timeXXXX.txt

HYPE time output files are one of the standard result files for time series output from HYPE, the other are map output files (like time output files, but transposed), basin output files and region output files.

Time output files each contain results for a single HYPE variable for all modelled sub-basins or if it is a output regional variable for all modelled output regions. To write time output files, `timeoutput` is specified for the variables of interest in the info.txt file.

Example snippet of a info.txt file:

```
!! time outputs for measured and simulated discharge, regional runoff
timeoutput variable rout cout rgcrun
timeoutput meanperiod 4
timeoutput decimals 4
```

Time output files are written to the resultdir folder. **XXXX** in the file name is substituted by the variable ID (same ID as used in info.txt, for example *timeCOUT.txt*). All HYPE variable IDs are described in the **list of HYPE variables**. In addition upstream aggregated variables and output region variables may be printed, e.g. *timeRGCRUN.txt*.

Time output files contain tab-separated data with column-wise subbasins (or output regions) and row-wise time periods. The first row contains a text comment. It briefly describes the HYPE variable which is contained in the file. Row two contains column headings. The first column contains a date-time string (format depending on `writeformat` specified in *info.txt* and on the length of period for which the value is valid, `meanperiod`), following columns contain model results of the given variable for all sub-basins in the model set-up. Missing values are given as -9999.

Example structure of a map output file *timeCOUT.txt* with daily discharge averages for a model with four sub-catchments:

```
!!This is a file with timeseries of comp outflow olake in m3/s
DATE        4080    4090    4113    4139
2009-07-01  0.0096  0.0096  0.1511  0.1615
2009-07-02  0.0088  0.0089  0.1469  0.1570
2009-07-03  0.0093  0.0093  0.1482  0.1581
2009-07-04  0.0087  0.0088  0.1450  0.1551
2009-07-05  0.0134  0.0134  0.1602  0.2025
2009-07-06  0.0198  0.0200  0.1766  0.2642
       ...     ...     ...     ...     ...
```

It is possible to print out timeoutput files for several mean periods at the same simulation. This is controlled from the info-file by numbering the different output information rows for the different types (see info.txt for example). If this option is used the time outputs will be separated by adding the mean period as a code in the file name, e.g. timeCOUT_YR.txt holds yearly average of *cout*.

When ensemble or sequence simulations are made, the results from simulations (I = 1 .. *n* or I = sequence number > 0) are written to files named timeXXXX_00I.txt, where *n* is defined by `num_ens` in optpar.txt. Alternatively, if a Monte Carlo simulation is done with task set to write all simulations (`task WS` in optpar.txt) files will be named *XXXXXXX_000000I.txt*. In this case up to 9999999

simulations can be saved.

Class output files may also be called timeXXXX, but they are followed by a suffix naming the class group, e.g. timeCRUN_CG1.txt for the CG1 class group's local runoff. The file comment will contain information on which classes are included in the group. Otherwise the file is similar to the ordinary time-files. All subbasins class group variable data is printed.