”
- *“Salary and travel reimbursement is a little bit too complex for non-EU students. First we need to go to somewhere outside the campus, which is hard to find for the check, then we need to go to the bank to claim the cash. I don't know if it's possible that DESY can directly give us cash ”*

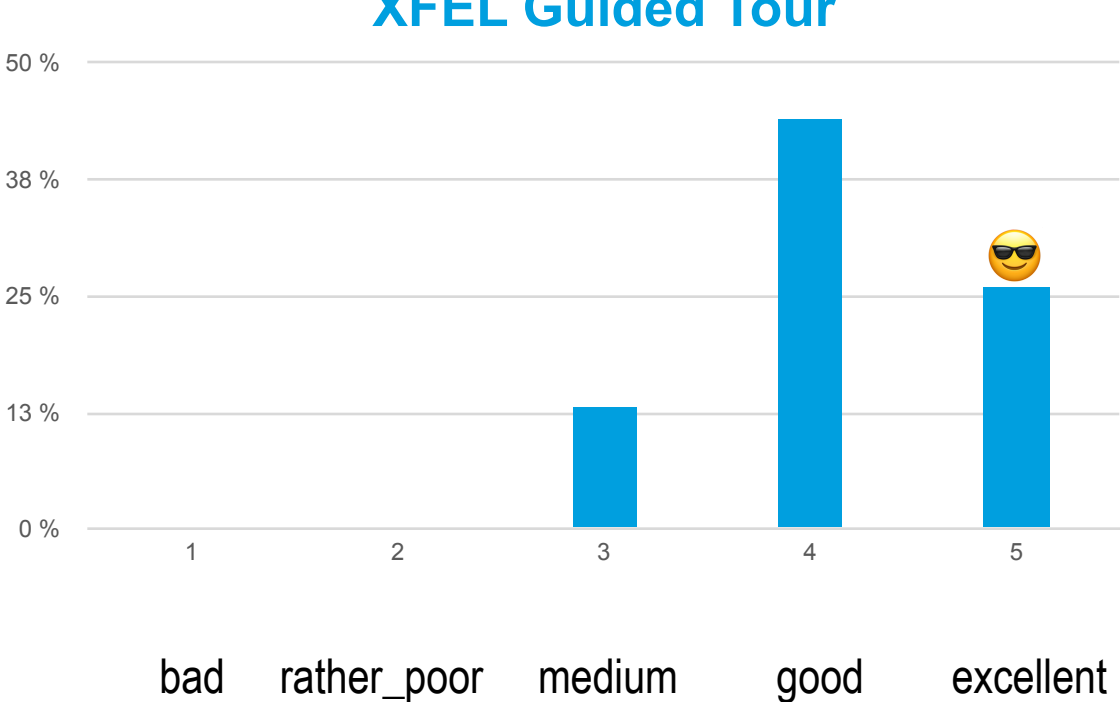
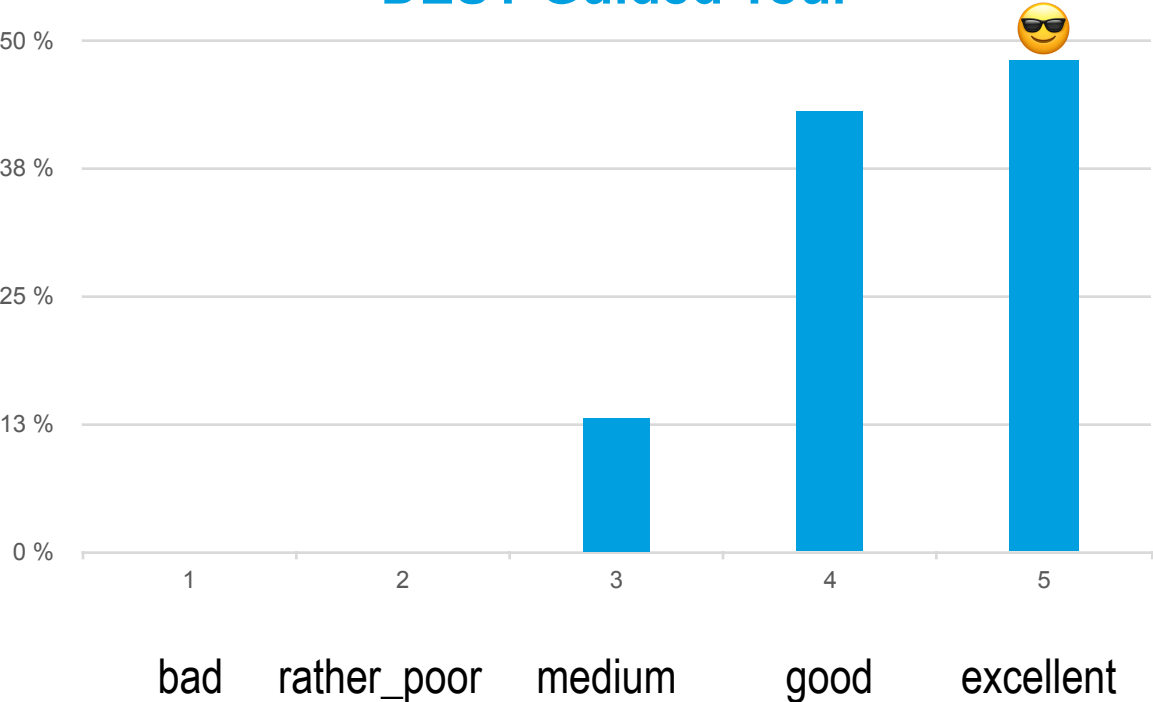
Survey: Guided Tours



DESY Guided Tour



XFEL Guided Tour



Survey: What did you really (not) like about the program?

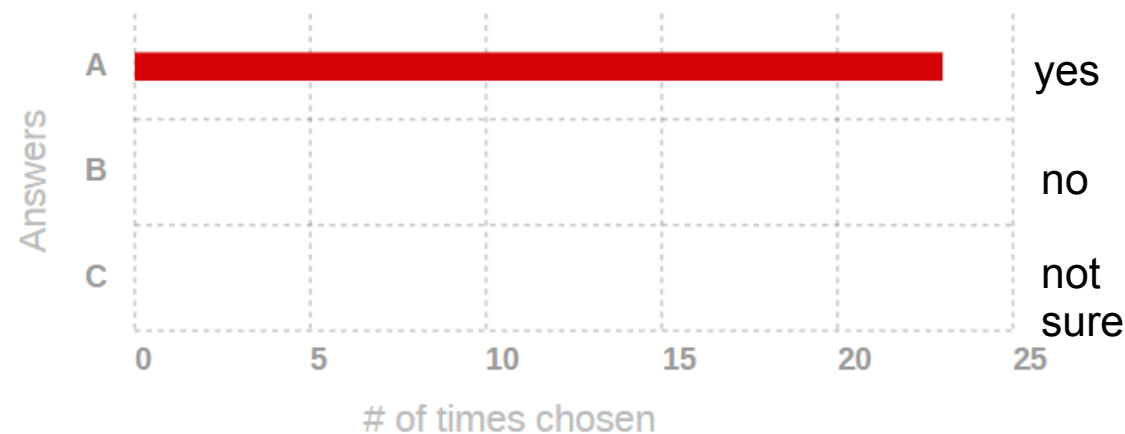


- „Having the possibility to work as an actual researcher.”
- “My project, my group, all the new friends and living in another city! And learning so much about physics!”
- “EVERYTHING!”



- “Time and resource constraint”
- “The weather”
- “The food (sorry, it cannot be compared to food in Spain)”

Would you recommend the DESY Summer Student Program to a friend?



Survey: Do you have any more comments, suggestions

- *„Inform about the ways to reserve rooms like cafeteria extension or auditorium more in the beginning or in the introduction lecture”*
- *“START SEPARATING TRASH ON THE CAMPUS. We are living in 2023...”*

Thank you!

1. A big **Thank you** to the supervisors, who made this possible!
2. Another big **Thank you** to the lecturers who gave nice overview talks.
3. **Thank you** to many others for administrative and technical help:

- Sara Tabea Folgmann, Annette Pettersson, Ieva Gilyte-Robertson, Larissa Hintz, Marion Salmen and others from the Hostel team, Christina Tornau and colleagues, Christine Apfel, Gabriella Kirstein, Steffi Killough and Xiaoxiao Li, the meeting service team and the campus management team.. + numerous other helpers!

Thank you to my fellow organisers
Friederike Januschek, Gernot Maier, Nick Styles and
Andreas Przystawik and in particular

Ute Micheelsen and Andrea Schrader

👏👏👏🙏🙏🙏 for serving many years as secretaries
and providing all the administrative backbone - you are the good
souls of the DESY summer student program!

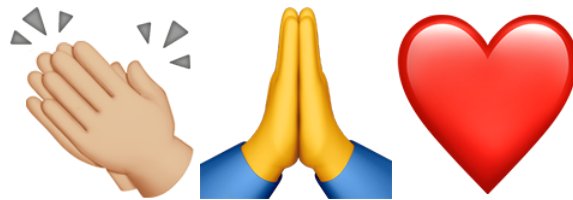
and Carolin Groetzinger and Britta Niemann

for doing a great job in your first year as secretaries! 👏🙏



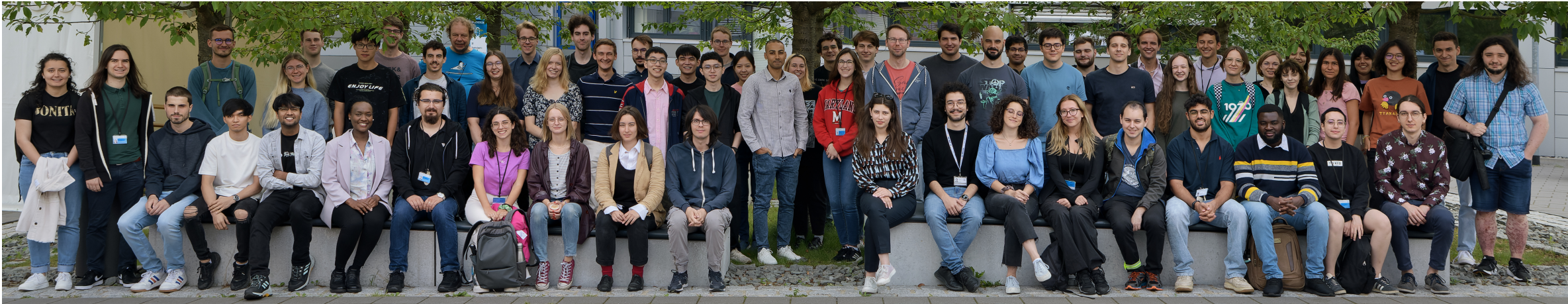
Thank you!

**Thank you, DESY Summies 2023, for
your enthusiasm, curiosity and great
work! This is what creates the spirit
and value of the program**

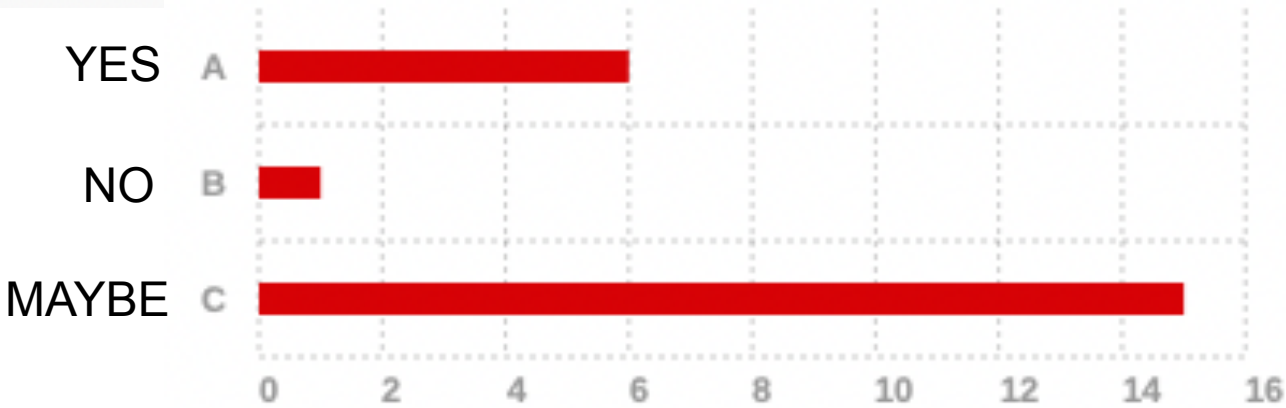


Thank you All!

It was great having you here!



Are you planning to return to DESY in the future?

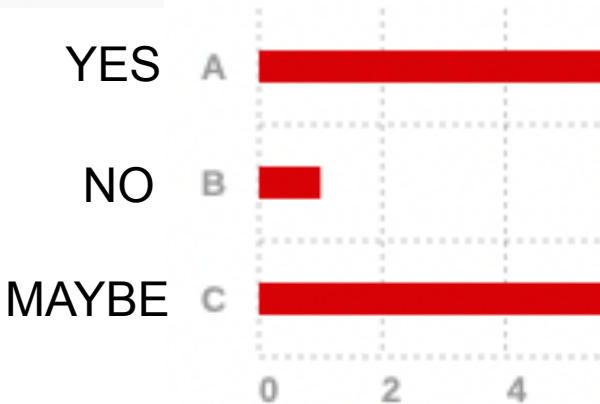


Thank you All!

It was great having you here!



Are you planning to return to DESY future?



WE WANT YOU!

Back as PhD student, post-doc...



Thank you All!

It was great having you here!



WE WANT YOU!

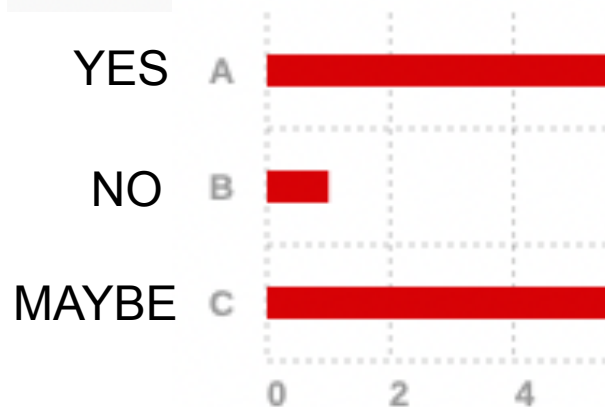
Back as PhD student, post-doc...

For PhD

- contact via email:
 - Your supervisor
 - DESY group leader(s)
 - us organisers
 - graduate schools: DASHH, Helios, Pier
- Check webpages:
 - DESY group webpages
 - DESY job offers
 - ...
- **Don't call 2500**



Are you planning to return to DESY future?



Graduate schools - more information

- There are different graduate schools and other initiatives at DESY, e.g. DASHH, Helmholtz Weizmann Multimessenger Astronomy Research School, PIER; to some of them you can apply directly
- Also: check again the **talk by Stefanie Tepass from PIER** <https://indico.desy.de/event/35182> as well as the webpages: https://www.desy.de/career/career_programs/index_eng.html

