

EGU21-3356

<https://doi.org/10.5194/egusphere-egu21-3356>

EGU General Assembly 2021

© Author(s) 2022. This work is distributed under the Creative Commons Attribution 4.0 License.



## V-FOR-WaTer: A Virtual Research Environment for Environmental Research

**Marcus Strobl**<sup>1</sup>, Elnaz Azmi<sup>1</sup>, Sibylle K. Hassler<sup>2</sup>, Mirko Mälicke<sup>2</sup>, Jörg Meyer<sup>1</sup>, and Erwin Zehe<sup>2</sup>

<sup>1</sup>Karlsruhe Institute of Technology (KIT), Steinbuch Centre for Computing (SCC), Eggenstein-Leopoldshafen, Germany (marcus.strobl@kit.edu)

<sup>2</sup>Karlsruhe Institute of Technology (KIT), Institute of Water and River Basin Management, Chair of Hydrology, Karlsruhe, Germany

The virtual research environment V-FOR-WaTer aims at simplifying data access for environmental sciences, fostering data publications and facilitating data analyses. By giving scientists from universities, research facilities and state offices easy access to data, appropriate pre-processing and analysis tools and workflows, we want to accelerate scientific work and facilitate the reproducibility of analyses.

The prototype of the virtual research environment consists of a database with a detailed metadata scheme that is adapted to water and terrestrial environmental data. Present datasets in the web portal originate from university projects and state offices. We are also finalising the connection of V-FOR-WaTer to GFZ Data Services, an established repository for geoscientific data. This will ease publication of data from the portal and in turn give access to datasets stored in this repository. Key to being compatible with GFZ Data Services and other systems is the compliance of the metadata scheme with international standards (INSPIRE, ISO19115).

The web portal is designed to facilitate typical workflows in environmental sciences. Map operations and filter options ensure easy selection of the data, while the workspace area provides tools for data pre-processing, scaling, and common hydrological applications. The toolbox also contains more specific tools, e.g. for geostatistics and soon for evapotranspiration. It is easily extendable and will ultimately also include user-developed tools, reflecting the current research topics and methodologies in the hydrology community. Tools are accessed through Web Processing Services (WPS) and can be joined, saved and shared as workflows, enabling more complex analyses and ensuring reproducibility of the results.