

# STAR

STATistical Regional model



## Model Description:

STAR represents a new statistical method for regional simulations. Its simulations are constrained only by the parameters of a linear regression line for a characteristic climatological variable. Simulated series are generated by resampling from segments of observation series such that the resulting series comply with prescribed regression parameters. Physical consistency is guaranteed between different variables and in space and time.

## Input Data:

Daily meteorological parameters for any number of stations and years; trend of a selected meteorological parameter for a defined time period

## Results:

Future climate scenario with a defined number of realizations

## Resolution:

Temporal: day; spatial: any resolution possible

## Operating system:

Unix

## Programming language:

C++

## Model run time:

Dependent on the number of stations, realizations and scenario length

## Scheme of the module structure:

## Developer:

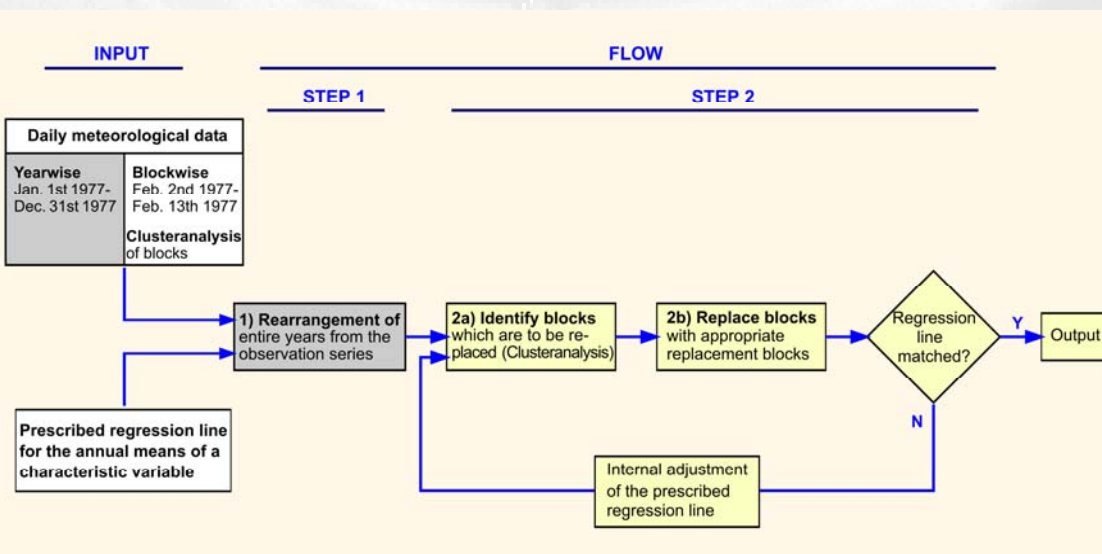
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## References:

B. Orłowsky,  
F.-W. Gerstengarbe,  
P. C. Werner (2007)  
A resampling scheme for regional climate simulations and its performance compared to a dynamical RCM. Theor. Appl. Climatol. in print.



## Role of the model within the GLOWA-Elbe project

Temporal and spatial high-dissolved actual and future climate scenarios for a selected region

**Model interfaces to (input data):** observed data sets

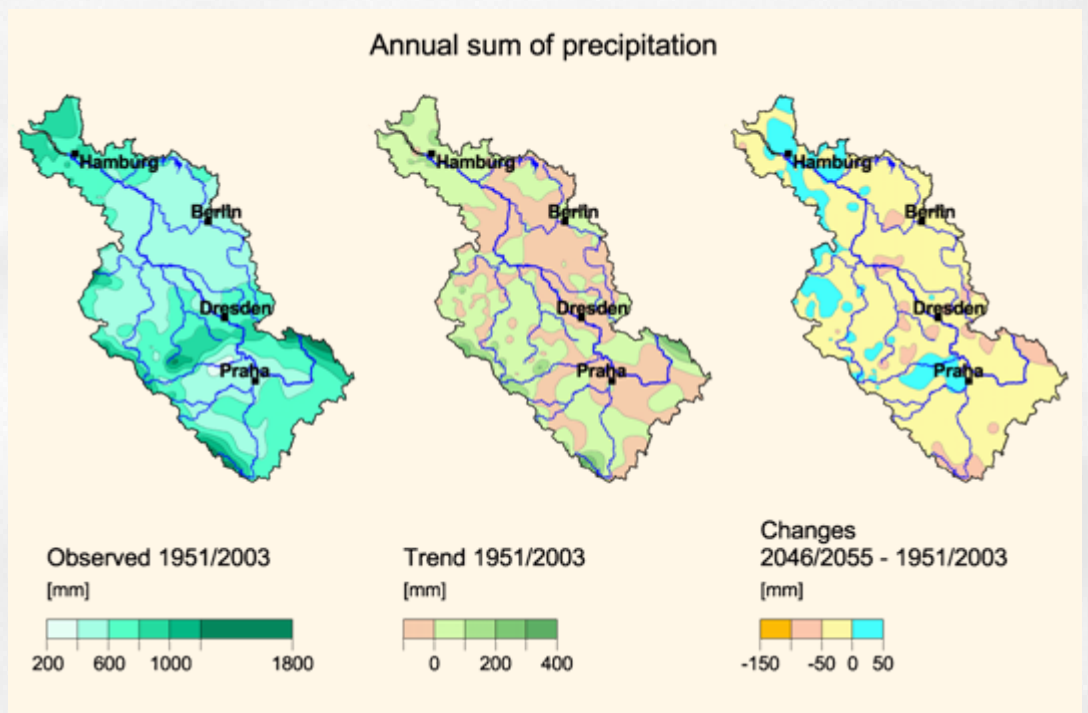
**Model interfaces to (input data):** all models used in the project

**Peculiarities:** -

**Time frames:** Validation: 1951 - 2005

Projection: 2006 - 2055

**Model results:**



## Potential users and application areas:

All users who need informations on the future climate development of a selected region

## Availability:

For code and documentation please contact [gerstengarbe@pik-potsdam.de](mailto:gerstengarbe@pik-potsdam.de)

## Resources needed for set-up of site-specific model:

High, pending on the experience of the user 4 – 6 month.

## Target groups:

- Research institutes
- Universities
- Consultants



The GLOWA-Elbe project is part of the BMBF funded research initiative GLOWA – Global Change in the Water Cycle. The project started in 2000 and will end in 2010.

More informations about the project are to find here:

<http://www.glowa-elbe.de>