

Calibrate the model at daily and monthly timesteps

with the „userReadSwatOuptut“ option

How to reproduce this example

1. Download R-SWAT
2. Replace the file „*R/userReadSwatOutput.R*“ with the file „*data/examples/userReadSwatOutput/userReadSwatOutput.R*“
3. Use the two „observed“ data files (obs_var_1.txt and obs_var_2.txt) in the folder *data/examples/userReadSwatOutput* for calibration

Note: *In this example, we calibrate the model for streamflow at (1) the catchment outlet at daily time step and (2) the outlet of subcatchment 2 at monthly timestep*

~/GitHub/SWATshiny - Shiny

http://127.0.0.1:6878

Open in Browser

Publish

R-SWAT

About this app

1. General Setting

2. Parameter sampling

3. Run SWAT

4. Evaluate output

4.1.Objective function

4.2. Sensitivity Analysis

4.3. Optimization/Uncertainty

Visualization

watout.dat

output.hru

output.rch

output.sub

1. Working folder

C:/data/workingFolder

Help

2. TxtInOut folder

C:/data/Scenarios/Default/TxtInOut

Display HRU info from TxtInOut folder

Help

3. Select executable SWAT file

Click here to select

C:/data/swat_64rel.exe

Help

4. Files with list of all SWAT parameters

Click here to select

C:/data/swatParam.txt

Display content of the SWAT parameter file

Help

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1. Select SWAT parameters for calibration and/or sensitivity analysis

☐ Display help for parameter selection

Help

	Parameter	Change	Min	Max	Subbasin	Landuse	Soil	Slope
1	GW_DELAY.gw	absolute ▼	50	450	All	All	All	All
2	CN2.mgt	relative ▼	-0.25	0.25	All	All	All	All
3	SOL_K.sol	relative ▼	-0.25	0.25	All	All	All	All
4	ALPHA_BF.gw	replace ▼	0.01	0.4	All	All	All	All
5	ESCO.hru	replace ▼	0.5	0.99	All	All	All	All
6	SURLAG.hru	replace ▼	0.1	10	All	All	All	All
7	CH_K2.rte	replace ▼	0	0.5	All			
8	SURLAG.bsn	replace ▼	3	6				

Help

[Click here to check the input table \(IMPORTANT\)](#)

2. Select sensitivity or calibration approach

Help

Sensi_Cali_(uniform_Latin_Hypercube_Sampling) ▼

3. Additional information about the selected sensitivity/calibration approach

Help

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>> watout.dat

>> output.hru

>> output.rch

>> output.sub

1. Define model outputs for extraction

Help

	FileType	FileName	Column	Reach
1	watout.dat	watout.dat	4	
2	userReadSwatOutput		1	

☒ Display corresponding observed file names

Show 25 entries

Search:

Variable number	Output file name	Column number	Reach/HRU/Subbasin/Reservoir number	Observed file name should be (see 4.1)
1	watout.dat	4		obs_var_1.txt
2	userReadSwatOutput_var_1			obs_var_2.txt
<input type="text" value="Variable number"/>	<input type="text" value="Output file name"/>	<input type="text" value="Column number"/>	<input type="text" value="Reach/HRU/Subbasin/Reservoir number"/>	<input type="text" value="Observed file name should be (see 4.1)"/>

Showing 1 to 2 of 2 entries

 1

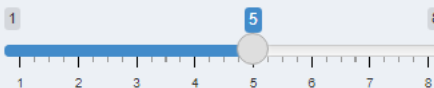
2. Select date range

Help

 to

3. Select number of parallel runs (cores)

Help



4. Run SWAT

Help

5. See simulation report

Help

☒ Open file CurrentSimulationReport.log☐ Display all parameter sets

Finished_simulation_number 1 out_of 2 on_core 4 2021-11-23 19:49:59

Finished_simulation_number 1 out_of 2 on_core 5 2021-11-23 19:49:59

Finished_simulation_number 1 out_of 2 on_core 1 2021-11-23 19:49:59

Finished_simulation_number 1 out_of 2 on_core 3 2021-11-23 19:49:59

Finished_simulation_number 1 out_of 2 on_core 2 2021-11-23 19:49:59

Finished_simulation_number 2 out_of 2 on_core 4 2021-11-23 19:50:05

Finished_simulation_number 2 out_of 2 on_core 5 2021-11-23 19:50:05

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1. Select objective function

NSE

Help

2. Get observed data files

Click here to select

C:/data/obs_var_1.txt C:/data/obs_var_2.txt

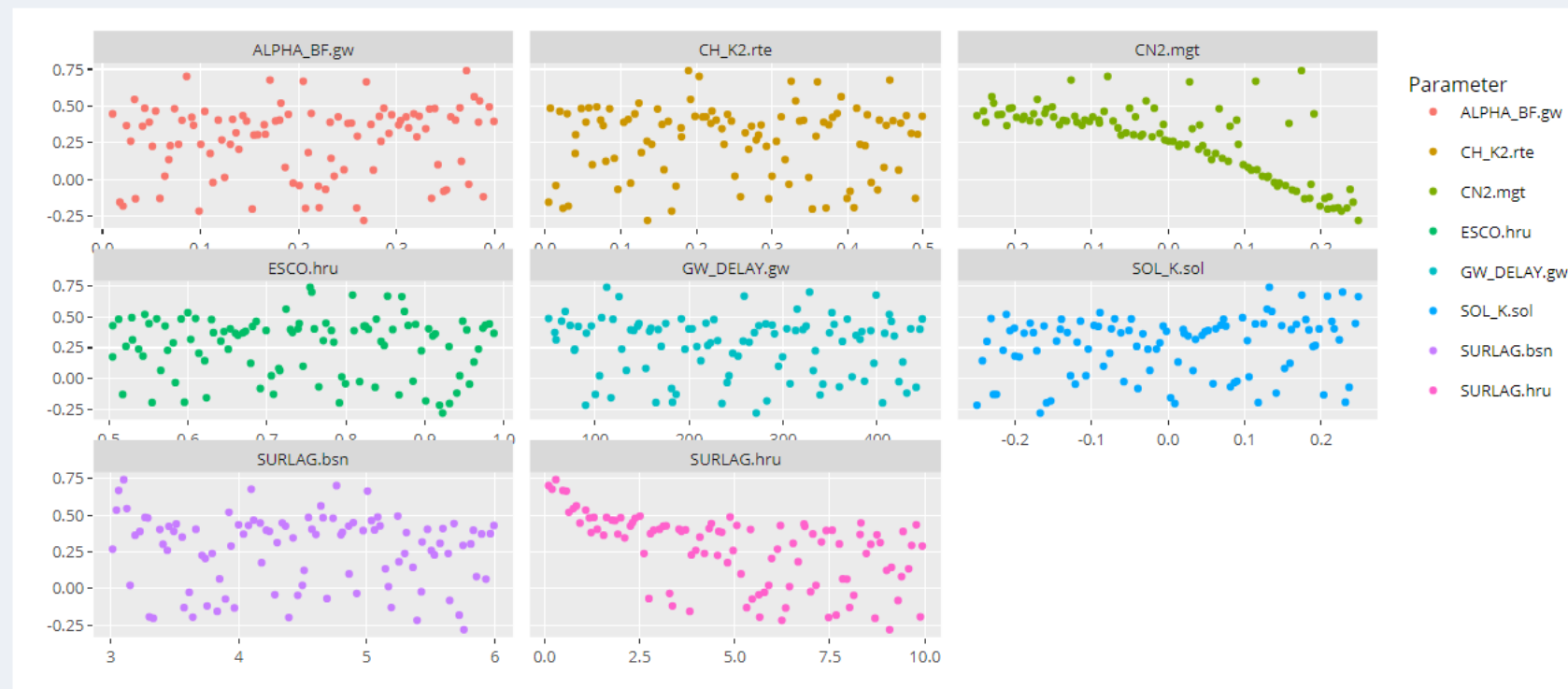
Help

☐ Display observed variable

Help

3. Calculate objective function

Click here to calculate objection

☒ Check here to display plot☐ Check here to display result

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Visualization

1. Display parameter sensitivity analysis

[Click here to do sensitivity analysis](#)

Show 25 entries

Search:

Parameter	t_stat	absolute_t_stat	p_value
GW_DELAY.gw	-1.3052333	1.3052333	1.951041e-01
CN2.mgt	-14.1701833	14.1701833	9.455837e-25
SOL_K.sol	2.3351823	2.3351823	2.173267e-02
ALPHA_BF.gw	0.3362491	0.3362491	7.374571e-01
ESCO.hru	-1.3625423	1.3625423	1.763895e-01
SURLAG.hru	-8.2062475	8.2062475	1.430464e-12
CH_K2.rte	0.4916094	0.4916094	6.241792e-01
SURLAG.bsn	-0.4404584	0.4404584	6.606496e-01

Parameter

t_stat

absolute_t_stat

p_value

Showing 1 to 8 of 8 entries

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Visualization

1. Input behavioral threshold

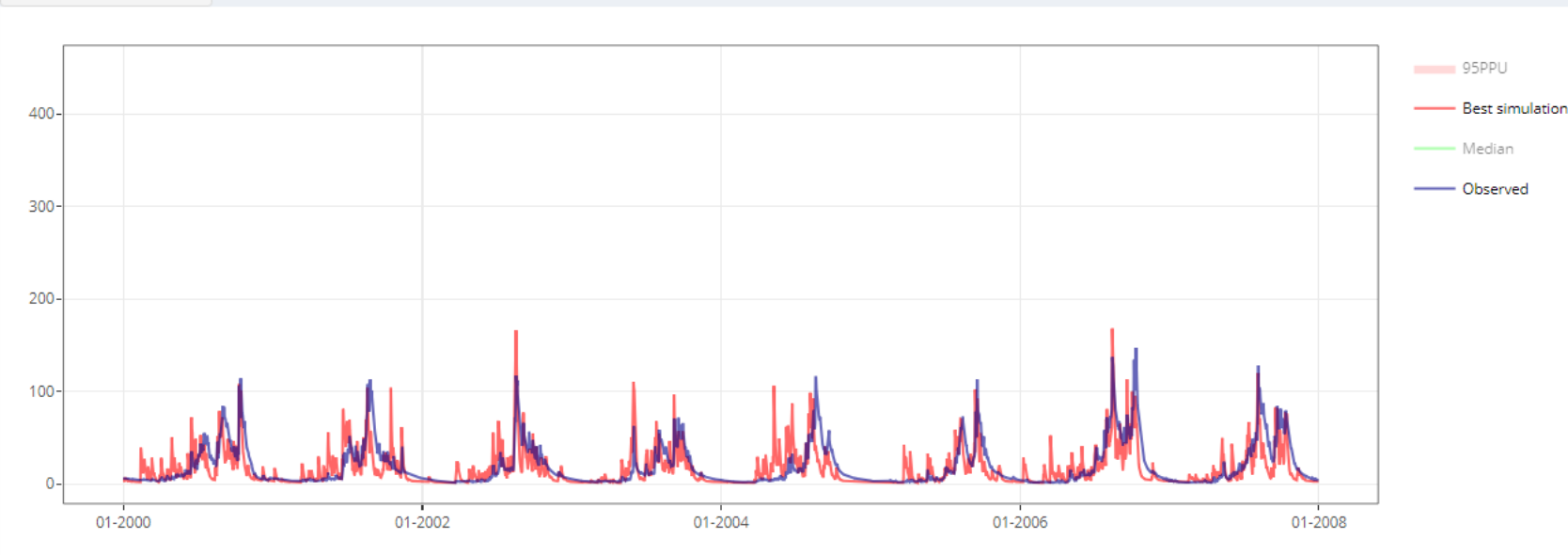
0.1

check threshold value OK

2. Input variable number to plot

1

2

☒ Display plot[Click here to save plot](#)☐ Display table of the above plot☐ Display table of behavioral parameter range☒ Display p-factor and r-factor

p-factor = 0.5564681724846 r-factor = 0.690182674126175

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1. Input behavioral threshold

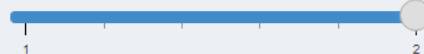
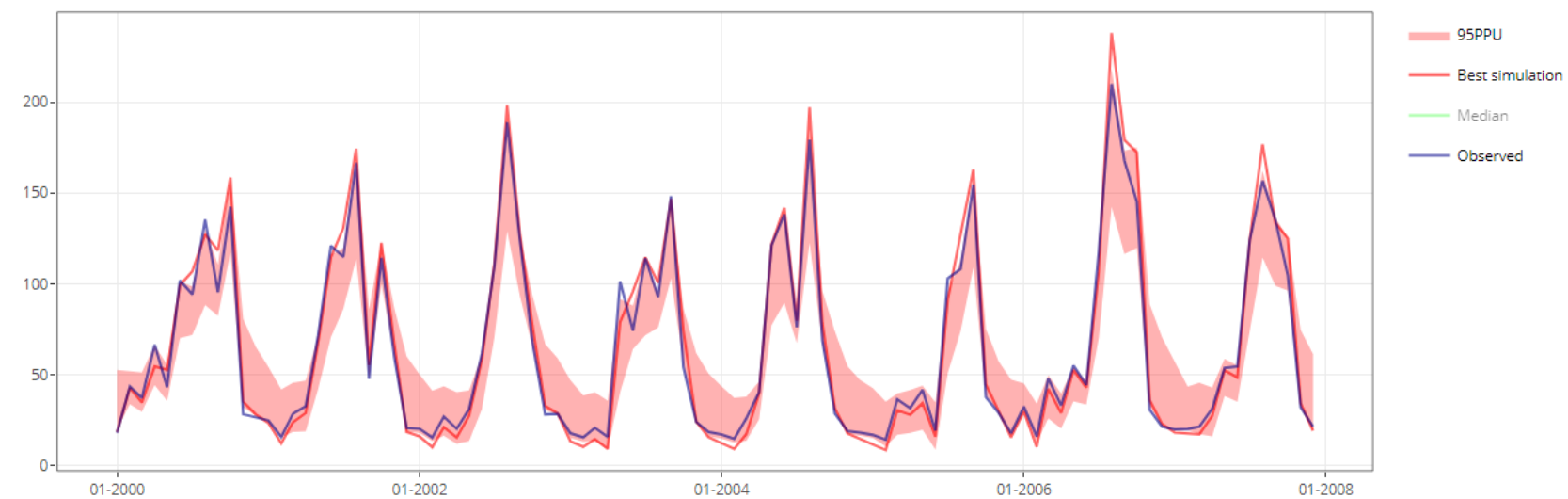
0.1

check threshold value OK

2. Input variable number to plot

1

2

☒ Display plot[Click here to save plot](#)☐ Display table of the above plot☐ Display table of behavioral parameter range☒ Display p-factor and r-factor

p-factor = 0.76041666666667 r-factor = 0.661117868939127