Example documentation

Node types

- Declaration
- Definition
- Declaration / Modification
- Definition / Modification
- Modification

Node reference

Property name	#	#	#	#	#
box.geometry		1			
box.size.vy		1			
box.size.x	1				1
box.size.y	1	1		1	
box.size.z		1			
cfl_factor		1			
max_vare		1			
max_vari		1			
modules.heating	1				1
modules.hydrodynamics		1			
modules.radiation	1				1
runtime.t_max	1				1
runtime.timestep	1				1
simulation.name		1			
simulation.precision		1			

Node list

box.geometry

PDF_FILE1:19	uint16
Value:	3
Options:	1, 2, 3
Description:	Type of grid geometry

box.size.vy

PDF_FILE1:37	float64
Value:	23.000
Default Unit:	km/s

box.size.x

PDF_FILE1:26	float128
Default Unit:	cm
Condition:	{?} > 0
Description:	Box size in X direction
settings:8	mod
Value:	10
Default Unit:	nm

box.size.y

PDF_FILE1:31	float64
Default Unit:	cm
Options:	3.0 cm, 4.0 cm
Description:	Box size in Y direction
PDF_FILE1:36	float64
Value:	34.000
Default Unit:	au
settings:9	mod
Value:	3e7
Default Unit:	nm

box.size.z

PDF_FILE1:42	constant float64
Value:	23.000
Default Unit:	cm
Options:	10.0 m, 20.0 cm, 23.0 cm, 26.0 cm
Description:	Box size in Z direction

cfl_factor

PDF_STRING1:1	float64
Value:	0.700

max_vare

PDF_STRING1:2	float64
Value:	0.200

max_vari

PDF_STRING1:3	float64
Value:	0.200

modules.heating

PDF_FILE1:54	bool
Tags:	preprocessor
Description:	Switch on heating module
settings:12	mod
Value:	false

modules.hydrodynamics

PDF_FILE1:51	bool
Value:	true
Tags:	preprocessor
Description:	Switch on hydrodynamics module

modules.radiation

PDF_FILE1:57	bool
Tags:	preprocessor
Description:	Switch on radiation module
settings:13	mod
Value:	true

runtime.t_max

PDF_FILE1:10	float64
Default Unit:	s
Condition:	{?} > 0
Description:	Maximum simulation time
settings:2	mod
Value:	10
Default Unit:	ns

runtime.timestep

PDF_FILE1:13	float64
Default Unit:	s
Condition:	{?} < {?runtime.t_max} && {?} > 0
Description:	Simulation time step
settings:3	mod
Value:	0.01
Default Unit:	ns

simulation.name

PDF_FILE1:4	str
Value:	simulation
Format:	[a-zA-Z_-]+

simulation.precision

PDF_FILE1:6	str
Value:	double
Options:	double, float

Sources

PDF_ROOT	build_docs.py

PDF_STRING1	build_docs.py
Source:	PDF_ROOT:26

```
          cfl_factor float = 0.7  # Courant-Friedrichs-Lewy condition
          max_vare float = 0.2    # maximum energy change of electrons
          max_vari float = 0.2    # maximum energy change of ions
```

PDF_FILE1	pdf_definitions.dip
Source:	PDF_ROOT:31

```
$source settings = pdf_settings.dip

simulation
  name str = "simulation"
    !format "[a-zA-Z_-]+"
  precision str = "double"
    !options ["double","float"]

runtime
  t_max float s              # mandatory
    !condition ("{?} > 0")
    !description "Maximum simulation time"
  timestep float s
    !condition ("{?} < {?runtime.t_max} && {?} > 0")  # mandatory
    !description "Simulation time step"
  {settings?runtime.*}

box
  geometry uint16 = {settings?box.geometry}  # mandatory
    = 1  # linear
    = 2  # cylindrical
    = 3  # spherical
    !description "Type of grid geometry"

  size
    x float128 cm            # mandatory
      !condition ("{?} > 0")
      !description "Box size in X direction"
    #y float cm               # first declared here
    @case ("{?box.geometry} == 2")
      y float cm             # mandatory if geometry is non-linear
        = 3 cm
        = 4 cm
        !description "Box size in Y direction"
    @case ("{?box.geometry} == 3")
      y float = 34 au
      vy float = 23 km/s
    #@else
    #  y float = 3 m
    @end
    @case ("{?box.geometry} == 3")
      z float = 23 cm        # constant
        = 10 m
        !options [20,23,26] cm
        !description "Box size in Z direction"
        !constant
    @end
    {settings?box.size.*}

modules
  hydrodynamics bool = true  # optional
    !description "Switch on hydrodynamics module"
    !tags ["preprocessor"]
```

```
54      heating bool                # mandatory
55        !description "Switch on heating module"
56        !tags ["preprocessor"]
57      radiation bool              # mandatory
58        !description "Switch on radiation module"
59        !tags ["preprocessor"]
60
61      {settings?modules.*}
62
63
```

settings	pdf_settings.dip
Source:	PDF_FILE1:1

```
1     runtime
2       t_max = 10 ns
3       timestep = 0.01 ns
4
5     box
6       geometry = 3
7       size
8         x = 10 nm
9         y = 3e7 nm
10
11    modules
12      heating = false
13      radiation = true
14
15
```