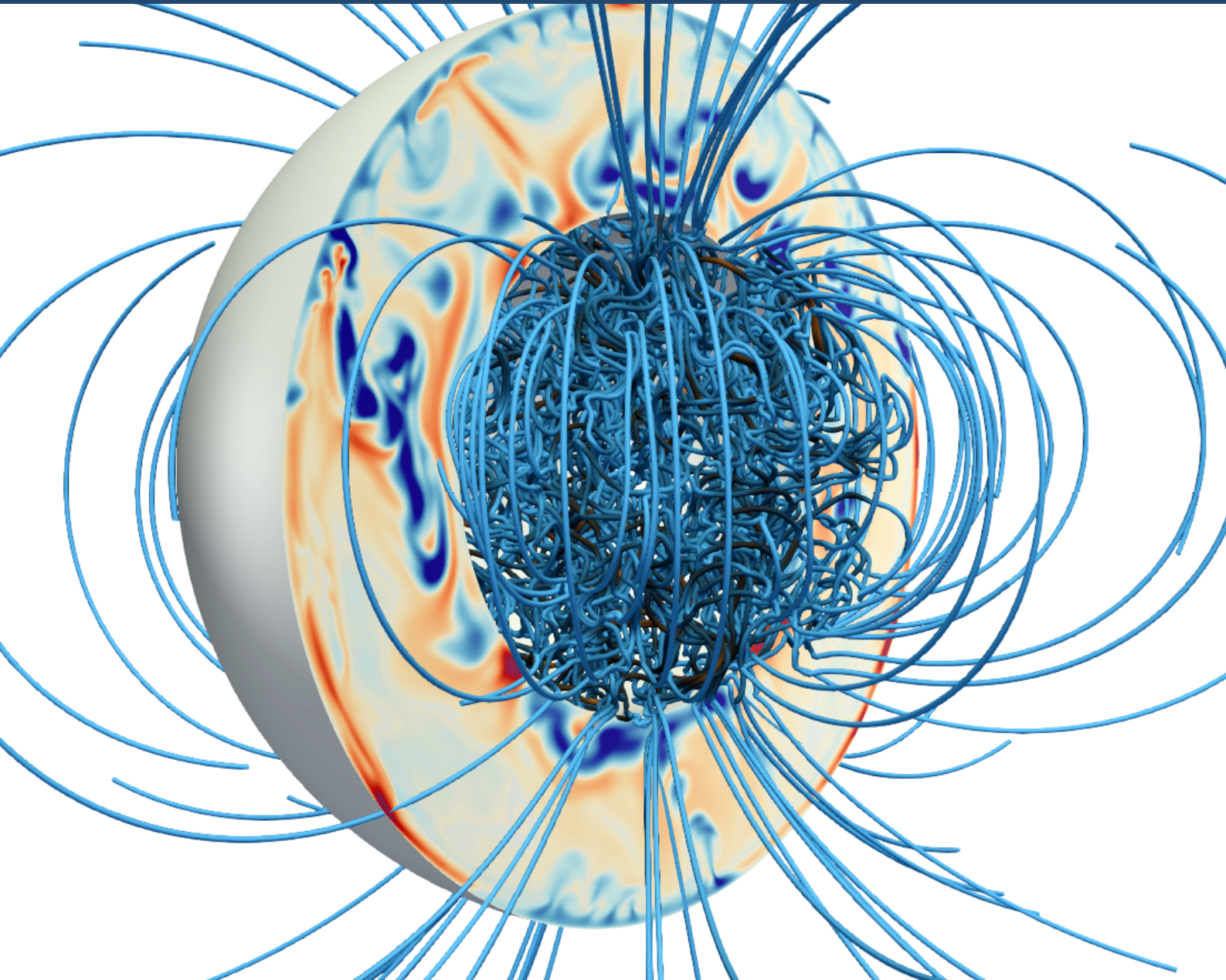


SPP 2024 - DEEPDYN KICK-OFF MEETING 2023



16 - 17 NOVEMBER 2023

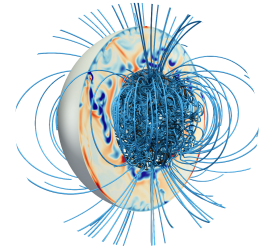
Evangelische Akademie Tutzing
Schloßstraße 2+4, 82327 Tutzing

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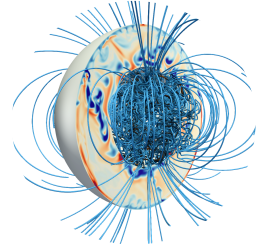
SPP 2024 - DEEPDYN KICK-OFF MEETING 2023



OVERVIEW THURSDAY, NOVEMBER 16

| | | |
|--|---------------|---|
| | 08:30 - 09:00 | Welcome, introduction and organization of DeepDyn (Stuart Gilder / Julia Kollofrath) |
| | 09:00 - 10:00 | Keynote Talk I: Paleointensity estimates from Pleistocene aged volcanics: Implications for hemispheric asymmetry in the time-averaged field (Lisa Tauxe) |
| GEO- AND PALEO- MAGNETISM | 10:00 - 10:15 | Global characteristics of geomagnetic field reversals from data and numerical simulations (Monika Korte) |
| | 10:15 - 10:30 | Global time-averaged reconstructions of the geomagnetic field through deep geological time and their implications on the Earth's deep interior (Sanja Panovska) |
| | 10:30 - 10:45 | Geomagnetic field behaviour and geodynamo characterisation at the end of the Cretaceous normal superchron (Florian Lhuillier) |
| | 10:45 - 11:00 | Contributions to the understanding of the Earth's magnetic field from detailed mineral magnetic and palaeomagnetic analyses of high-resolution, high-latitude lake sediment cores (Stephanie Scheidt) |
| | 11:00 - 11:30 | Coffee |
| GEODYNAMO | 11:30 - 11:45 | Double diffusive finger convection at the top of the core (Andreas Tilgner) |
| | 11:45 - 12:00 | The new core paradox, the stable layer, and double diffusive convection in Earth's core (Johannes Wicht) |
| | 12:00 - 12:15 | Double diffusive convection in stable layers within Earth's core (Stephan Stellmach) |
| | 12:15 - 12:30 | Discussion on Paleomagnetism and Geodynamo |
| | 12:30 - 13:30 | Lunch |
| | 13:30 - 13:45 | Humboldt Academy for Science and Engineering - An elective STEM course for interested and motivated students at our high school (Sebastian Bauer) |
| | 13:45 - 14:45 | Keynote Talk II: Insights on mantle dynamics from full waveform seismic imaging of the deep mantle (Barbara Romanowicz) |
| DEEP MANTLE | 14:45 - 15:00 | Coupling the dynamics of Earth's core and mantle (Peter Bunge) |
| | 15:00 - 15:15 | The co-evolution of mantle and core over Earth's history (Nicola Tosi) |
| | 15:15 - 15:45 | Coffee |
| & DYNAMICS | 15:45 - 16:00 | Understanding the influence of deep seismic mantle structures at the core-mantle boundary on intense magnetic flux regions (Christine Thomas) |
| | 16:00 - 16:15 | Influence of the plate motion reference frame on lowermost mantle structure, evolution, and core-mantle boundary heat flow (Bernhard Schuberth) |
| | 16:15 - 16:45 | Discussion on the structure and dynamics of the deep mantle and coupling to core |
| MATERIAL PROPERTIES | 16:45 - 17:00 | Properties of Fe-bearing geomaterials at conditions close to the core mantle boundary (Melanie Sieber) |
| | 17:00 - 17:15 | How significant is radiative heat transport at the core-mantle boundary? (Sergey Lobanov) |
| | 17:15 - 17:30 | Electrical conductivity measurements on lower mantle phases to illuminate structures at the core-mantle boundary region (Carmen Sanchez-Valle) |
| | 17:30 - 18:00 | First discussion on material properties of the deep Earth |
| | 18:00 | Dinner |

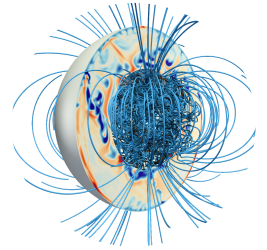
SPP 2024 - DEEPDYN KICK-OFF MEETING 2023



OVERVIEW FRIDAY, NOVEMBER 17

| | | |
|--------------------------------|---------------|---|
| MATERIAL PROPERTIES | 09:00 - 09:15 | The role of light elements at the core-mantle boundary - Partitioning, demixing and transport (Gerd Steinle- Neumann) |
| | 09:15 - 09:30 | Thermal transport properties on lowermost mantle minerals - Insights from atomic-scale simulations (Sandro Jahn) |
| | 09:30 - 09:45 | Deep mantle processes and core-mantle interaction: A novel geochemical perspective (Carsten Münker) |
| | 09:45 - 10:00 | Further discussion on material properties of the deep Earth |
| | 10:00 - 10:30 | Coffee |
| BIO- MAGNETISM | 10:30 - 10:45 | Microevolutionary adaptations of magnetotactic bacteria to reversals of the geomagnetic field (Daniel Pfeiffer) |
| | 10:45 - 11:00 | Magnetofossilization: Formation and preservation of magnetosomes in subsurface sediments (Sophie Roud) |
| | 11:00 - 11:15 | Magnetotactic bacteria, cosmogenic beryllium and the Earth's magnetic field: Obtaining high-quality records of magnetofossil preservation and relative paleointensity over the last 1.1 million years (Tatiana Savranskaia) |
| | 11:15 - 11:30 | Tracing the food chain from magnetotactic bacteria to protozoa under laboratory and environmental conditions (William Orsi) |
| | 11:30 - 12:00 | Discussion on biomagnetism |
| | 12:00 - 12:30 | Wrap up |
| | 12:30 - 13:30 | Lunch |

SPP 2024 - DEEPDYN KICK-OFF MEETING 2023



DAY 1

Wednesday, November 15



19:00 ARRIVAL

Register for the meeting at the registration desk



19:30 ICEBREAKER

Salon

Meet in the Salon for some drinks. The DeepDyn steering committee will meet at the same time.

DAY 2

Thursday, November 16

MUSIKSAAL

08:00 - 08:30 Breakfast



08:30 STUART GILDER

LMU München

Welcome, introduction and organization of DeepDyn



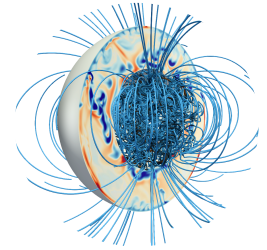
09:00 LISA TAUXE

SCRIPPS - University of California, San Diego

Paleointensity estimates from Pleistocene aged volcanics:
Implications for hemispheric asymmetry in the time-averaged field

KEYNOTE 1

SPP 2024 - DEEPDYN KICK-OFF MEETING 2023



DAY 2 CONT.

Thursday, November 16

MUSIKSAAL

GEO- & PALEOMAGNETISM



10:00 MONIKA KORTE

GFZ Potsdam

Global characteristics of geomagnetic field reversals from data and numerical simulations



10:15 SANJA PANOVSKA

GFZ Potsdam

Global time-averaged reconstructions of the geomagnetic field through deep geological time and their implications on the Earth's deep interior



10:30 FLORIAN LHULLIER

LMU München

Geomagnetic field behaviour and geodynamo characterisation at the end of the Cretaceous normal superchron



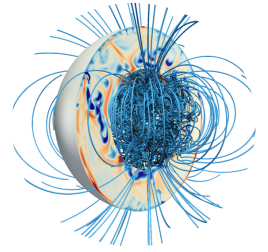
10:45 STEPHANIE SCHEIDT

Universität Köln

Contributions to the understanding of the Earth's magnetic field from detailed mineral magnetic and palaeomagnetic analyses of high-resolution, high-latitude lake sediment cores

11:00 - 11:30 Coffee break

SPP 2024 - DEEPDYN KICK-OFF MEETING 2023



DAY 2 CONT.

Thursday, November 16

MUSIKSAAL

GEODYNAMO



11:30 ANDREAS TILGNER

Georg-August-Universität Göttingen

Global characteristics of geomagnetic field reversals from data and numerical simulations



11:45 JOHANNES WICHT

Max Planck Institut für Sonnensystemforschung Göttingen

The new core paradox, the stable layer, and double diffusive convection in Earth's core



12:00 STEPHAN STELLMACH

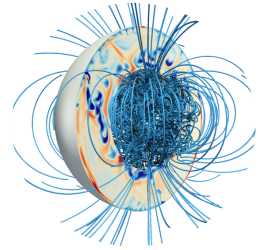
Universität Münster

Double diffusive convection in stable layers within Earth's core

12:15 DISCUSSION ON PALEOMAGNETISM AND GEODYNAMO

12:30 - 13:30 Lunch break

SPP 2024 - DEEPDYN KICK-OFF MEETING 2023



DAY 2 CONT.

Thursday, November 16

MUSIKSAAL



13:30 SEBASTIAN BAUER

Humboldt Gymnasium Vaterstetten

Humboldt Academy for Science and Engineering - An elective STEM course for interested and motivated students at our high school



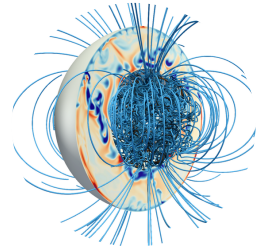
13:45 BARBARA ROMANOWICZ

University of California, Berkley

Insights on mantle dynamics from full waveform seismic imaging of the deep mantle

KEYNOTE 2

SPP 2024 - DEEPDYN KICK-OFF MEETING 2023



Thursday, November 16

DAY 2 CONT.

MUSIKSAAL

DEEP MANTLE & DYNAMICS



14:45 PETER BUNGE

LMU München

Coupling the dynamics of Earth's core and mantle



15:00 NICOLA TOSI

DLR Berlin

The co-evolution of mantle and core over Earth's history

15:15 - 15:45 Coffee break

DEEP MANTLE & DYNAMICS



15:45 CHRISTINE THOMAS

Universität Münster

Understanding the influence of deep seismic mantle structures at the core-mantle boundary on intense magnetic flux regions



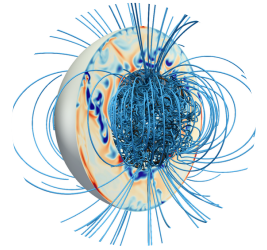
16:00 BERNHARD SCHUBERTH

LMU München

Influence of the plate motion reference frame on lowermost mantle structure, evolution, and core-mantle boundary heat flow

**16:15 DISCUSSION ON THE STRUCTURE AND
DYNAMICS OF THE DEEP MANTLE AND COUPLING
TO CORE**

SPP 2024 - DEEPDYN KICK-OFF MEETING 2023



DAY 2 CONT.

Thursday, November 16

MUSIKSAAL

MATERIAL PROPERTIES



16:45 MELANIE SIEBER

Universität Potsdam

Properties of Fe-bearing geomaterials at conditions close to the core mantle boundary



17:00 SERGEY LOBANOV

GFZ Potsdam

How significant is radiative heat transport at the core-mantle boundary?



17:15 CARMEN SANCHEZ-VALLE

Universität Münster

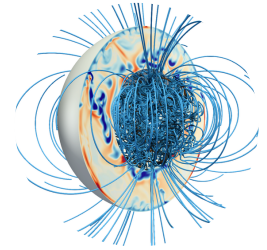
Electrical conductivity measurements on lower mantle phases to illuminate structures at the core-mantle boundary region

17:30 FIRST DISCUSSION ON MATERIAL PROPERTIES OF THE DEEP EARTH

18:00 Dinner

Following Dinner, meet in the Salon for drinks

SPP 2024 - DEEPDYN KICK-OFF MEETING 2023



DAY 3

Friday, November 17

08:00 - 09:00 Breakfast

AUDITORIUM

MATERIAL PROPERTIES



09:00 GERD STEINLE-NEUMANN

Universität Bayreuth

The role of light elements at the core-mantle boundary -
Partitioning, demixing and transport



09:15 SANDRO JAHN

Universität Köln

Thermal transport properties on lowermost mantle minerals - Insights
from atomic-scale simulations



09:30 CARSTEN MÜNKER

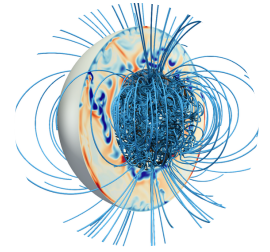
Universität Köln

Deep mantle processes and core-mantle interaction: A novel
geochemical perspective

09:45 FURTHER DISCUSSION ON MATERIAL PROPERTIES OF THE DEEP EARTH

10:00 - 10:30 Coffee break

SPP 2024 - DEEPDYN KICK-OFF MEETING 2023



DAY 3 CONT.

Friday, November 17

AUDITORIUM

BIOMAGNETISM



10:30 DANIEL PFEIFFER

Universität Bayreuth

Microevolutionary adaptations of magnetotactic bacteria to reversals of the geomagnetic field



10:45 SOPHIE ROUD

LMU München

Magnetofossilization: Formation and preservation of magnetosomes in subsurface sediments



11:00 TATIANA SAVRANSKAIA

LMU München

Magnetotactic bacteria, cosmogenic beryllium and the Earth's magnetic field: Obtaining high-quality records of magnetofossil preservation and relative paleointensity over the last 1.1 million years



11:15 WILLIAM ORSI

LMU München

Tracing the food chain from magnetotactic bacteria to protozoa under laboratory and environmental conditions

11:30 DISCUSSION ON BIOMAGNETISM

12:00 WRAP UP

12:30 Lunch