

# Parameter ensemble simulation

A parameter ensemble simulation may be used to simulate (more) results of an automatic calibration that has resulted in a set of best parameters. A parameter ensemble simulation may be used to simulate, with output of results, all parameters sets that has been used during calibration with an MonteCarlo method. A parameter ensemble simulation may be used to simulate a set of parameters provided from outside HYPE.

The parameter ensemble simulation is set in info.txt parensemble Y. It cannot be used at the same time as an automatic calibration calibration N. There are three alternatives to provide parameter sets for parameter ensemble simulation. They can be provided through [bestsims.txt](#), [allsim.txt](#) or as a set of numbered [par.txt](#) files (par\_001.txt, par\_002.txt etc.). If separate par-files is to be used, no additional information has to be given. If the alternative of bestsims or allsim is used, the [optpar.txt](#) file have to have the same settings for calibration parameters as the [optpar.txt](#) file used to create them. This so that HYPE can understand which parameters (and landuse or soil type) the parameter values in the file belongs to. In addition the criteria given in the [info.txt](#) file need to be kept, or at least be the same number of unique variable combinations, as when the allsim or bestsims file was created.

To run a parameter ensemble simulation based on [allsim.txt](#) or [bestsims.txt](#) additional information is needed in the [optpar.txt](#) file to determine which source to use. If you want to use the parameters in [bestsims.txt](#) set task BS, and if you want to use the parameter sets in [allsim.txt](#) set task AS. If you want to use [par.txt](#) files, do not set any of these two tasks in optpar.txt. The [bestsims.txt](#), [allsim.txt](#) and separate par-files are read from modeldir.

Example of a [optpar.txt](#) file for simulation of [bestsims.txt](#).

```
task      MC
task      WA
task      BS
num_mc   30
num_ens  5
num_zoom 0.8

...
sedon    0.0005
sedon    0.05
sedon    0.0001
```

The old settings of optpar.txt can be left untouched for a parameter ensemble simulation, they will not be used. They can give information on how the parameters were created. A caution, it can be confusing to someone reading the file though.