

Deutsches Elektronen-Synchrotron DESY
Ein Forschungszentrum der Helmholtz-Gemeinschaft



Minutes of the 300th Session of the DESY Scientific Committee (WA / SciCom)

on 11th November 2022

<https://indico.desy.de/event/35913/>

Participants:

WA:

in person: N. Baboi, D. Berge, M. Beye, I. Bloch, F. Calegari, R. Doehrmann, H. Graafsma, I.-M. Gregor, C. Grojean, J. Hakanpää, T. Laarmann, F. Poblitzki, K. Tiedtke, S. Toleikis, D. Voelker, T. Zoufal;

per zoom: C. Apfel, J. Arling, T. Behnke, S. Blot, K. Borrás, M. K. Czwalińska, M. Diehl, D. Eckstein, A. Eichler, S. Fiedler, K. Floettmann, E. Gallo, J. Garrevoet, J. Hakanpää, J. Haller, A. Haupt, K. Honkavaara, N. Hundoegger, M. Kasemann, C. Kluth, M. Kowalski, L. Lilje, A. Lindner, J. List, I. Melzer, K. Peters, C. Porthun, A. Ringwald, H. Schlarb, V. Schomerus, S. Schreiber, H. Schulte-Schrepping, O. Seeck, M. Tischer, R. Treusch, K. Valerius, P. van der Reest, G. Weiglein, H. C. Wille;

Directorate: H. Dosch, C. Haringa, E. Weckert

Guests: W. Louis (DIB)

Works Council: ---

Minutes: T. Schörner

Agenda:

TOP 1: Welcome and adoption of agenda

TOP 2: Report from the directorate

TOP 3: Status of high-level appointments

TOP 4: Scientific presentation: Ultrafast Chiroptical Switching

WA / SciCom closed session

Discussion - feedback to the directorate talks

Report from working groups

TOP 1: Welcome and adoption of agenda

Ingrid Gregor opens the 300th meeting.

The agenda is adopted unanimously.



TOP 2: Report from the directorate

Helmut Dosch reports on new developments from the directorate's point of view:

- [Slides deck link](#)
- DESY in times of crisis
 - Energy consumption DESY 220 GWh, 90% large scale facilities
 - 2023 80% 2024 60% 2025 40% is safe
 - Electricity price: 7.03 ct/kWh 2022 average – expect up to 38.7 ct/kWh for power not yet purchased
 - Government provides 500 Mio to research and education
 - Gas price: 4.299 ct/kWh in 2022, 25.976 kWh in 2023
 - DESY submits an HGF proposal for waste heat utilisation
- Crisis also affects gas availability
 - Availability of Helium and Neon biggest issues
 - 60000 m³/a of Helium used by DESY
 - 47000 m³ acquired from vendor
 - 20000 on loan from CERN
 - Neon came to 50% from Mariupol and Odessa
 - Price up from 4500 € to 24000 € per bottle
- Annual increase of DESY budget 2% BUT: 10% inflation, salary 6-7%
 - Results in > 6 M€ loss of purchasing power per year
- OVERALL: 2023-2025 will be extremely tough for the lab
- 2025+: we need to focus and will adjust the strategy loop
- Construction cost explosion (BKI > 15%) affecting campus development
 - Technikum was cancelled and logistic centre will be frozen
 - Girder assembly building for PETRA 4 is then foreseen to act as Technikum after end of use case
 - CAST not fully funded
 - WPC looking for solutions
- Strategy loop 2022/23
 - “Nationales Analytikzentrum” (Petra IV)
 - “Neue Fenster in die Quantenwelt” (Onsite Experimente in der Teilchenphysik, DZA 1.5 Mrd €)
 - DDL no decision
 - Unclear if it remains at the top of the list or is thrown back into competition lottery
 - Frustrating



- **Discussion**

- Slide 8 - strategy review - confused about when WA or virtex will be once more involved? When should we block time and can provide input?
 - Beginning of next year
 - Please provide a date
- Slide on buildings – what are the blue dots?
 - Is on agenda, working on it
 - Is CAST
 - No, we are working on acquiring the required additional funds, not lost yet!
- Girder assembly building could transition when?
 - Around 2030
- No severe consequences for personnel - concrete plans?
 - Non permanent contracts are in most danger, we work most on trying to reduce damage here
 - Personnel body must shrink overall as a consequence of the shrunk budget
 - We will not lay off people, this is for sure
- XEFL situation, is there something that reflects back on DESY?
 - Russian contribution, hard to say if this has ramification on DESY. We expect it will not, as it was a national issue
 - Russians continue to pay their contribution, also 2023, a very delicate issue, very hard to accept this money (does money really not stink?)
 - Prone to internal conflict at EXFEL
 - We cannot be blackmailed by any Russian action, we do not depend on their contribution to EXEL.
- DZA - positive news, what role will DESY take in this endeavour
 - Not clear yet, but Christian is working on developing scenarios and clarifying the DESY role
 - Any activity by DESY must be financed from the 1.5 Mrd.

TOP 3: Status of high-level appointments

Wiebke Louis presents developments in high-level recruitment processes. Individual positions and names are not recorded in the minutes – see the slides on the WA web page.

- **Request**

- 1 WA committee nomination for W2 YIG (protein structure dynamics)



TOP 4: Scientific presentation: Ultrafast Chiroptical Switching (Francesca Calegari)

- **Discussion –**

- For the ultrafast time scale, how fast would FLASH or XFEL would have to be to track these transitions?
 - Depending on transition level separation, as shown in the initial graph
 - Few femto sec and faster
 - Sub ten femto is not out of the reach for FEL 😊
- How about theory description
 - There are recent advances, the molecule is complex, but theory, working with some approximations, is achieving better description of the complex objects under study
- Beams in atto seconds are not monochromatic, is this not a problem?
 - If you exciting bands this is fine
- Theory you are in Born-Oppenheimer regime - are electron systems rebounding? Effect on calculations?
 - Nuclear effects are included, but often do not have an impact
- Comment: this can be labelled as quantum control and we have to showcase this
- Chiral molecule response, slide 15, why is the xy pattern different
 - It is a question of statistics, here the patterns are purely noise / statistic
- Two coloured pulses to be synced, is this an issue, could you somehow work without this two colour lock?
 - All optics are locked in time, the dependence on this depends on the object under study.

WA/SciCom Closed Session (intern only)

Hamburg, 11th November 2022

Ingrid-Maria Gregor