

Boosting the virtual research environment V-FOR-WaTer to facilitate data science across scales

Complex interdisciplinary research challenges in environmental sciences require integration of data from different sources, different domains, and different scales of measurement. Despite the growing amount and diversity of available data, they are often stored in varying formats with inadequate metadata, making them challenging to access and integrate. The virtual research environment V-FOR-WaTer aims to facilitate access and integration of these diverse data originating from university projects and state offices. The metadata scheme complies with international standards like INSPIRE and ISO19115, enabling easy publication of data through established repositories such as the GFZ Data Services.

The V-FOR-WaTer web portal features a workspace area that already offers tools for data pre-processing, scaling, and common hydrological applications. Additionally, the toolbox contains more specific tools, e.g. for geostatistics and evapotranspiration, and as the tools are added through the OGC Processes API, the toolbox can be easily extended to include user-developed tools. Users can access tools through a graphical user interface and combine, save, and share them as workflows, facilitating complex analyses and reproducibility of results.

The portal is designed to streamline typical workflows in environmental sciences, offering map operations and filter options to help with data selection. Ultimately, the portal aims to provide a virtual research environment to enable data science across scales and disciplines in environmental science.

Hauptautor: STROBL, Marcus

Co-Autoren: Prof. STREIT, Achim; Herr DOLICH, Alexander; Herr MANOJ J, Ashish; Herr BISCHOF, Balazs; Frau AZMI, Elnaz; Prof. ZEHE, Erwin; MEYER, Jörg (KIT); Herr MÄLICHE, Mirko; Dr. HASSLER, Sibylle K.

Vortragende(r): STROBL, Marcus

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