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3. Workshop - The Two Motors of the DataHub Initiative for Environmental Sciences: a Powerful FAIR and Open Research Data Infrastructure together with Joint Semantic Metadata Schemas.

Wednesday 6 November 2024 09:00 (4 hours)

In environmental sciences, time-series data is crucial for monitoring environmental processes, validating earth system models and remote sensing products, training of data driven methods and better understanding of climate processes. However, even today, there is no uniform standard and interface for making such data consistently available according to the FAIR principles. Therefore, within the DataHub initiative, seven research centers from the Helmholtz research field Earth & Environment initiated the HMC project STAMPLATE. The aim of STAMPLATE is to adopt the SensorThings API (STA) from the Open Geospatial Consortium as the main framework and interface through which such data is made accessible.

Since project start in 2023, there have been numerous side activities and initiatives, which led to the establishment of a full digital ecosystem for time-series data, built around the STA. This ecosystem includes tools for the management of sensor metadata, quality-control of observational data, the consolidation and visualization via an overarching (meta)data portal and fully automated data pipelines connecting all these tools for a simple and user-friendly publication of data according to the FAIR principles.

The challenging task of the STAMPLATE committee was to harmonize the extremely heterogeneous metadata formats stemming from the different observation domains such as the earth, atmosphere and ocean. Moreover, within the domains different metadata formats developed historically due to diverging system architectures and missing guidelines.

Main content:

- Presentation of the architecture of our ecosystem
- Introduction to the STA as generic and modern interface for time-series data
- Presentation of the work on metadata homogenization
- Presentation and hands-on-tutorials of integrated tools and sub-systems

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Session Classification: Interactive session