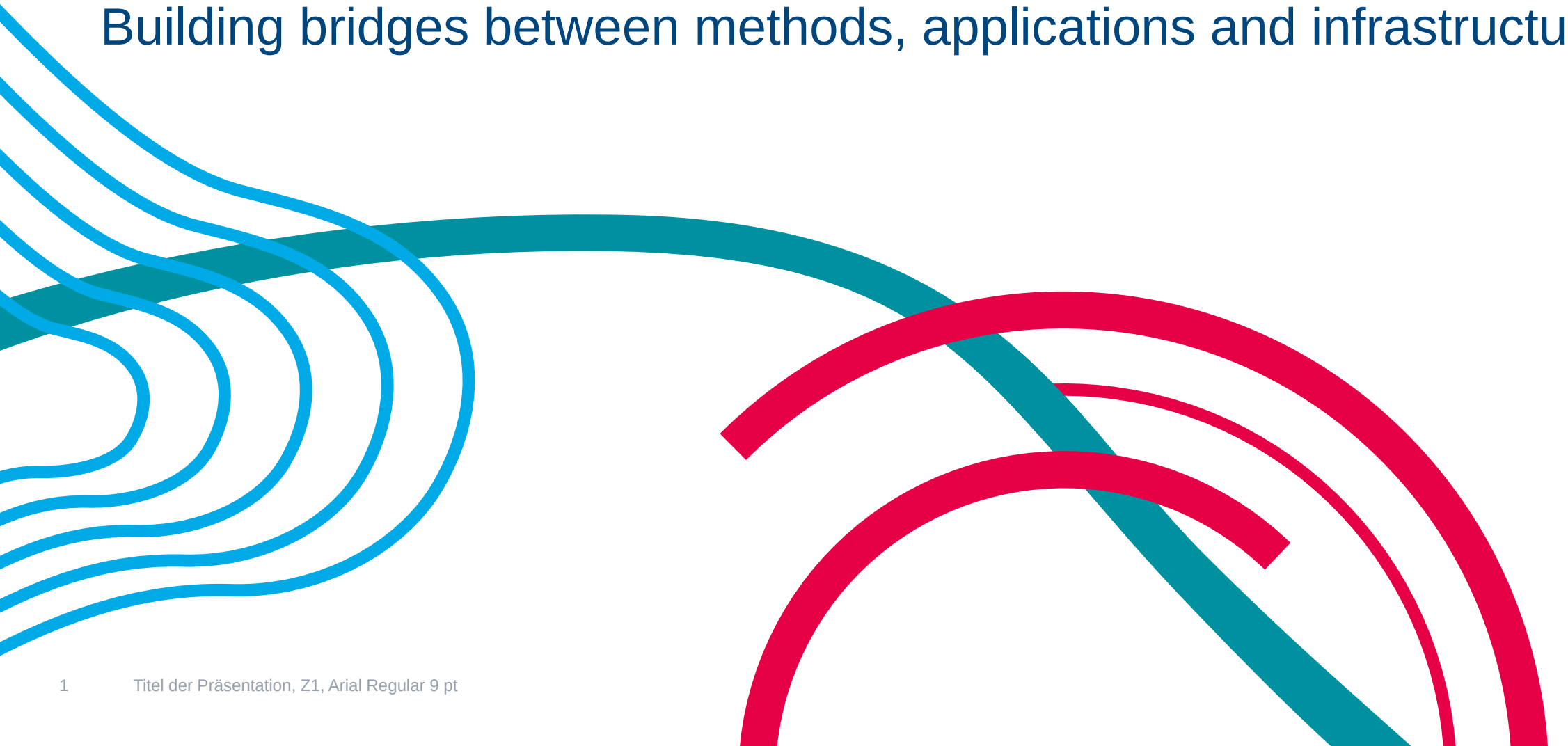
Data Science Symposium 2025

Building bridges between methods, applications and infrastructure



Helmholtz-Zentrum hereon

Artificial Intelligence/ Machine Learning methods in Earth System Sciences

13:30	The chat bot that writes poetry can do climate analysis?
	Kadow, Christopher
14:00	ARGUS – Automated Recognition of Ghost Ships and Underwater Surveillance
	Fischer, Judith
14:15	Comparative study to handle missing data in a machine learning model of tidal salinities
	Lauer, Franziska, Gusak, Georgii
14:30	Spatial Prediction Framework: From Point Measurements to Grid-Scale Estimates using Machine Learning models
	Parameswaran, Naveen Kumar
14:45	Downscaling Regional CAMS Reanalysis to the Urban Scale with XGBoost and Gaussian Processes: A Transferable Machine Learning Framework
	Ramacher, Martin Otto Paul
15:00	Reconstructing Coastal Sediment Dynamics with 4DVarNet: Neural Data Assimilation Leveraging Models and Satellite Data
	Chen, Wei

Data Management Workflows

16:30	The Helmholtz Model Zoo: Enabling AI Model Sharing and Inference in the Helmholtz Cloud
	Werners, Hans William
16:45	The Data Science Unit at GEOMAR
	Fischer, Judith
17:00	Advancing FAIR Seismic Data Publications in PANGAEA and Supplementary Visualization with the Viewer Technology of the German Marine Data Portal
	Damaske, Daniel
17:15	Increasing the availability and visibility of data deriving from AUVs and ROVs in Marine Research
	Schroller-Lomnitz, Ulrike
17:30	A novel system to integrate DSHIP data from marine research vessels
	Betz, Maximilian
17:45	Application of SMOS SSS L4 data to improve the understanding of the salinity dynamics and circulation of the Baltic Sea
	Mehrtens, Hela
18:00	Science Meets Data Spaces: FAIR Digital Objects as a Gateway to Interdisciplinary Science
	Anders, Ivonne

Helmholtz-Zentrum hereon

Metadata

09:00	The Road to FAIR: Navigating the jungle of metadata principles and recommendations towards a FAIR (Meta)Data Space
	Söding, Emanuel
09:30	Harmonizing NetCDF Metadata Workflows: A Collaborative Initiative for Enhanced Data Integration and Reusability
	Fösig, Romy
09:45	Building Knowledge Graphs with the ELN Herbie
	Kirchner, Fabian
10:00	From Sensors to Semantics: Leveraging Ontologies for Recording Sensor Maintenance Metadata in the MOIN4Herbie Project
	Baldewein, Linda

Helmholtz-Zentrum hereon

Digital Twins

10:45	Advancements in Digital Twins of the Ocean to Increase Coastal Resilience
	Staneva, Joanna
11:15	Toward a digital twin of the coastal sea: Progress in the Wadden Sea
	Lepper, Robert
11:30	Design an interactive decision-support platform for offshore renewable energy managements
	Ali, Naseem

Postersession No. 1

Towards an AI enabled forest systems platform	Sharing is caring – how umwelt.info aims for easier access to environmental and nature protection data and information in Germany
Playfair, Stephan	*Berthold, Maximilian, Deller, Jakob*
Different Portals - Different Views on the Same Content	Building explorative Data Analysis Web-Frontends with DASF and the ESRI Experience Builder
Pörsch, Andrea	*Sommer, Philipp Sebastian*
Enabling Stakeholders to Maintain PID Metadata: Which Tools are Required?	Advancing bathymetric reconstruction and forecasting using deep learning
Söding, Emanuel	*Yildiz, Irem*
iFDOs: A Key to Unlocking the Potential of Marine Image Datasets	AqQua The Aquatic Life Foundation Project: Quantifying Life at Scale in a Changing World
Schimpf, Karsten	*Vaswani, Ankita*
A Large-scale FAIR Research Data Infrastructure for Environmental Time Series Data	YOLO at Your Fingertips: Object Detection without Coding
Faber, Claas	*Fischer, Judith*
Can you Predict the Data? A Workshop on Reproducibility for Language Modelling	OSIS – Modernizing the Ocean Science Information System for marine Expedition Management
Brandizzi, Nicolo, Janz, Alicia	*Börner, Gregor*

Postersession No. 2

Statistical spatial wave downscaling in a regional sea from the global ERA5 dataset	Sidescantools - OSS for Side Scan Data Processing
Yuan, Bing	*Schumacher, Mia*
AutoCoast: Scalable Coastal Change Detection with Active Learning and Satellite Data	Developing a Common Controlled Vocabulary for Device Types in Helmholtz Earth and Environment
Pogorzelski, David	*Kottmeier, Dorothee*
Toward an AI-enhanced hydro-morphodynamic model for nature-based solutions in coastal erosion mitigation	FOCAL: Development of an open compute platform for efficient exploration of climate data locally
Dammak, Nour	*Cohrs, Jan-Christopher*
TashtegoPro: Advanced Infrared-Based Whale Detection for Marine Mammal Mitigation	Forecasting and Observing the Open-to-Coastal Ocean for Copernicus Users (FOCCUS): Advancing the Digital Ocean for Coastal Monitoring and Forecasting
Grover, Harsh	*Johnson, Kelli*
hands-on session to the new DSHIP land system	Forgejo-aneksajo: a git-annex/DataLad forge
Anselm, Norbert	*Rißе, Matthias*
Enhanced metadata handling and automation of soil moisture time series integration into the operational data hub “International Soil Moisture Network (ISMN)”	Development of a high-resolution Machine Learning model for predicting heat-related morbidity based on insurance data
Böhmer, Fay	*Torres, Jairo*
LLM-Assisted Variable Annotation using the I-ADOPT Framework	Workflow for Publishing ADPC Data
Rastegar, Arvin	*Schade, Peter*
	Morphodynamic patterns of the German Wadden Sea and predictability
	Miao, Bo

Helmholtz-Zentrum hereon