The SWITCH-ON Virtual Water-Science Laboratory

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The SWITCH-ON Virtual Water-Science Laboratory (VWSL) aims to facilitate collaboration and support reproducible experiments in water research. The goal is to overcome geographical distance for comparative hydrology and increase transparency when using computational tools in hydrological sciences. The VWSL gives access to open data through dedicated software tools for data search and upload, and helps creating collaborative protocols for joint experiments in the virtual environment. The VWSL will help scientists with:
• Cooperation around the world - straightforward connections with other scientists in comparative analyses and collaboration, as a mean to accelerate scientific advance in hydrology.
• Repeatability of experiments –thorough review of a large variety of numerical experiments, which is a foundational principle in scientific research, and improvement of research standards.
• New forms of scientific research – by using online 'living' protocols, scientists you can elaborate ideas incrementally with a large group of colleagues and share data, tools, models, etc. in open science.

The VWSL was developed within the EU project "Sharing Water Information to Tackle Changes in Hydrology – for Operational Needs" (Grant agreement No 603587). Visitors can choose to Define, Participate or Review experiments by clicking the start buttons (http://www.switch-on-vwsl.eu/). Anyone can view protocols without log-in (that's important for Open Science) – but to create, participate and edit protocols, you need to Log-in for security reasons. During the work process, the protocol is moved from one view to another as the experiment evolves from idea, to on-going, to be completed.

The users of the Lab also get access to useful tools for running collaborative experiments, for instance: Open data Search, Data (and metadata) Upload, and Create Protocol tools. So far, eight collaborative experiments have been completed in the VWSL and resulted in research papers (published or submitted), and there are currently four on-going experiments, which also involves external participants, not paid by the project.

The VWSL is now launched and open to everyone but it will be continuously developed and sustained also after the project. This presentation will give an on-line demonstration of the major features of the present VWSL and discuss some future visions and major challenges in this e-infrastructure.