



OPeNDAP-based access for PCR-GLOBWB input files

Edwin Sutanudjaja¹, Egbert Gramsbergen^{2,3}, Paula Martinez Lavanchy^{2,3}, Annemiek van der Kuil⁴, Jan van der Heul^{2,3}, Vincent Brunst⁵, Otto Lange⁴, Oliver Schmitz¹, and Niko Wanders¹

¹Department of Physical Geography - Faculty of Geosciences, Utrecht University, Utrecht, the Netherlands

(e.h.sutanudjaja@uu.nl)

²TU Research Data, Delft, the Netherlands

³TU Delft Library, Delft University of Technology, Delft, the Netherlands

⁴Research Data Management Support, Utrecht University, Utrecht, the Netherlands

⁵Faculty of Geosciences, Utrecht University, Utrecht, the Netherlands

PCR-GLOBWB (Sutanudjaja et al., 2018, <https://doi.org/10.5194/gmd-11-2429-2018>, https://github.com/UU-Hydro/PCR-GLOBWB_model) is an open source global hydrology and water resources model being developed over the past two decades at the Department of Physical Geography, Utrecht University, The Netherlands. The latest version of the model has a fine spatial resolution of 5 arcmin (less than 10 km at the equator) and runs on daily resolution covering several decade simulation time period, i.e. > 50 years. Due to its fine resolution and extensive spatio-temporal extent, the total size of a complete set of PCR-GLOBWB input files is huge (about 250 GB if they are uncompressed; 45 GB if compressed, see e.g. <https://doi.org/10.5281/zenodo.1045338>). Consequently, sharing and downloading them are difficult, even for a user that wants to run the model for a limited and specific catchment area only.

In this presentation we aim to share our recent successful effort to prepare and upload PCR-GLOBWB input files to the 4TU.ResearchData server, <https://opendap.4tu.nl>, that supports OPeNDAP protocol (<https://www.opendap.org>) allowing users to access files from a remote server without the need to download the data files. This includes inspection of the metadata enabling subsampling specific ranges of the data (over space and time). OPeNDAP is especially suited to netCDF files, and, therefore, we have ensured compatibility of PCR-GLOBWB input files in the correct netCDF format, i.e. following CF conventions, before uploading the files to the remote server.

The PCR-GLOBWB input files are now available on <https://opendap.4tu.nl/thredds/catalog/data2/pcrglobwb/catalog.html>. PCR-GLOBWB users can run the model by simply adjusting the input directory location to this address (and, therefore, without having to download the entire input files). In this presentation, we aim to demonstrate on how to make such runs, not only for global extent, but also for specific or limited regions only (river basin extent).

