Recent developments of the airGR R package, an open source software for rainfall-runoff modelling
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GR is a family of lumped hydrological models designed for flow simulation at various time steps. The models are now available in a flexible R package called airGR (Coron et al., 2017, submitted). The models can easily be implemented on a set of catchments with limited data requirements.

Main components of the airGR R package

- Inputs
  - Precipitation and temperature time series
  - Streamflow time series
  - sunshine time and latitude
  - Hydrological curve for snow module
- Hydrological models
  - GTR (snow)
  - SGTR (SG module)
  - GTR (SG module)
  - GTR (SGRE module)
- Snow model
  - CemaNeige
- Outputs
  - Time series of simulated flows and internal state variables
  - Efficiency criteria
  - Plot diagnostics for simulation

The GR hydrological models

- Designed with the objective to be as efficient as possible for flow simulation at various time steps (from hourly to interannual) (Perrin et al., 2009)
- Their structures were developed to have warranted complexity and limited data requirements
- Can be applied on a wide range of conditions, including snowy catchments (thanks to the CemaNeige snow routine)

Getting started with the package

- Documentation available with the R command: vignette("airGR")
- A website provides information to get started with the airGR functions and to be up to date on the recent developments

https://webgr.irstea.fr/airGR-website/

References

  https://webgr.irstea.fr/airGR/v1.0.5.12

Download the airGR package

The airGR package is available on the Comprehensive R Archive Network:

https://CRAN R-project.org/package=airGR/

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