Review of the paper

Flood simulation with the RiverCure approach: The open dataset of the Águeda 2016 flood event

By Ana M. Ricardo et al.

The paper provides a use case for web-based high-level hydraulic analysis tool, designed to conduct numerical simulation from the data provided by user himself in order to access the outcomes of severe flooding. The case study suggests such assessment with the dataset on severe flooding event happened in February 2016 in the Agura River in Portugal.

The paper is a significant leap in shifting towards a new paradigm in hydrology (see e.g. (Rigon et al., 2022)): from Models as an Application (MaaA), e.g. installed on one's desktop, to Model as a Service (MaaS) – high-level environment designed for numerical experiments and results' visualization, located on the remote server and using graphical or API interface for user interaction (e.g. data handling and model setup).

The paper is well-organized and provides key features of the work motivation and the basic concept of the RiverCure portal, the data used for the numerical experiments and how the dataset is organized. Furthermore, apart from the input data the authors included the model output into the dataset as an instance of how the initial data could be utilized.

Having said that, I see several drawbacks in the dataset and the describing paper.

The paper structure could be improved. Section 2.2 Input data that describes only the spatial data is followed by Section 2.3 Output data, next Section 3 is called Data records and contains Section 3.1 Input data and Section 3.2 Output data again, which is very confusing. I suggest the authors combine the two sections to describe the data consistently – for input and output, spatial and temporal data separately.

The dataset handling should be improved. It took me a while to understand how I could download the data from the hydroshare.org website. The download process might be better documented for users not familiar with hydroshare.org or Bagit download tool. I suggest the authors prompt the download in Section 5 Data and code availability.

The dataset contents should also be improved. The listed spreadsheets *Agueda_hydrometric_PonteRedonda.xlsx* and *Agueda_hydrometric_Ribeiro.xlsx* contain only the streamflow discharge timeseries, contrary to what is stated on lines 159 – 167. The data spans for 16 days of hourly records at two gauges for streamflow discharge for the entire flooding event in February 2016

The river discharge and rain gauges locations could have been provided as a spatial coverage as well (e.g. geojson).

As of May 8th, 2023, an attempt to load the layers to QGIS desktop 3.28.3 (Windows 10) via the provided links ended up as a failure (Web Map Service https://geoserver.hydroshare.org/geoserver/HS-937927473a3a4e66a07a2e2fdd9d581e/wms?request=GetCapabilities, Web Coverage Service https://geoserver.hydroshare.org/geoserver/HS-937927473a3a4e66a07a2e2fdd9d581e/wcs?request=GetCapabilities). Please check the data availability.

The http://rivercure.inesc-id.pt/ portal is well-designed but not very useful tool unless you get an instant guest access. Several days after I requested the access to DemoOrganization it is still pending. Without the access visiting the portal narrows to browsing some satellite maps. However, the RiverCure portal functionality may not be the main aim of the dataset and paper.

I suggest the authors address the mentioned issues, revise the dataset and the manuscript accordingly, and both could be accepted for publication after consistently improved.

Line-wise and figure-wise technical comments:

L157:   special – spatial

Fig. 4:   Please round the values in the map legend

References:

Rigon, R., Formetta, G., Bancheri, M., Tubini, N., D'amato, C., David, O., and Massari, C.: HESS Opinions: Participatory Digital eARth Twin Hydrology systems (DARTHs) for everyone - a blueprint for hydrologists, Hydrol. Earth Syst. Sci., 26, 4773–4800, https://doi.org/10.5194/hess-26-4773-2022, 2022.