Package 'ROpenFLUID'

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Type Package

Title R Interface to OpenFLUID Platform Framework for Modelling and Simulation of Landscapes

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Description Provides a collection of functions to load, parameterize, run and analyze OpenFLUID simulations within the GNU R environment.

URL http://www.openfluid-project.org

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Depends R (>= 2.6.2)

Suggests RUnit

LazyLoad yes

RoxygenNote 7.0.2

R topics documented:

`OpenFLUID.addExtraObserversPaths`
Adds paths to search for observers

Description

Adds paths to search for observers

Usage

```
OpenFLUID.addExtraObserversPaths(paths)
```

Arguments

`paths`	the colon separated paths to add

See Also

`OpenFLUID.getObserversPaths`

`OpenFLUID.getExtraObserversPaths`

`OpenFLUID.resetExtraObserversPaths`

Examples

```
## Not run:
OpenFLUID.addExtraObserversPaths("/first/path")
OpenFLUID.addExtraObserversPaths("/second/path:/third/path")  # Unix
OpenFLUID.addExtraObserversPaths("/second/path;/third/path")  # Windows
OpenFLUID.addExtraObserversPaths(c("/fourth/path","/fifth/path"))

## End(Not run)
```

`OpenFLUID.addExtraSimulatorsPaths`
Adds paths to search for simulators

Description

Adds paths to search for simulators

Usage

```
OpenFLUID.addExtraSimulatorsPaths(paths)
```

Arguments

paths	the colon separated paths to add

See Also

OpenFLUID.getSimulatorsPaths

OpenFLUID.getExtraSimulatorsPaths

OpenFLUID.resetExtraSimulatorsPaths

Examples

```
## Not run:
OpenFLUID.addExtraSimulatorsPaths("/first/path")
OpenFLUID.addExtraSimulatorsPaths("/second/path:/third/path")  # Unix
OpenFLUID.addExtraSimulatorsPaths("/second/path;/third/path")  # Windows
OpenFLUID.addExtraSimulatorsPaths(c("/fourth/path","/fifth/path"))

## End(Not run)
```

OpenFLUID.addVariablesExportAsCSV

Adds export of simulation variables as CSV files for a given units class

---

Description

Adds export of simulation variables as CSV files for a given units class

Usage

```
OpenFLUID.addVariablesExportAsCSV(
  ofblob,
  unitclass,
  unitid = NULL,
  varname = "*",
  precision = 0
)
```

Arguments

ofblob	the simulation definition blob
unitclass	the units class to add for simulation variables export
unitid	the unit ID (optional)
varname	the name of the variable(s) (optional)
precision	the number of digits of the variables (optional)

See Also

OpenFLUID.loadResult

Examples

```
## Not run:
OpenFLUID.addVariablesExportAsCSV(ofsim, "TU")
OpenFLUID.addVariablesExportAsCSV(ofsim, "TU",1, "var1",precision = 14)
OpenFLUID.addVariablesExportAsCSV(ofsim, "TU",2, "var1;var2")
OpenFLUID.addVariablesExportAsCSV(ofsim, "TU",2, c("var1","var2"))
OpenFLUID.addVariablesExportAsCSV(ofsim, "TU",c(3, 5), c("var1","var2"))
OpenFLUID.addVariablesExportAsCSV(ofsim, "TU",1, "*")

## End(Not run)
```

OpenFLUID.createAttribute

Creates an attribute for all spatial units of a class, initialized with a default value

---

Description

Creates an attribute for all spatial units of a class, initialized with a default value

Usage

```
OpenFLUID.createAttribute(ofblob, unitclass, attrname, attrval)
```

Arguments

ofblob	the simulation definition blob
unitclass	the unit class
attrname	the attribute name
attrval	the default attribute value for alla units

See Also

OpenFLUID.getAttribute

OpenFLUID.setAttribute

OpenFLUID.removeAttribute

Examples

```
## Not run:
OpenFLUID.createAttribute(ofsim, "SU","area",1.0)
OpenFLUID.createAttribute(ofsim, "SU","code","NONE")

## End(Not run)
```

OpenFLUID.deleteSimulationBlob

Delete simulation blob

Description

Delete simulation blob

Usage

```
OpenFLUID.deleteSimulationBlob(ofblob)
```

Arguments

ofblob	the simulation definition blob

Examples

```
## Not run:
OpenFLUID.deleteSimulationBlob(ofsim)

## End(Not run)
```

OpenFLUID.getAttribute

Returns an attribute value for a given spatial unit

Description

Returns an attribute value for a given spatial unit

Usage

```
OpenFLUID.getAttribute(ofblob, unitclass, unitid, attrname)
```

Arguments

`ofblob`	the simulation definition blob
`unitclass`	the unit class
`unitid`	the unit ID
`attrname`	the name of the attribute

Value

the attribute value

See Also

`OpenFLUID.createAttribute`

`OpenFLUID.setAttribute`

`OpenFLUID.removeAttribute`

Examples

```
## Not run:
val = OpenFLUID.getAttribute(ofsim, "SU",18, "length")

## End(Not run)
```

`OpenFLUID.getAttributes`

Returns the attributes values for given spatial units and attributes names

---

Description

Returns the attributes values for given spatial units and attributes names

Usage

```
OpenFLUID.getAttributes(
  ofblob,
  unitclass,
  unitids,
  attrnames,
  unitidsAsRownames = TRUE
)
```

Arguments

ofblob	the simulation definition blob
unitclass	the unit class
unitids	the vector of unit IDs
attrnames	the vector of names of the attributes
unitidsAsRownames	if TRUE rename row as unitids, if FALSE add a column of unitids

Value

a data.frame (unitids x attrnames) of the attribute values

See Also

OpenFLUID.setAttributes

Examples

```
## Not run:
valdf = OpenFLUID.getAttributes(ofsim, "SU",c(18, 23), c("length","width"))

## End(Not run)
```

OpenFLUID.getAttributesNames

Returns all the attributes names of an units class

Description

Returns all the attributes names of an units class

Usage

```
OpenFLUID.getAttributesNames(ofblob, unitclass)
```

Arguments

ofblob	the simulation definition blob
unitclass	the class unit

Value

a vector of attributes names

See Also

OpenFLUID.getModelGlobalParamNames

OpenFLUID.getGeneratorParamNames

OpenFLUID.getSimulatorParamNames

OpenFLUID.getObserverParamNames

Examples

```
## Not run:
varnames = OpenFLUID.getAttributesNames(ofsim, unitclass)

## End(Not run)
```

OpenFLUID.getDefaultDeltaT

Returns the default time step of the simulation

Description

Returns the default time step of the simulation

Usage

```
OpenFLUID.getDefaultDeltaT(ofblob)
```

Arguments

ofblob	the simulation definition blob

Value

the time step value in seconds

See Also

OpenFLUID.setDefaultDeltaT

Examples

```
## Not run:
deltat = OpenFLUID.getDefaultDeltaT(ofsim)

## End(Not run)
```

`OpenFLUID.getExtraObserversPaths`
Returns the added paths to search for observers

Description

Returns the added paths to search for observers

Usage

```
OpenFLUID.getExtraObserversPaths()
```

Value

a vector of paths

See Also

`OpenFLUID.addExtraObserversPaths`

`OpenFLUID.getObserversPaths`

`OpenFLUID.resetExtraObserversPaths`

Examples

```
## Not run:
paths = OpenFLUID.getExtraObserversPaths()

## End(Not run)
```

`OpenFLUID.getExtraSimulatorsPaths`
Returns the added paths to search for simulators

Description

Returns the added paths to search for simulators

Usage

```
OpenFLUID.getExtraSimulatorsPaths()
```

Value

a vector of paths

See Also

`OpenFLUID.addExtraSimulatorsPaths`

`OpenFLUID.getSimulatorsPaths`

`OpenFLUID.resetExtraSimulatorsPaths`

Examples

```
## Not run:
paths = OpenFLUID.getExtraSimulatorsPaths()

## End(Not run)
```

`OpenFLUID.getGeneratorParam`

Returns a the value of a generator parameter

Description

Returns a the value of a generator parameter

Usage

```
OpenFLUID.getGeneratorParam(ofblob, unitclass, varname, paramname)
```

Arguments

`ofblob`	the simulation definition blob
`unitclass`	the unit class to which the generator is applied
`varname`	the variable name to which the generator is applied
`paramname`	the name of the parameter

Value

the parameter value

See Also

`OpenFLUID.setGeneratorParam`

Examples

```
## Not run:
val = OpenFLUID.getGeneratorParam(ofsim, "SU","var.flux","fixedvalue")

## End(Not run)
```

`OpenFLUID.getGeneratorParamNames`
Returns all parameters names of a generator

Description

Returns all parameters names of a generator

Usage

```
OpenFLUID.getGeneratorParamNames(ofblob, unitclass, varname)
```

Arguments

`ofblob`	the simulation definition blob
`unitclass`	the name of the variable generated
`varname`	the name of the variable generated

Value

a vector of parameters names

See Also

`OpenFLUID.getModelGlobalParamNames`

`OpenFLUID.getSimulatorParamNames`

`OpenFLUID.getObserverParamNames`

Examples

```
## Not run:
varnames = OpenFLUID.getGeneratorParamNames(ofsim, "SU","var1")

## End(Not run)
```

`OpenFLUID.getGeneratorParams`
Returns the values of generator parameters

Description

Returns the values of generator parameters

Usage

```
OpenFLUID.getGeneratorParams(ofblob, unitclass, varname, paramnames)
```

Arguments

`ofblob`	the simulation definition blob
`unitclass`	the unit class to which the generator is applied
`varname`	the variable name to which the generator is applied
`paramnames`	the names of the parameters

Value

the parameter values

See Also

`OpenFLUID.getModelGlobalParams`

`OpenFLUID.getObserverParams`

`OpenFLUID.getSimulatorParams`

Examples

```
## Not run:
val = OpenFLUID.getGeneratorParams(ofsim, "SU","var.flux",c("min","max"))

## End(Not run)
```

`OpenFLUID.getGeneratorsVarNames`
Returns all the variables names generated by generators

Description

Returns all the variables names generated by generators

Usage

```
OpenFLUID.getGeneratorsVarNames(ofblob, unitclass)
```

Arguments

`ofblob`	the simulation definition blob
`unitclass`	the units class

Value

a vector of variables names

See Also

`OpenFLUID.getSimulatorsIDs`

`OpenFLUID.getObserversIDs`

Examples

```
## Not run:
varnames = OpenFLUID.getGeneratorsVarNames(ofsim, "SU")

## End(Not run)
```

`OpenFLUID.getModelGlobalParam`
Returns the value of a global parameter of the model

Description

Returns the value of a global parameter of the model

Usage

```
OpenFLUID.getModelGlobalParam(ofblob, paramname)
```

Arguments

`ofblob`	the simulation definition blob
`paramname`	the name of the parameter

Value

the parameter value

See Also

`OpenFLUID.setModelGlobalParam`

`OpenFLUID.removeModelGlobalParam`

Examples

```
## Not run:
val = OpenFLUID.getModelGlobalParam(ofsim, "gvalue")

## End(Not run)
```

`OpenFLUID.getModelGlobalParamNames`

Returns all the global parameters names

Description

Returns all the global parameters names

Usage

```
OpenFLUID.getModelGlobalParamNames(ofblob)
```

Arguments

`ofblob`	the simulation definition blob

Value

a vector of parameters names

See Also

`OpenFLUID.getGeneratorParamNames`

`OpenFLUID.getSimulatorParamNames`

`OpenFLUID.getObserverParamNames`

Examples

```
## Not run:
varnames = OpenFLUID.getModelGlobalParamNames(ofsim)

## End(Not run)
```

`OpenFLUID.getModelGlobalParams`
Returns the values of global parameters of the model

Description

Returns the values of global parameters of the model

Usage

```
OpenFLUID.getModelGlobalParams(ofblob, paramnames)
```

Arguments

`ofblob`	the simulation definition blob
`paramnames`	names of the parameters

Value

the parameter values

See Also

`OpenFLUID.getGeneratorParams`

`OpenFLUID.getObserverParams`

`OpenFLUID.getSimulatorParams`

Examples

```
## Not run:
vals = OpenFLUID.getModelGlobalParams(ofsim, c("gvalueA","gvalueB"))

## End(Not run)
```

OpenFLUID.getObserverParam

Returns the value of an observer parameter

Description

Returns the value of an observer parameter

Usage

```
OpenFLUID.getObserverParam(ofblob, obsid, paramname)
```

Arguments

ofblob	the simulation definition blob
obsid	the observer ID
paramname	the name of the parameter

Value

the parameter value

See Also

OpenFLUID.setObserverParam

OpenFLUID.removeObserverParam

Examples

```
## Not run:
val = OpenFLUID.getObserverParam(ofsim, "my.observer","value")

## End(Not run)
```

OpenFLUID.getObserverParamNames

Returns all parameters names of an observer

Description

Returns all parameters names of an observer

Usage

```
OpenFLUID.getObserverParamNames(ofblob, obsid)
```

Arguments

ofblob	the simulation definition blob
obsid	the observer ID

Value

a vector of parameters names

See Also

OpenFLUID.getModelGlobalParamNames

OpenFLUID.getGeneratorParamNames

OpenFLUID.getSimulatorParamNames

Examples

```
## Not run:
varnames = OpenFLUID.getObserverParamNames(ofsim, obsid)

## End(Not run)
```

OpenFLUID.getObserverParams

Returns the values of observer parameters

Description

Returns the values of observer parameters

Usage

```
OpenFLUID.getObserverParams(ofblob, obsid, paramnames)
```

Arguments

ofblob	the simulation definition blob
obsid	the observer ID
paramnames	names of the parameters

Value

the parameter values

See Also

OpenFLUID.getModelGlobalParams

OpenFLUID.getGeneratorParams

OpenFLUID.getSimulatorParams

Examples

```
## Not run:
vals = OpenFLUID.getObserverParams(ofsim, "my.observer",c("valueA","valueB"))

## End(Not run)
```

OpenFLUID.getObserversIDs

Returns all observers IDs used for the monitoring

Description

Returns all observers IDs used for the monitoring

Usage

```
OpenFLUID.getObserversIDs(ofblob)
```

Arguments

ofblob	the simulation definition blob

Value

a vector of observers IDs

See Also

OpenFLUID.getGeneratorsVarNames

OpenFLUID.getSimulatorsIDs

Examples

```
## Not run:
varnames = OpenFLUID.getObserversIDs(ofsim)

## End(Not run)
```

`OpenFLUID.getObserversPaths`

Returns all the paths to search for observers

Description

Returns all the paths to search for observers

Usage

```
OpenFLUID.getObserversPaths()
```

Value

a vector of paths

See Also

`OpenFLUID.addExtraObserversPaths`

`OpenFLUID.getExtraObserversPaths`

`OpenFLUID.resetExtraObserversPaths`

Examples

```
## Not run:
paths = OpenFLUID.getObserversPaths()

## End(Not run)
```

`OpenFLUID.getPeriodBeginDate`

Returns the begin date of the simulation period

Description

Returns the begin date of the simulation period

Usage

```
OpenFLUID.getPeriodBeginDate(ofblob)
```

Arguments

`ofblob`	the simulation definition blob

Value

the begin date as an ISO datetime string (%Y-%m-%d %H:%M:%S)

See Also

`OpenFLUID.setPeriodBeginDate`

`OpenFLUID.getPeriodEndDate`

`OpenFLUID.setPeriodEndDate`

Examples

```
## Not run:
bdate = OpenFLUID.getPeriodBeginDate(ofsim)

## End(Not run)
```

`OpenFLUID.getPeriodEndDate`

Returns the end date of the simulation period

Description

Returns the end date of the simulation period

Usage

```
OpenFLUID.getPeriodEndDate(ofblob)
```

Arguments

`ofblob`	the simulation definition blob

Value

the end date as an ISO datetime string (%Y-%m-%d %H:%M:%S)

See Also

`OpenFLUID.setPeriodEndDate`

`OpenFLUID.getPeriodBeginDate`

`OpenFLUID.setPeriodBeginDate`

Examples

```
## Not run:
edate = OpenFLUID.getPeriodEndDate(ofsim)

## End(Not run)
```

`OpenFLUID.getSimulatorParam`
Returns the value of a simulator parameter

Description

Returns the value of a simulator parameter

Usage

```
OpenFLUID.getSimulatorParam(ofblob, simid, paramname)
```

Arguments

`ofblob`	the simulation definition blob
`simid`	the simulator ID
`paramname`	the name of the parameter

Value

the parameter value

See Also

`OpenFLUID.setSimulatorParam`

`OpenFLUID.removeSimulatorParam`

Examples

```
## Not run:
val = OpenFLUID.getSimulatorParam(ofsim, "my.simulator","coeff")

## End(Not run)
```

`OpenFLUID.getSimulatorParamNames`

Returns all the parameters names of a simulator

Description

Returns all the parameters names of a simulator

Usage

```
OpenFLUID.getSimulatorParamNames(ofblob, simid)
```

Arguments

`ofblob`	the simulation definition blob
`simid`	the simulator ID

Value

a vector of parameters names

See Also

`OpenFLUID.getModelGlobalParamNames`

`OpenFLUID.getGeneratorParamNames`

`OpenFLUID.getObserverParamNames`

Examples

```
## Not run:
varnames = OpenFLUID.getSimulatorParamNames(ofsim, simid)

## End(Not run)
```

`OpenFLUID.getSimulatorParams`

Returns the values of simulator parameters

Description

Returns the values of simulator parameters

Usage

```
OpenFLUID.getSimulatorParams(ofblob, simid, paramnames)
```

Arguments

`ofblob`	the simulation definition blob
`simid`	the simulator ID
`paramnames`	names of the parameters

Value

the parameter values

See Also

`OpenFLUID.getObserverParams`

`OpenFLUID.getSimulatorParams`

Examples

```
## Not run:
vals = OpenFLUID.getSimulatorParams(ofsim, "my.simulator",c("coeff","coeff"))

## End(Not run)
```

`OpenFLUID.getSimulatorsIDs`

Returns all the simulators IDs used by the model

Description

Returns all the simulators IDs used by the model

Usage

```
OpenFLUID.getSimulatorsIDs(ofblob)
```

Arguments

`ofblob`	the simulation definition blob

Value

a vector of simulators IDs

See Also

`OpenFLUID.getGeneratorsVarNames`

`OpenFLUID.getObserversIDs`

Examples

```
## Not run:
varnames = OpenFLUID.getSimulatorsIDs(ofsim)

## End(Not run)
```

`OpenFLUID.getSimulatorsPaths`
Returns all the paths to search for simulators

Description

Returns all the paths to search for simulators

Usage

```
OpenFLUID.getSimulatorsPaths()
```

Value

a vector of paths

See Also

`OpenFLUID.addExtraSimulatorsPaths`

`OpenFLUID.getExtraSimulatorsPaths`

`OpenFLUID.resetExtraSimulatorsPaths`

Examples

```
## Not run:
paths = OpenFLUID.getSimulatorsPaths()

## End(Not run)
```

`OpenFLUID.getUnitsClasses`
Returns the existing units classes

Description

Returns the existing units classes

Usage

```
OpenFLUID.getUnitsClasses(ofblob)
```

Arguments

`ofblob`	the simulation definition blob

Value

a vector of units classes

See Also

`OpenFLUID.getUnitsIDs`

Examples

```
## Not run:
cls = OpenFLUID.getUnitsClasses(ofsim)

## End(Not run)
```

`OpenFLUID.getUnitsIDs`
Returns the existing units IDs for a given units class

Description

Returns the existing units IDs for a given units class

Usage

```
OpenFLUID.getUnitsIDs(ofblob, unitclass)
```

Arguments

`ofblob`	the simulation definition blob
`unitclass`	the units class

Value

a vector of units IDs

See Also

`OpenFLUID.getUnitsClasses`

Examples

```
## Not run:
ids = OpenFLUID.getUnitsIDs(ofsim, "SU")

## End(Not run)
```

`OpenFLUID.getVersion`

Returns the OpenFLUID version

Description

Returns the OpenFLUID version

Usage

```
OpenFLUID.getVersion()
```

Value

the OpenFLUID version number

Examples

```
## Not run:
v = OpenFLUID.getVersion()

## End(Not run)
```

`OpenFLUID.loadResult`
Loads results as a dataframe, giving dataset informations

Description

Loads results as a dataframe, giving dataset informations

Usage

```
OpenFLUID.loadResult(ofblob, unitclass, unitid, varname)
```

Arguments

`ofblob`	the simulation definition blob
`unitclass`	the unit class
`unitid`	the unit ID
`varname`	the variable name

Value

a dataframe containing the simulation results

See Also

`OpenFLUID.loadResultFile`

Examples

```
## Not run:
resSU18 = OpenFLUID.loadResult(ofsim, "SU",18, "runoff")
resRS1 = OpenFLUID.loadResult(ofsim, "RS",1, "waterlevel")

## End(Not run)
```

`OpenFLUID.loadResultFile`
Loads results as a dataframe, giving output file name

Description

Loads results as a dataframe, giving output file name

Usage

```
OpenFLUID.loadResultFile(filepath)
```

Arguments

`filepath`	the full path of file to load

Value

a dataframe containing the simulation results

See Also

`OpenFLUID.loadResult`

Examples

```
## Not run:
resSU18 = OpenFLUID.loadResultFile("/path/to/output/SU18_full.out")
resRS1 = OpenFLUID.loadResultFile("/path/to/output/RS1_waterlevel.out")

## End(Not run)
```

`OpenFLUID.openDataset`
Opens a dataset and returns a simulation definition blob

Description

Opens a dataset and returns a simulation definition blob

Usage

```
OpenFLUID.openDataset(path)
```

Arguments

path	the full path of the dataset to open

Value

a simulation definition blob

See Also

OpenFLUID.openProject

OpenFLUID.runSimulation

Examples

```
## Not run:
ofsim = OpenFLUID.openDataset("/path/to/dataset")

## End(Not run)
```

OpenFLUID.openProject

Opens a project and returns a simulation definition blob

Description

Opens a project and returns a simulation definition blob

Usage

```
OpenFLUID.openProject(path)
```

Arguments

path	the full project to open

Value

a simulation definition blob

See Also

OpenFLUID.openDataset

OpenFLUID.runProject

Examples

```
## Not run:
ofsim = OpenFLUID.openProject("/path/to/project")

## End(Not run)
```

OpenFLUID.printSimulationInfo

Prints informations to screen about the simulation definition blob

---

Description

Prints informations to screen about the simulation definition blob

Usage

```
OpenFLUID.printSimulationInfo(ofblob)
```

Arguments

ofblob	the simulation definition blob

Examples

```
## Not run:
OpenFLUID.printSimulationInfo(ofsim)

## End(Not run)
```

OpenFLUID.removeAttribute

Removes an attribute for a given spatial units class

Description

Removes an attribute for a given spatial units class

Usage

```
OpenFLUID.removeAttribute(ofblob, unitclass, attrname)
```

Arguments

ofblob	the simulation definition blob
unitclass	the unit class
attrname	the name of the attribute

See Also

`OpenFLUID.createAttribute`

`OpenFLUID.getAttribute`

`OpenFLUID.setAttribute`

Examples

```
## Not run:
OpenFLUID.removeAttribute(ofsim, "SU","length")

## End(Not run)
```

OpenFLUID.removeModelGlobalParam

Removes a global parameter of the model

Description

Removes a global parameter of the model

Usage

```
OpenFLUID.removeModelGlobalParam(ofblob, paramname)
```

Arguments

`ofblob`	the simulation definition blob
`paramname`	the name of the parameter

See Also

`OpenFLUID.getModelGlobalParam`

`OpenFLUID.setModelGlobalParam`

Examples

```
## Not run:
OpenFLUID.removeModelGlobalParam(ofsim, "gvalue")

## End(Not run)
```

`OpenFLUID.removeObserverParam`
Removes an observer parameter

Description

Removes an observer parameter

Usage

```
OpenFLUID.removeObserverParam(ofblob, obsid, paramname)
```

Arguments

`ofblob`	the simulation definition blob
`obsid`	the simulation observer id
`paramname`	the name of the parameter

See Also

`OpenFLUID.getObserverParam`

`OpenFLUID.setObserverParam`

Examples

```
## Not run:
OpenFLUID.removeObserverParam(ofsim, "my.observer","value")

## End(Not run)
```

`OpenFLUID.removeSimulatorParam`
Removes a simulator parameter

Description

Removes a simulator parameter

Usage

```
OpenFLUID.removeSimulatorParam(ofblob, simid, paramname)
```

Arguments

ofblob	the simulation definition blob
simid	the simulation simulator id
paramname	the name of the parameter

See Also

OpenFLUID.getSimulatorParam

OpenFLUID.setSimulatorParam

Examples

```
## Not run:
OpenFLUID.removeSimulatorParam(ofsim, "my.simulator","coeff")

## End(Not run)
```

OpenFLUID.resetExtraObserversPaths

Resets list of added paths to search for observers

Description

Resets list of added paths to search for observers

Usage

```
OpenFLUID.resetExtraObserversPaths()
```

See Also

OpenFLUID.addExtraObserversPaths

OpenFLUID.getObserversPaths

OpenFLUID.getExtraObserversPaths

Examples

```
## Not run:
OpenFLUID.resetExtraObserversPaths()

## End(Not run)
```

`OpenFLUID.resetExtraSimulatorsPaths`
Resets list of added paths to search for simulators

Description

Resets list of added paths to search for simulators

Usage

```
OpenFLUID.resetExtraSimulatorsPaths()
```

See Also

`OpenFLUID.addExtraSimulatorsPaths`

`OpenFLUID.getSimulatorsPaths`

`OpenFLUID.getExtraSimulatorsPaths`

Examples

```
## Not run:
OpenFLUID.resetExtraSimulatorsPaths()

## End(Not run)
```

`OpenFLUID.runProject`
Runs a project and returns a simulation definition blob

Description

Runs a project and returns a simulation definition blob

Usage

```
OpenFLUID.runProject(path, verbose = FALSE)
```

Arguments

`path`	the full path of the dataset to open
`verbose`	enable/disable verbose mode

See Also

OpenFLUID.runSimulation

OpenFLUID.openProject

Examples

```
## Not run:
ofsim = OpenFLUID.runProject("/path/to/dataset")
ofsim = OpenFLUID.runProject("/path/to/dataset",verbose = TRUE)

## End(Not run)
```

OpenFLUID.runSimulation

Runs a simulation from a simulation definition blob

Description

Runs a simulation from a simulation definition blob

Usage

```
OpenFLUID.runSimulation(ofblob, verbose = FALSE)
```

Arguments

ofblob	the simulation definition blob
verbose	enable/disable verbose mode

See Also

OpenFLUID.runProject

OpenFLUID.openProject

OpenFLUID.openDataset

Examples

```
## Not run:
OpenFLUID.runSimulation(ofsim)
OpenFLUID.runSimulation(ofsim, verbose = TRUE)

## End(Not run)
```

`OpenFLUID.runSimulationAsExternalProcess` *Runs a simulation from a simulation definition blob as an external independent process*

Description

Runs a simulation from a simulation definition blob as an external independent process

Usage

```
OpenFLUID.runSimulationAsExternalProcess(
  ofblob,
  workpath = NULL,
  verbose = FALSE
)
```

Arguments

`ofblob`	the simulation definition blob
`workpath`	a workspace for simulation files. Inside this path, an IN directory will be created to store the input dataset, and an out directory will be created for output data. If this workpath is not provided or is NULL, a temporary path will be automatically generated
`verbose`	the verbose mode for the run. Possible values are similar than the R system2 built-in function, e.g. FALSE for quiet mode, "" for console output, a path string for file log.

See Also

`OpenFLUID.runSimulation`

Examples

```
## Not run:
OpenFLUID.runSimulationAsExternalProcess(ofsim)
OpenFLUID.runSimulationAsExternalProcess(ofsim, workpath = "/path/to/work")

## End(Not run)
```

`OpenFLUID.setAttribute`
Sets an attribute value for a given spatial unit

Description

Sets an attribute value for a given spatial unit

Usage

```
OpenFLUID.setAttribute(ofblob, unitclass, unitid, attrname, attrval)
```

Arguments

`ofblob`	the simulation definition blob
`unitclass`	the unit class
`unitid`	the unit ID
`attrname`	the name of the attribute
`attrval`	the value of the attribute

See Also

`OpenFLUID.createAttribute`

`OpenFLUID.getAttribute`

`OpenFLUID.removeAttribute`

Examples

```
## Not run:
OpenFLUID.setAttribute(ofsim, "SU",18, "length",12.3)
OpenFLUID.setAttribute(ofsim, "SU",18, "CODE","ABC")

## End(Not run)
```

`OpenFLUID.setAttributes`

Sets attributes values for given spatial units and attributes names

Description

Sets attributes values for given spatial units and attributes names

Usage

```
OpenFLUID.setAttributes(ofblob, unitclass, attrvals)
```

Arguments

`ofblob`	the simulation definition blob
`unitclass`	the unit class
`attrvals`	the data.frame of values (unit id x attribute name)

See Also

`OpenFLUID.getAttributes`

Examples

```
## Not run:
OpenFLUID.setAttributes(
  ofsim,
  "SU",
  data.frame(
    "length"=c(1, 2),
    "width"=c(3.2, 7.8),
    "unitid"=c("SU#18","SU#23")
  )
)

## End(Not run)
```

`OpenFLUID.setCurrentOutputDir`

Sets the current output directory for simulations

Description

Sets the current output directory for simulations

Usage

```
OpenFLUID.setCurrentOutputDir(path)
```

Arguments

path	the output directory path

Examples

```
## Not run:
OpenFLUID.setCurrentOutputDir("/path/to/output")

## End(Not run)
```

OpenFLUID.setDefaultDeltaT

Sets the default time step for the simulation

Description

Sets the default time step for the simulation

Usage

```
OpenFLUID.setDefaultDeltaT(ofblob, deltat)
```

Arguments

ofblob	the simulation definition blob
deltat	the time step value in seconds

See Also

OpenFLUID.getDefaultDeltaT

Examples

```
## Not run:
OpenFLUID.setDefaultDeltaT(60)
OpenFLUID.setDefaultDeltaT(86400)

## End(Not run)
```

`OpenFLUID.setGeneratorParam`

Sets a value for a generator parameter

Description

Sets a value for a generator parameter

Usage

```
OpenFLUID.setGeneratorParam(ofblob, unitclass, varname, paramname, paramval)
```

Arguments

`ofblob`	the simulation definition blob
`unitclass`	the unit class to which the generator is applied
`varname`	the variable name to which the generator is applied
`paramname`	the name of the parameter
`paramval`	the value of the parameter

See Also

`OpenFLUID.getGeneratorParam`

Examples

```
## Not run:
OpenFLUID.setGeneratorParam(ofsim, "SU","var.flux","fixedvalue",12.3)

## End(Not run)
```

`OpenFLUID.setGeneratorParams`

Sets values of generator parameters

Description

Sets values of generator parameters

Usage

```
OpenFLUID.setGeneratorParams(ofblob, unitclass, varname, paramvals)
```

Arguments

ofblob	the simulation definition blob
unitclass	the unit class to which the generator is applied
varname	the variable name to which the generator is applied
paramvals	the value of the parameters in a data.frame, with parameters names as columns names

See Also

OpenFLUID.setModelGlobalParams

OpenFLUID.setObserverParams

OpenFLUID.setSimulatorParams

Examples

```
## Not run:
OpenFLUID.setGeneratorParams(
  ofsim,
  "SU", "var.flux",
  data.frame("min"=0.0, "max"=1.0)
)

## End(Not run)
```

OpenFLUID.setModelGlobalParam

Sets a model global parameter value

Description

Sets a model global parameter value

Usage

```
OpenFLUID.setModelGlobalParam(ofblob, paramname, paramval)
```

Arguments

ofblob	the simulation definition blob
paramname	the name of the parameter
paramval	the value of the parameter

See Also

OpenFLUID.getModelGlobalParam

OpenFLUID.removeModelGlobalParam

Examples

```
## Not run:
OpenFLUID.setModelGlobalParam(ofsim, "gvalue",37.2)

## End(Not run)
```

`OpenFLUID.setModelGlobalParams`
Sets a value of a global parameter of the model

Description

Sets a value of a global parameter of the model

Usage

```
OpenFLUID.setModelGlobalParams(ofblob, paramvals)
```

Arguments

`ofblob`	the simulation definition blob
`paramvals`	the values of the parameters in a data.frame, with parameters names as columns names

See Also

`OpenFLUID.setModelGlobalParams`

`OpenFLUID.setSimulatorParams`

`OpenFLUID.setObserverParams`

Examples

```
## Not run:
OpenFLUID.setModelGlobalParams(
  ofsim,
  data.frame("gvalue1"=37.2, "gvalue2"=14.6)
)

## End(Not run)
```

`OpenFLUID.setObserverParam`

Sets a value for an observer parameter

Description

Sets a value for an observer parameter

Usage

```
OpenFLUID.setObserverParam(ofblob, obsid, paramname, paramval)
```

Arguments

`ofblob`	the simulation definition blob
`obsid`	the simulation observer id
`paramname`	the name of the parameter
`paramval`	the parameter value

See Also

`OpenFLUID.getObserverParam`

`OpenFLUID.removeObserverParam`

Examples

```
## Not run:
OpenFLUID.setObserverParam(ofsim, "my.observer","value",3)

## End(Not run)
```

`OpenFLUID.setObserverParams`

Sets values for observer parameters

Description

Sets values for observer parameters

Usage

```
OpenFLUID.setObserverParams(ofblob, obsid, paramvals)
```

Arguments

ofblob	the simulation definition blob
obsid	the simulation observer id
paramvals	the values of the parameters in a data.frame, with parameters names as column names

See Also

OpenFLUID.setModelGlobalParams

OpenFLUID.setGeneratorParams

OpenFLUID.setSimulatorParams

Examples

```
## Not run:
OpenFLUID.setObserverParams(
  ofsim,
  "my.observer",data.frame("valueA"=3, "valueB"=6.7))

## End(Not run)
```

OpenFLUID.setPeriodBeginDate

Sets the begin date of the simulation period

Description

Sets the begin date of the simulation period

Usage

```
OpenFLUID.setPeriodBeginDate(ofblob, begindate)
```

Arguments

ofblob	the simulation definition blob
begindate	the begin date as an ISO datetime string (%Y-%m-%d %H:%M:%S)

See Also

OpenFLUID.getPeriodBeginDate

OpenFLUID.setPeriodEndDate

OpenFLUID.getPeriodEndDate

Examples

```
## Not run:
OpenFLUID.setPeriodBeginDate(ofsim, "1997-06-05 04:00:00")

## End(Not run)
```

`OpenFLUID.setPeriodEndDate`
Sets the end date of the simulation period

Description

Sets the end date of the simulation period

Usage

```
OpenFLUID.setPeriodEndDate(ofblob, enddate)
```

Arguments

`ofblob`	the simulation definition blob
`enddate`	the end date as an ISO datetime string (%Y-%m-%d %H:%M:%S)

See Also

`OpenFLUID.getPeriodEndDate`

`OpenFLUID.setPeriodBeginDate`

`OpenFLUID.getPeriodBeginDate`

Examples

```
## Not run:
OpenFLUID.setPeriodEndDate(ofsim, "1997-06-05 16:07:17")

## End(Not run)
```

`OpenFLUID.setSimulatorParam`

Sets a value of a simulator parameter

Description

Sets a value of a simulator parameter

Usage

```
OpenFLUID.setSimulatorParam(ofblob, simid, paramname, paramval)
```

Arguments

`ofblob`	the simulation definition blob
`simid`	the simulation simulator id
`paramname`	the name of the parameter
`paramval`	the parameter value

See Also

`OpenFLUID.getSimulatorParam`

`OpenFLUID.removeSimulatorParam`

Examples

```
## Not run:
OpenFLUID.setSimulatorParam(ofsim, "my.simulator","coeff",3)

## End(Not run)
```

`OpenFLUID.setSimulatorParams`

Sets values of a simulator parameters

Description

Sets values of a simulator parameters

Usage

```
OpenFLUID.setSimulatorParams(ofblob, simid, paramvals)
```

Arguments

ofblob	the simulation definition blob
simid	the simulation simulator id
paramvals	the values of the parameters in a data.frame, with parameters names as columns names

See Also

OpenFLUID.setModelGlobalParams

OpenFLUID.setGeneratorParams

OpenFLUID.setObserverParams

Examples

```
## Not run:
OpenFLUID.setSimulatorParams(
  ofsim,
  "my.simulator",data.frame("coeffA"=3, "coeffB"=3.3)
)

## End(Not run)
```

OpenFLUID.writeDataset

Writes a dataset on disk from a simulation definition blob

Description

Writes a dataset on disk from a simulation definition blob

Usage

```
OpenFLUID.writeDataset(ofblob, path)
```

Arguments

ofblob	the simulation definition blob
path	the full path where the datset is written

See Also

OpenFLUID.openDataset

Examples

```
## Not run:
OpenFLUID.writeDataset(ofsim ,"/path/to/dataset")

## End(Not run)
```

`ROpenFLUID` *R Interface to OpenFLUID Platform Framework for Modelling and Simulation of Landscapes*

Description

Provides a collection of functions to load, parameterize, run and analyze OpenFLUID simulations within the GNU R environment.

Details

Package:	ROpenFLUID
Type:	Package
Version:	
Date:	
License:	GPLv3
LazyLoad:	yes

Author(s)

Jean-Christophe Fabre <fabrejc@supagro.inra.fr>

Examples

```
## Not run:
# load OpenFLUID library
library("ROpenFLUID")

# add optional paths to search for simulators
OpenFLUID.addExtraSimulatorsPaths("/path/to/simulators")

# open an input dataset
ofsim = OpenFLUID.openDataset("/path/to/dataset")

# set the output dir
OpenFLUID.setCurrentOutputDir("/path/to/output")
```

```
# run the simulation
OpenFLUID.runSimulation(ofsim)

## End(Not run)
```