# Skip to content FluidDomainSettings(bpy\_struct)

```
base class — bpy_struct
```

# class bpy.types.FluidDomainSettings(bpy\_struct)

Fluid domain settings

# adapt margin

Margin added around fluid to minimize boundary interference

#### TYPE:

int in [2, 24], default 4

# adapt\_threshold

Minimum amount of fluid a cell can contain before it is considered empty

# TYPE:

float in [0, 1], default 0.02

# additional\_res

Maximum number of additional cells

# TYPE:

int in [0, 512], default 0

# alpha

Buoyant force based on smoke density (higher value results in faster rising smoke)

# TYPE:

float in [-5, 5], default 1.0

# beta

Buoyant force based on smoke heat (higher value results in faster rising smoke)

# TYPE:

float in [-5, 5], default 1.0

Speed of the burning reaction (higher value results in smaller flames)

# TYPE:

float in [0.01, 4], default 0.75

# cache\_data\_format

Select the file format to be used for caching volumetric data

- UNI Uni Cache Uni file format (.uni).
- OPENVDB OpenVDB OpenVDB file format (.vdb).
- RAW Raw Cache Raw file format (.raw).

enum in ['UNI', 'OPENVDB', 'RAW'], default 'OPENVDB'

# cache\_directory

Directory that contains fluid cache files

```
TYPE:
```

string, default ", (never None)

# cache\_frame\_end

Frame on which the simulation stops (last frame baked)

#### TYPE:

int in [-1048574, 1048574], default 250

# cache frame offset

Frame offset that is used when loading the simulation from the cache. It is not considered when baking the simulation, only when loading it.

#### TYPE:

int in [-1048574, 1048574], default 0

# cache\_frame\_pause\_data

#### TYPE:

int in [-inf, inf], default 0

# cache\_frame\_pause\_guide

# TYPE:

int in [-inf, inf], default 0

# cache\_frame\_pause\_mesh

# TYPE:

int in [-inf, inf], default 0

# cache\_frame\_pause\_noise

# TYPE:

int in [-inf, inf], default 0

# cache\_frame\_pause\_particles

# TYPE:

int in  $[-\inf]$ , default 0

# cache\_frame\_start

Frame on which the simulation starts (first frame baked)

#### TYPE:

int in [-1048574, 1048574], default 1

# cache\_mesh\_format

Select the file format to be used for caching surface data

- UNI Uni Cache Uni file format (.uni).
- OPENVDB OpenVDB OpenVDB file format (.vdb).
- RAW Raw Cache Raw file format (.raw).

# TYPE:

enum in ['UNI', 'OPENVDB', 'RAW'], default 'UNI'

# cache\_noise\_format

Select the file format to be used for caching noise data

- UNI Uni Cache Uni file format (.uni).
- OPENVDB OpenVDB OpenVDB file format (.vdb).

• RAW Raw Cache – Raw file format (.raw).

# TYPE:

enum in ['UNI', 'OPENVDB', 'RAW'], default 'OPENVDB'

# cache particle format

Select the file format to be used for caching particle data

- UNI Uni Cache Uni file format (.uni).
- OPENVDB OpenVDB OpenVDB file format (.vdb).
- RAW Raw Cache Raw file format (.raw).

# TYPE:

enum in ['UNI', 'OPENVDB', 'RAW'], default 'OPENVDB'

# cache resumable

Additional data will be saved so that the bake jobs can be resumed after pausing. Because more data will be written to disk it is recommended to avoid enabling this option when baking at high resolutions.

#### TYPE:

boolean, default False

# cache type

Change the cache type of the simulation

- REPLAY Replay Use the timeline to bake the scene.
- MODULAR Modular Bake every stage of the simulation separately.
- ALL All—Bake all simulation settings at once.

# TYPE:

enum in ['REPLAY', 'MODULAR', 'ALL'], default 'REPLAY'

# cell size

Cell Size

# TYPE:

mathutils. Vector of 3 items in [-inf, inf], default (0.0, 0.0, 0.0), (readonly)

# cfl condition

Maximal velocity per cell (greater CFL numbers will minimize the number of simulation steps and the computation time.)

#### TYPE:

float in [0, 10], default 2.0

# clipping

Value under which voxels are considered empty space to optimize rendering

# TYPE:

float in [0, 1], default 1e-06

# color grid

Smoke color grid

### TYPE:

 $float \ array \ of \ 32 \ items \ in \ [-inf, inf], \ default \ (0.0, \ 0.0,$ 

# color ramp

```
TYPE:
```

```
ColorRamp , (readonly)
```

# color\_ramp\_field

Simulation field to color map

#### TYPE:

enum in ['NONE'], default 'NONE'

# color\_ramp\_field\_scale

Multiplier for scaling the selected field to color map

# TYPE:

float in [0.001, 100000], default 1.0

# delete\_in\_obstacle

Delete fluid inside obstacles

#### TYPE:

boolean, default False

# density grid

Smoke density grid

# TYPE:

# display\_interpolation

Interpolation method to use for smoke/fire volumes in solid mode

- LINEAR Linear Good smoothness and speed.
- $\bullet \ \ \mbox{CUBIC Cubic} \mbox{Smoothed high quality interpolation, but slower.}$
- $\bullet$  CLOSEST Closest No interpolation.

#### TYPE:

```
enum in ['LINEAR', 'CUBIC', 'CLOSEST'], default 'LINEAR'
```

# display\_thickness

Thickness of smoke display in the viewport

# TYPE:

float in [0.001, 1000], default 1.0

# dissolve\_speed

Determine how quickly the smoke dissolves (lower value makes smoke disappear faster)

# TYPE:

```
int in [1, 10000], default 5
```

# domain resolution

Smoke Grid Resolution

# TYPE:

int array of 3 items in [-inf, inf], default (0, 0, 0), (readonly)

#### domain type

Change domain type of the simulation

- GAS Gas Create domain for gases.
- LIQUID Liquid Create domain for liquids.

#### TYPE:

```
enum in ['GAS', 'LIQUID'], default 'GAS'
```

# effector\_group

Limit effectors to this collection

#### TYPE:

Collection

# effector weights

#### TYPE:

```
EffectorWeights, (readonly)
```

# export\_manta\_script

Generate and export Mantaflow script from current domain settings during bake. This is only needed if you plan to analyze the cache (e.g. view grids, velocity vectors, particles) in Mantaflow directly (outside of Blender) after baking the simulation.

#### TYPE:

boolean, default False

# flame\_grid

Smoke flame grid

# TYPE:

# flame ignition

Minimum temperature of the flames (higher value results in faster rising flames)

# TYPE:

```
float in [0.5, 5], default 1.5
```

# flame max temp

Maximum temperature of the flames (higher value results in faster rising flames)

# TYPE:

```
float in [1, 10], default 3.0
```

# flame\_smoke

Amount of smoke created by burning fuel

# TYPE:

```
float in [0, 8], default 1.0
```

# flame\_smoke\_color

Color of smoke emitted from burning fuel

# TYPE:

```
mathutils.Color of 3 items in [0, inf], default (0.7, 0.7, 0.7)
```

# flame\_vorticity

Additional vorticity for the flames

#### TYPE:

float in [0, 2], default 0.5

# flip ratio

PIC/FLIP Ratio. A value of 1.0 will result in a completely FLIP based simulation. Use a lower value for simulations which should produce smaller splashes.

# TYPE:

float in [0, 1], default 0.97

# fluid\_group

Limit fluid objects to this collection

#### TYPE:

Collection

# force collection

Limit forces to this collection

# TYPE:

Collection

# fractions distance

Determines how far apart fluid and obstacle are (higher values will result in fluid being further away from obstacles, smaller values will let fluid move towards the inside of obstacles)

# TYPE:

float in [-5, 5], default 0.5

# fractions threshold

Determines how much fluid is allowed in an obstacle cell (higher values will tag a boundary cell as an obstacle easier and reduce the boundary smoothening effect)

#### TYPE:

float in [0.001, 1], default 0.05

# gravity

Gravity in X, Y and Z direction

#### TYPE:

mathutils. Vector of 3 items in [-1000.1, 1000.1], default (0.0, 0.0, -9.81)

# gridlines\_cell\_filter

Cell type to be highlighted

- NONE None Highlight the cells regardless of their type.
- FLUID Fluid Highlight only the cells of type Fluid.
- OBSTACLE Obstacle Highlight only the cells of type Obstacle.
- EMPTY Empty Highlight only the cells of type Empty.
- $\bullet$   $\,$  INFLOW  $\,$  Inflow Highlight only the cells of type Inflow.
- $\bullet$   $\,$  OUTFLOW  $\,$  Outflow Highlight only the cells of type Outflow.

# TYPE:

enum in ['NONE', 'FLUID', 'OBSTACLE', 'EMPTY', 'INFLOW', 'OUTFLOW'], default 'NONE'

#### gridlines color field

A1 1 1 A11 A11 A

Simulation field to color map onto gridlines

- NONE None None.
- FLAGS Flags Flag grid of the fluid domain.
- RANGE Highlight Range Highlight the voxels with values of the color mapped field within the range.

#### TYPE:

```
enum in ['NONE', 'FLAGS', 'RANGE'], default 'NONE'
```

# gridlines lower bound

Lower bound of the highlighting range

# TYPE:

```
float in [-inf, inf], default 0.0
```

# gridlines range color

Color used to highlight the range

# TYPE:

float array of 4 items in [0, inf], default (1.0, 0.0, 0.0, 1.0)

# gridlines\_upper\_bound

Upper bound of the highlighting range

#### TYPE:

```
float in [-inf, inf], default 1.0
```

# guide\_alpha

Guiding weight (higher value results in greater lag)

# TYPE:

```
float in [1, 100], default 2.0
```

# guide\_beta

Guiding size (higher value results in larger vortices)

# TYPE:

```
int in [1, 50], default 5
```

# guide parent

Use velocities from this object for the guiding effect (object needs to have fluid modifier and be of type domain))

# TYPE:

Object

# guide\_source

Choose where to get guiding velocities from

- DOMAIN Domain Use a fluid domain for guiding (domain needs to be baked already so that velocities can be extracted). Guiding domain be of any type (i.e. gas or liquid)..
- EFFECTOR Effector Use guiding (effector) objects to create fluid guiding (guiding objects should be animated and baked once set up completely).

#### TYPE:

```
enum in ['DOMAIN', 'EFFECTOR'], default 'DOMAIN'
```

# guide\_vel\_factor

Guiding velocity factor (higher value results in greater guiding velocities)

```
TYPE:
                           float in [0, 100], default 2.0
has_cache_baked_any
            TYPE:
                           boolean, default False
has_cache_baked_data
            TYPE:
                           boolean, default False
has_cache_baked_guide
            TYPE:
                           boolean, default False
has_cache_baked_mesh
            TYPE:
                           boolean, default False
has_cache_baked_noise
            TYPE:
                           boolean, default False
has_cache_baked_particles
            TYPE:
                           boolean, default False
heat grid
            Smoke heat grid
            TYPE:
                            float\ array\ of\ 32\ items\ in\ [-inf,\ inf],\ default\ (0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\ 0.0,\
                           highres_sampling
            Method for sampling the high resolution flow
            TYPE:
                           enum in ['FULLSAMPLE', 'LINEAR', 'NEAREST'], default 'FULLSAMPLE'
is_cache_baking_any
            TYPE:
                           boolean, default False
is_cache_baking_data
            TYPE:
                           boolean, default False
is_cache_baking_guide
            TYPE:
                           boolean, default False
is_cache_baking_mesh
```

TYPE:

# is cache baking noise

# TYPE:

boolean, default False

# is\_cache\_baking\_particles

#### TYPE:

boolean, default False

# mesh concave lower

Lower mesh concavity bound (high values tend to smoothen and fill out concave regions)

#### TYPE:

float in [0, 10], default 0.4

# mesh concave upper

Upper mesh concavity bound (high values tend to smoothen and fill out concave regions)

#### TYPE:

float in [0, 10], default 3.5

# mesh\_generator

Which particle level set generator to use

- IMPROVED Final Use improved particle level set (slower but more precise and with mesh smoothening options).
- UNION Preview Use union particle level set (faster but lower quality).

# TYPE:

enum in ['IMPROVED', 'UNION'], default 'IMPROVED'

# mesh\_particle\_radius

Particle radius factor (higher value results in larger (meshed) particles). Needs to be adjusted after changing the mesh scale.

# TYPE:

float in [0, 10], default 2.0

# mesh scale

The mesh simulation is scaled up by this factor (compared to the base resolution of the domain). For best meshing, it is recommended to adjust the mesh particle radius alongside this value.

# TYPE:

int in [1, 100], default 2

# mesh smoothen neg

Negative mesh smoothening

# TYPE:

int in [0, 100], default 1

# mesh smoothen pos

Positive mesh smoothening

# TYPE:

int in [0, 100], default 1

# noise pos scale

```
Scale of noise (higher value results in larger vortices)
    TYPE:
          float in [0.0001, 10], default 2.0
noise_scale
    TYPE:
```

The noise simulation is scaled up by this factor (compared to the base resolution of the domain)

```
int in [1, 100], default 2
```

# noise\_strength

Strength of noise

# TYPE:

float in [0, 10], default 1.0

# noise\_time\_anim

Animation time of noise

# TYPE:

float in [0.0001, 10], default 0.1

# openvdb\_cache\_compress\_type

Compression method to be used

- ZIP Zip Effective but slow compression.
- BLOSC Blosc Multithreaded compression, similar in size and quality as 'Zip'.
- NONE None Do not use any compression.

#### TYPE:

```
enum in ['ZIP', 'BLOSC', 'NONE'], default 'BLOSC'
```

# openvdb data depth

Bit depth for fluid particles and grids (lower bit values reduce file size)

# TYPE:

```
enum in ['NONE'], default 'NONE'
```

# particle\_band\_width

Particle (narrow) band width (higher value results in thicker band and more particles)

# TYPE:

```
float in [0, 1000], default 3.0
```

# particle max

Maximum number of particles per cell (ensures that each cell has at most this amount of particles)

# TYPE:

```
int in [0, 1000], default 16
```

# particle\_min

Minimum number of particles per cell (ensures that each cell has at least this amount of particles)

# TYPE:

```
int in [0, 1000], default 8
```

# particle\_number

Particle number factor (higher value results in more particles)

# TYPE:

```
int in [1, 5], default 2
```

# particle\_radius

Particle radius factor. Increase this value if the simulation appears to leak volume, decrease it if the simulation seems to gain volume.

#### TYPE:

```
float in [0, 10], default 1.0
```

# particle randomness

Randomness factor for particle sampling

# TYPE:

```
float in [0, 10], default 0.1
```

# particle\_scale

The particle simulation is scaled up by this factor (compared to the base resolution of the domain)

# TYPE:

```
int in [1, 100], default 1
```

# resolution\_max

Resolution used for the fluid domain. Value corresponds to the longest domain side (resolution for other domain sides is calculated automatically).

# TYPE:

```
int in [6, 10000], default 32
```

# show\_gridlines

Show gridlines

#### TYPE:

boolean, default False

# show\_velocity

Visualize vector fields

# TYPE:

boolean, default False

# simulation method

Change the underlying simulation method

- FLIP FLIP Use FLIP as the simulation method (more splashy behavior).
- APIC APIC Use APIC as the simulation method (more energetic and stable behavior).

# TYPE:

```
enum in ['FLIP', 'APIC'], default 'FLIP'
```

# slice axis

- AUTO Auto Adjust slice direction according to the view direction.
- X X Slice along the X axis.
- Y Y Slice along the Y axis.
- Z Z Slice along the Z axis.

# TYPE:

```
enum in ['AUTO', 'X', 'Y', 'Z'], default 'AUTO'
```

# slice depth

Position of the slice

#### TYPE:

float in [0, 1], default 0.5

# $slice\_per\_voxel$

How many slices per voxel should be generated

#### TYPE:

float in [0, 100], default 5.0

# sndparticle boundary

How particles that left the domain are treated

- DELETE Delete Delete secondary particles that are inside obstacles or left the domain.
- PUSHOUT Push Out Push secondary particles that left the domain back into the domain.

#### TYPE:

enum in ['DELETE', 'PUSHOUT'], default 'DELETE'

# sndparticle bubble buoyancy

Amount of buoyancy force that rises bubbles (high value results in bubble movement mainly upwards)

# TYPE:

float in [0, 100], default 0.5

# sndparticle\_bubble\_drag

Amount of drag force that moves bubbles along with the fluid (high value results in bubble movement mainly along with the fluid)

#### TYPE:

float in [0, 100], default 0.6

# sndparticle combined export

Determines which particle systems are created from secondary particles

- OFF Off-Create a separate particle system for every secondary particle type.
- SPRAY FOAM Spray + Foam Spray and foam particles are saved in the same particle system.
- SPRAY BUBBLES Spray + Bubbles Spray and bubble particles are saved in the same particle system.
- FOAM\_BUBBLES Foam+Bubbles Foam and bubbles particles are saved in the same particle system.
- SPRAY\_FOAM\_BUBBLES Spray + Foam + Bubbles Create one particle system that contains all three secondary particle types.

# TYPE:

enum in ['OFF', 'SPRAY FOAM', 'SPRAY BUBBLES', 'FOAM BUBBLES', 'SPRAY FOAM BUBBLES'], default 'OFF'

# sndparticle life max

Highest possible particle lifetime

#### TYPE:

float in [0, 10000], default 25.0

# sndparticle\_life\_min

Lowest possible particle lifetime

# TYPE:

# sndparticle\_potential\_max\_energy

Upper clamping threshold that indicates the fluid speed where cells no longer emit more particles (higher value results in generally less particles

#### TYPE:

float in [0, 1000], default 5.0

# sndparticle\_potential\_max\_trappedair

Upper clamping threshold for marking fluid cells where air is trapped (higher value results in less marked cells)

#### TYPE:

float in [0, 1000], default 20.0

# sndparticle\_potential\_max\_wavecrest

Upper clamping threshold for marking fluid cells as wave crests (higher value results in less marked cells)

#### TYPE:

float in [0, 1000], default 8.0

# sndparticle potential min energy

Lower clamping threshold that indicates the fluid speed where cells start to emit particles (lower values result in generally more particles)

#### TYPE:

float in [0, 1000], default 1.0

# sndparticle potential min trappedair

Lower clamping threshold for marking fluid cells where air is trapped (lower value results in more marked cells)

#### TYPE:

float in [0, 1000], default 5.0

# sndparticle\_potential\_min\_wavecrest

Lower clamping threshold for marking fluid cells as wave crests (lower value results in more marked cells)

# TYPE:

float in [0, 1000], default 2.0

# sndparticle potential radius

Radius to compute potential for each cell (higher values are slower but create smoother potential grids)

# TYPE:

int in [1, 4], default 2

#### sndparticle sampling trappedair

Maximum number of particles generated per trapped air cell per frame

# TYPE:

int in [0, 10000], default 40

# sndparticle sampling wavecrest

Maximum number of particles generated per wave crest cell per frame

### TYPE:

int in [0, 10000], default 200

# sndparticle update radius

Radius to compute position update for each particle (higher values are slower but particles move less chaotic)

```
TYPE:
```

int in [1, 4], default 2

# start point

Start point

# TYPE:

mathutils. Vector of 3 items in [-inf, inf], default (0.0, 0.0, 0.0), (readonly)

# surface\_tension

Surface tension of liquid (higher value results in greater hydrophobic behavior)

#### TYPE:

float in [0, 100], default 0.0

# sys\_particle\_maximum

Maximum number of fluid particles that are allowed in this simulation

#### TYPE:

int in [0, inf], default 0

# temperature\_grid

Smoke temperature grid, range 0 to 1 represents 0 to 1000K

# TYPE:

 $float \ array \ of \ 32 \ items \ in \ [-inf, inf], \ default \ (0.0, \ 0.0,$ 

# $time\_scale$

Adjust simulation speed

# TYPE:

float in [0.0001, 10], default 1.0

# timesteps\_max

Maximum number of simulation steps to perform for one frame

# TYPE:

int in [1, 100], default 4

# timesteps\_min

Minimum number of simulation steps to perform for one frame

# TYPE:

int in [1, 100], default 1

# use adaptive domain

Adapt simulation resolution and size to fluid

# TYPE:

boolean, default False

# use\_adaptive\_timesteps

Automatically decide when to perform multiple simulation steps per frame

# TYPE:

boolean, default True

# use\_bubble\_particles Create bubble particle system TYPE: boolean, default False $use\_collision\_border\_back$ Enable collisions with back domain border TYPE: boolean, default False use\_collision\_border\_bottom Enable collisions with bottom domain border TYPE: boolean, default False use\_collision\_border\_front Enable collisions with front domain border TYPE: boolean, default False use collision border left Enable collisions with left domain border TYPE: boolean, default False use collision border right Enable collisions with right domain border TYPE: boolean, default False use\_collision\_border\_top Enable collisions with top domain border TYPE: boolean, default False use\_color\_ramp Render a simulation field while mapping its voxels values to the colors of a ramp or using a predefined color code TYPE: boolean, default False

# use diffusion

Enable fluid diffusion settings (e.g. viscosity, surface tension)

# TYPE:

boolean, default False

# use\_dissolve\_smoke

Let smoke disappear over time

TVDF.

```
LILE.
         boolean, default False
use_dissolve_smoke_log
    Dissolve smoke in a logarithmic fashion. Dissolves quickly at first, but lingers longer.
    TYPE:
         boolean, default True
use_flip_particles
    Create liquid particle system
    TYPE:
         boolean, default False
use_foam_particles
    Create foam particle system
    TYPE:
         boolean, default False
use\_fractions
    Fractional obstacles improve and smoothen the fluid-obstacle boundary
    TYPE:
         boolean, default False
use_guide
    Enable fluid guiding
    TYPE:
         boolean, default False
use_mesh
    Enable fluid mesh (using amplification)
    TYPE:
         boolean, default True
use noise
    Enable fluid noise (using amplification)
    TYPE:
         boolean, default False
use_slice
    Perform a single slice of the domain object
    TYPE:
         boolean, default False
```

# $use\_speed\_vectors$

Caches velocities of mesh vertices. These will be used (automatically) when rendering with motion blur enabled.

# TYPE:

boolean, default False

# use\_spray\_particles

```
Create spray particle system
    TYPE:
         boolean, default False
use tracer particles
    Create tracer particle system
    TYPE:
         boolean, default False
use viscosity
    Simulate fluids with high viscosity using a special solver
    TYPE:
         boolean, default False
vector_display_type
    ullet NEEDLE Needle — Display vectors as needles.
    • STREAMLINE Streamlines - Display vectors as streamlines.
    • MAC MAC Grid - Display vector field as MAC grid.
    TYPE:
         enum in ['NEEDLE', 'STREAMLINE', 'MAC'], default 'NEEDLE'
vector field
    Vector field to be represented by the display vectors
    • FLUID VELOCITY Fluid Velocity - Velocity field of the fluid domain.
    • GUIDE_VELOCITY Guide Velocity - Guide velocity field of the fluid domain.
    • FORCE Force - Force field of the fluid domain.
    TYPE:
         enum in ['FLUID_VELOCITY', 'GUIDE_VELOCITY', 'FORCE'], default 'FLUID_VELOCITY'
vector_scale
    Multiplier for scaling the vectors
    TYPE:
         float in [0, 1000], default 1.0
vector_scale_with_magnitude
    Scale vectors with their magnitudes
    TYPE:
         boolean, default False
vector_show_mac_x
```

Show X-component of MAC Grid

boolean, default True

Show Y-component of MAC Grid

boolean, default True

TYPE:

TYPE:

vector show mac y

```
vector_show_mac_z
   Show Z-component of MAC Grid
   TYPE:
       boolean, default True
velocity grid
   Smoke velocity grid
   TYPE:
       velocity_scale
   Factor to control the amount of motion blur
   TYPE:
       float in [0, inf], default 1.0
viscosity_base
   Viscosity setting: value that is multiplied by 10 to the power of (exponent*-1)
   TYPE:
       float in [0, 10], default 1.0
viscosity_exponent
   Negative exponent for the viscosity value (to simplify entering small values e.g. 5*10^-6)
   TYPE:
       int in [0, 10], default 6
viscosity value
   Viscosity of liquid (higher values result in more viscous fluids, a value of 0 will still apply some viscosity)
   TYPE:
       float in [0, 10], default 0.05
vorticity
   Amount of turbulence and rotation in smoke
   TYPE:
       float in [0, 4], default 0.0
classmethod bl rna get subclass(id, default=None)
   PARAMETERS:
       id (str) – The RNA type identifier.
   RETURNS:
       The RNA type or default when not found.
   RETURN TYPE:
        bpy.types.Struct subclass
classmethod bl rna get subclass py(id, default=None)
   PARAMETERS:
       id (str) – The RNA type identifier.
```

DESTINATO

#### KETUKNS:

The class or default when not found.

# **RETURN TYPE:**

type

# **Inherited Properties**

• bpy struct.id data

# **Inherited Functions**

- bpy struct.as pointer
- bpy\_struct.driver\_add
- bpy struct.driver remove
- bpy\_struct.get
- bpy struct.id properties clear
- bpy\_struct.id\_properties\_ensure
- bpy\_struct.id\_properties\_ui
- bpy\_struct.is\_property\_hidden
- bpy struct.is property overridable library bpy struct.property unset
- bpy\_struct.is\_property\_readonly
- bpy\_struct.is\_property\_set

- bpy struct.items
- bpy\_struct.keyframe\_delete
- bpy struct.keyframe insert
- bpy\_struct.keys
- bpy struct.path from id
- bpy\_struct.path\_resolve
- bpy\_struct.pop
- bpy\_struct.property\_overridable\_library\_set
- bpy\_struct.type\_recast
- bpy struct.values

# References

• FluidModifier.domain settings

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FluidEffectorSettings(bpy stru