

GSN Simulation Interface for GeoTop

Presentation

The interface is composed of three sections: input data, simulation control and output. Each section is described hereafter.

Input data

Stations

lafouly_st_1033
lafouly_st_1034
lafouly_st_1035
lafouly_st_1036
lafouly_st_1037

Filters

Field: Precipitations [mm h-1] Filter type: accumulate Arguments: 3600 Add

HNW::filter1 = accumulate; HNW::arg1 = 3600 Remove

Interpolations

Field: Relative humidity (0 - 1) Arguments: IDW Add

VW::algorithms = wind Remove

Control

From: 09/09/2009 09:00:00
To: 09/09/2009 10:00:00
Window size (seconds): 3600
Initialize Start Stop

Output

Latest step: (1) 20090909 09:00:00
Layer 1

11_TxyL0001N0001.asc

North

572000 573000 574000 575000 576000 577000 578000

79000 80000 81000 82000 83000 84000 85000

2 4 6 8 10

1. Input data

Input data is composed of three parts: stations, filters and interpolations.

1.1. Selecting stations

You need to select the meteo stations that will be used for the simulation. Stations are selected in a combo box with the control key for multiple selections.



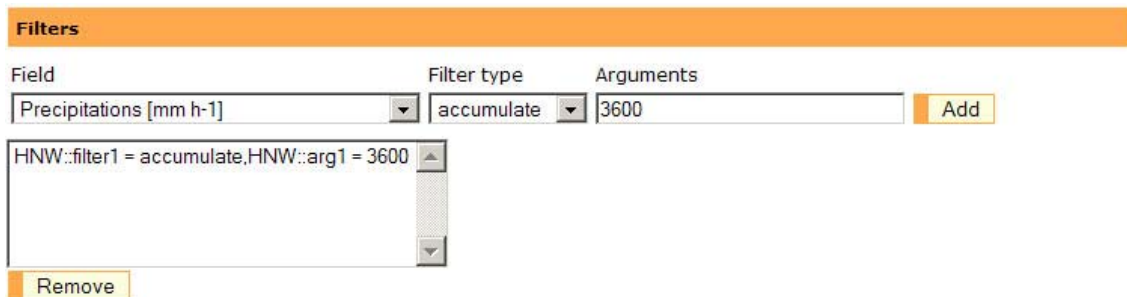
1.2. Adding filters

User needs to set filters for the meteo data. Measures can be accumulated, averaged, and cleaned before being sent to the simulation model.

Available filters are¹:

- **rate**: calculates the derivative at the current point and reject the point if the derivative is above a given threshold.
- **min_max**: filter all values outside of the interval [min, max], soft operation supported
- **min**: filter out all values less than the given parameter, soft operation supported
- **max**: filter out all values greater than the given parameter, soft operation supported
- **resample**: resamples (if necessary) the data so that if a required time stamp is between two data points, an interpolated value will be returned (instead of nodata).
- **accumulate**: accumulates the data on a given interval (Seconds).
- **median_avg**: computes median average over a given window
- **mean_avg**: computes mean average over a given window
- **wind_avg**: vector average over a given window

The user can select the field (e.g. precipitation), the filter to apply (accumulation) and an argument (window size).



1.3. Adding interpolations

This deals with spatial interpolations. Available interpolation algorithms are:

- ConstAlgorithm
- ConstLapseRateAlgorithm

¹ http://www.geotop.org/cgi-bin/moin.cgi/Running_GEOtop_using_MeteoIO_library

- SimpleWindInterpolationAlgorithm
- StandardPressureAlgorithm
- IDWAlgorithm
- IDWLapseAlgorithm
- RHAlgorithm

For more details refer to MeteoIO documentation.

Interpolations

| Field | Arguments | |
|---|-----------|--------|
| Relative humidity (0 - 1) | IDW | Add |
| <div style="border: 1px solid #ccc; padding: 5px; min-height: 40px;"> RH::algorithms = IDW </div> | | |
| | | Remove |

2. Simulation control

User specifies the start time, end time and window size (in seconds) for the simulation. The initialize button sets the parameters of the simulations according to what the user has selected. The start and stop buttons control simulation running.

Simulation control

| | |
|-----------------------|--|
| From | <input style="width: 60%;" type="text" value="09/09/2009 09:00:00"/> |
| To | <input style="width: 60%;" type="text" value="09/09/2009 10:00:00"/> |
| Window size (seconds) | <input style="width: 60%;" type="text" value="3600"/> |

Initialize
Start
Stop

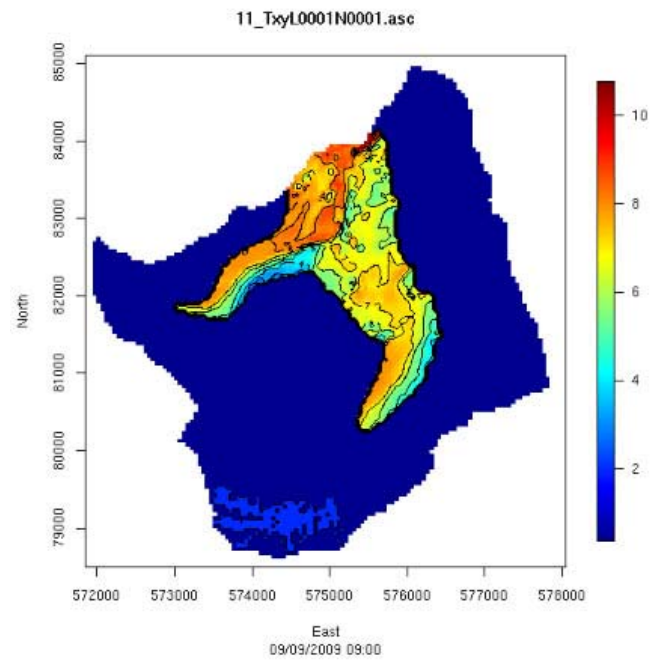
3. Output

The results of the simulation are shown as maps in the output section for the different layers.

Output

Latest step (1) 20090909 09:00:00

Layer 1



Layer 2

