

Runoff and Hydropower Modelling based on Operational Snow Cover Mapping from Polar View Snow Service

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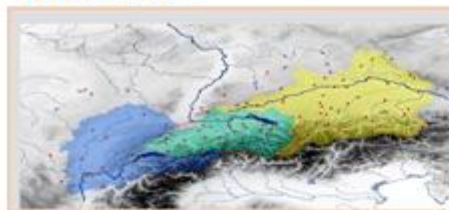
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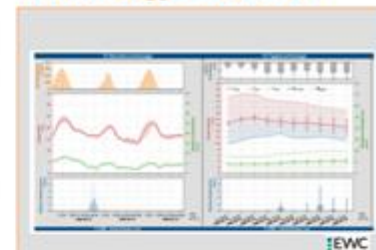
“Runoff and hydropower modelling based on operational snow cover mapping from Polar View Snow Service”

- Hydrological and Hydraulic Modelling (PROMET)
- Polar View Snow Monitoring
- Capabilities of Forecasts
- Hydropower Module of PROMET
- Provision of
 - Runoff
 - Energy Production
 - Water Temperature
- Validation Examples

Service Areas

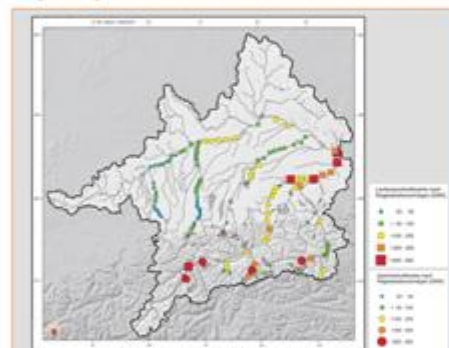


Meteorology & Forecast



- The integration of meteorological forecasts in the model chain allows runoff predictions up to hourly time steps.

Hydropower Module of PROMET



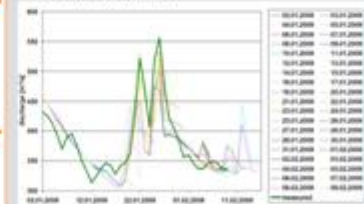
Hydropower Plants of the Upper Danube

- The PROMET model was extended by a hydropower module, which displays hydropower production for the same time steps.
- For each raster cell in the model a hydropower station can be inserted and depending on the runoff conditions, the heading and the technical specifications of the turbines, the electric power produced is calculated.
- For the Upper Danube catchment more than 100 hydropower plants were implemented.



Runoff, Water Temperature and Energy Production

- PROMET and the Hydropower module enables to provide detailed information on runoff conditions of each river section and each time.
- For all river sections the water temperature is additionally available.



Runoff Forecast Examples based on forecast datasets

- Based on runoff forecasts, the hydropower production for the day-ahead and the next days can be calculated.
- Important information for renewable energy suppliers and energy traders.