



## Open hydrological data at [hypeweb.smhi.se](http://hypeweb.smhi.se)

Berit Arheimer, Lena Strömbäck, Jafet Andersson, Chantal Donnelly, David Gustafsson, Ilias Pechlivianidis, and Johan Strömquist

Swedish Meteorological and hydrological Institute, FoU, Norrköping, Sweden ([berit.arheimer@smhi.se](mailto:berit.arheimer@smhi.se))

Following the EU open data strategy the Swedish Meteorological and Hydrological Institute (SMHI) is providing large parts of the databases openly available. These data are ranging from historical observations to climate predictions in various areas such as weather, oceanography and hydrology. For the Water Service called Hypeweb ([www.hypeweb.smhi.se](http://www.hypeweb.smhi.se)), we provide data for water management. So far, the data has been used in: (i) Climate change impact assessments on water resources and dynamics; (ii) The European Water Framework Directive (WFD) for characterization and development of measure programs to improve the ecological status of water bodies; (iii) Design variables for infrastructure constructions; (iv) Spatial water-resource mapping; (v) Operational forecasts (1-10 days and seasonal) on floods and droughts; (vi) Input to oceanographic models for operational forecasts and marine status assessments; and (vii) Research.

The data of Hypeweb is based on other open data sources that has been merged and re-purposed by using the Hydrological Predictions for the Environment (HYPE) model in world-wide applications with high resolution. HYPE is a dynamic, semi-distributed, process-based, and integrated catchment model. So far, the following regional domains have been modelled with different resolutions (number of subbasins within brackets): Sweden (37 000), Europe (35 000), Arctic basin (30 000), La Plata River (6 000), Niger River (800), Middle-East North-Africa (31 000), and the Indian subcontinent (6 000).

The web site provides several interactive applications for exploring results from the models. The user can explore an overview of various water variables for historical and future conditions. Moreover the user can explore and download historical time series of discharge for each basin and explore the performance of the model towards observed river flow. The presentation will give an overview of the functionality of the web site and the available hydrological datasets.

The first version of the site was launched early 2015, and new functionality and updated model data is regularly added. During the first year the site has attracted more than 2000 users from over 90 different countries, and we see an increasing trend in number of visitors. The presentation will describe the Open Data sources used, show the functionality of the web site and discuss model performance and experience from this world-wide hydrological modelling of multi-basins using open data.