HEIBRIDS
HELMHOLTZ EINSTEIN INTERNATIONAL
BERLIN RESEARCH SCHOOL IN DATA SCIENCE

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NEWS

Latest Highlights

New Publications

"Have a great summer break!"

- HEIBRiDS PhD Office

- C. Stolle, I. Michaelis, C. Xiong, M. Rother, T. Usbeck, Y. Yamazaki, J. Rauberg, and K. Styp-Rekowski (2021). **Observing Earth's magnetic environment with the GRACE-FO mission.** Earth, Planets and Space 73, 51. https://doi.org/10.1186/s40623-021-01364-w
- K. Singh, J. Münchmeyer, L. Weber, U. Leser and A. Bande (2022). **Graph Neural Networks for Learning Molecular Excitation Spectra.** *J. Chem. Theory Comp.* DOI: 10.1021/acs.jctc.2c00255 **See also the related HZB press release.**
- I. Michaelis, K. Styp-Rekowski, J. Rauberg, C. Stolle, and M. Korte (2022). **Geomagnetic data from the GOCE satellite mission.** *Earth, Planets, and Space*. [Preprint] https://doi.org/10.1002/essoar.10511006.1
- K. Styp-Rekowski, I. Michaelis, C. Stolle, J. Baerenzung, M. Korte, and O. Kao (2022). **Machine Learning-based Calibration of the GOCE Satellite Platform Magnetometers.** *Earth, Planets, and Space.* [Preprint] https://doi.org/10.21203/rs.3.rs-1607576/v1

Recent Presentations at Conferences

- H. Stolte, J. Sinapius, I. Sadeh, E. Pueschel, D. Berge, M. Weidlich. **Detecting VHE blazar flares with deep learning**. (Oral presentation), *International Conference on Machine Learning for Astrophysics - ML4Astro*, Catania, Italy, 30 May - 2 June 2022. https://indico.ict.inaf.it/event/1692/contributions/11005/
- K. Styp-Rekowski, I. Michaelis, C. Stolle, and O. Kao. **Magnetic Datasets from Non-dedicated Satellites** (Oral Presentation), *Living Planet Symposium*, Bonn, Germany, 23-27 May 2022.
- B. Groenke, F. Miesner, M. Langer, G. Gallego and J. Boike. **An energy conserving method for simulating heat transfer in permafrost with hybrid modeling.** (Oral presentation), *Climate Informatics 2022*, Online, 9-13 May 2022.
- B. Groenke, M. Langer, G. Gallego and J. Boike. **A probabilistic analysis of permafrost temperature trends with ensemble modeling of heat transfer.** (PICO presentation), *EGU General Assembly,* Vienna, Austria, 23–27 May 2022, EGU22-10509, https://doi.org/10.5194/egusphere-egu22-10509

Grants
Helmholtz Israel Data Science Exchange Program

The Israel Exchange Program, established in 2022, provides financial support for 6-week long research stays at one of Israel's top institutions. In this application round, HEIBRiDS student **Lusiné Nazaretyan** was granted funding for the Hebrew University of Jerusalem, while

HEIBRiDS student **Hermann Stolte** and associated HEIBRiDS students **Peter Hirsch** and **Ivo Daniel** were granted funding for the Technion - Israel Institute of Technology.

Helmholtz AI grant

[The Helmholtz AI project](#) "Artificial Intelligence for X-ray Absorption Spectroscopy" has been granted to HEIBRiDS PI **Annika Bande** (lead PI) and **Kanishka Singh** from HZB, and researchers from Hereon. The core of this project is to utilize molecular graphs in combination with the probabilistic analysis of molecular motifs for a supervised machine learning prediction trained on data obtained for smaller building blocks of the huge molecules of interest. A 2-year postodc position is available in connection to this project. For more information contact [Annika Bande](#).

Announcements

HEIBRiDS PhD defense

Siddhant Agarwal successfully defended his thesis on June 21 and obtained the Dr. -Ing. degree at Faculty 4 of TU Berlin with summa cum laude.

We wish him all the best in his next career steps!

New HEIBRiDS student

Viktoriia Huryn is the first from the recently recruited cohort of seven PhD students that is joining HEIBRiDS. On June 1, she is starting on her project "Multi-resolution models for single-cell genomics data" with Uwe Ohler (MDC) and Markus Schuelke-Gerstenfeld (Charité) as supervisors.

We wish her a great start!

New Associated HEIBRiDS students

Tancredi Pentimalli has just been accepted in HEIBRiDS as an associated student. His project is on "Single cell spatial transcriptomic analysis of solid tumors" and his supervisors are Nikolaus Rajewsky (MDC), Angelika Eggert (Charité Universitatsmedizin) and Frederick Klauschen (Charité Universitatsmedizin).

Rui Li is the second newly accepted HEIBRiDS associated student. His project is on "3D reconstruction from focal series images using machine learning" and his supervisors are Mikhail Kudryashev (MDC) (MDC), Artur Zakimovich (HZDR Dresden) and Ivo F. Sbalzarini (TU Dresden).

A very warm welcome to both!

Re-register for the next semester

The re-registration period has started. Don't forget to **re-register for the winter semester 2022/23** at your respective university (FU, HU, TU, Charité) by **paying the semester fee**.

A message from Prof. Freytag

After 4 years of co-leading HEIBRiDS, I decided to step down as co-leader of the Research School. As a new generation of HEIBRiDS is organized and applied for, I felt it is time to make room for a new university member in the HEIBRiDS management team, who will lead the research school for the next exciting years to come.

I enjoyed to lead and to shape HEIBRiDS in various ways – including organizing the HEIBRiDS Lecture Series – and to help students and PIs to deal with some of the administrative requirements that made HEIBRiDS always a challenge. As a PI myself, I also enjoyed advising students in different applications domains, thus contributing to HEIBRiDS as a researcher as well.

I wish the next generation of HEIBRiDS all the best in their efforts to support many more PhD students in their efforts of performing data driven research.