FLUIDOS WATER PLANES PRESETS
By
Alvin Bemar

Description:

This package includes three Fluidos scenes, with three presets each one, for three levels of water plane: Level 0 is the smaller and Level 2 is the largest.

	Water Planes Calm	Water in calm. Preset files (.state): presetCalmLevel0, presetCalmLevel1, presetCalmLevel2
	Water Planes Slow-moving	Water flowing slow. Preset files (.state): presetSlowLevel0, presetSlowLevel1, presetSlowLevel2
	Water Planes Fast-moving	Water flowing fast. Preset files (.state): presetFastLevel0, presetFastLevel1, presetFastLevel2

For all the scenes:

> Domain size of Level 0 plane: 5.0 X 1.0 X 3.0 m (High resolution)
> The running of Level 0 consumes about 600-900 MB of RAM.
> Level 0's geometry in the scene consumes about 200 MB

> Domain size of Level 1 plane: 15.0 X 1.5 X 15.0 m (Medium resolution)
> The running of Level 1 consumes about 700-800 MB of RAM.
> Level 1's geometry in the scene consumes about 350 MB

> Domain size of Level 2 plane: 100.0 X 2.4 X 100.0 m (Low Resolution)
> The running of Level 2 consumes about 250-400 MB of RAM.
> Level 2's geometry in the scene consumes about 500 MB

The three planes in scene

Perspective View

Top

Front
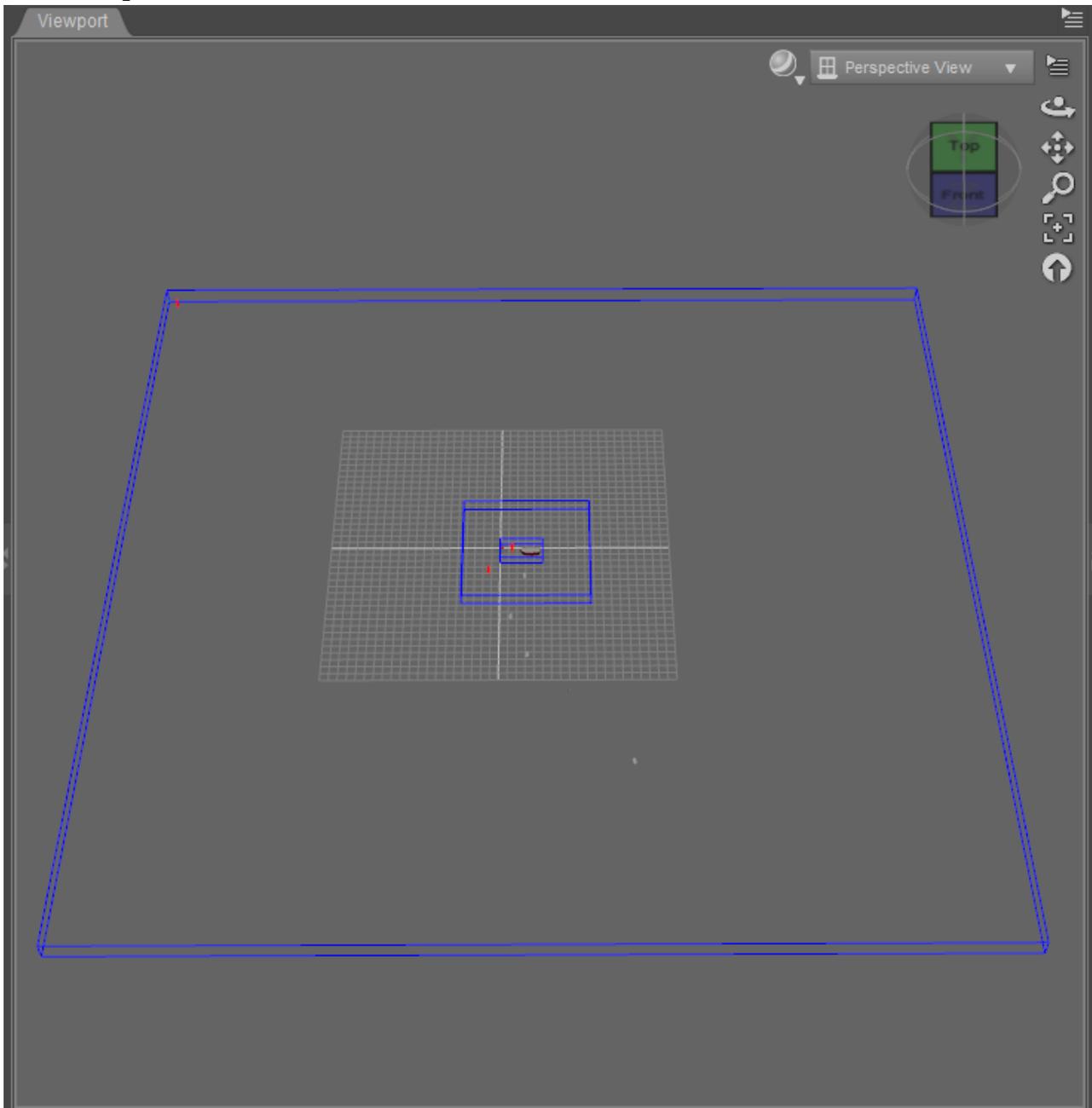
Level 0 water plane is useful for close-ups; Level 1 water plane, for medium shots, and Level 2 water plane, for long shots. Their simulations are independent, but you can enable the meshers of the three at a time to cover close-up to long shots; however, two of them usually are enough. Or you can enable only one. Furthermore, Level groups can be independently moved and rotated.

In the Slow-moving and Fast-moving scenes the water is flowing from -x to +x. If you want to simulate an object advancing over the water, you could set at rest the object and the flowing will do the trick.
In the Calm scene, the water is not flowing (there are only some ripples).

How to use the preset scenes:

1. Load the scene.
2. You'll find three grouped sets of Domain and Meshers, one for each Level water plane, as in the following image:
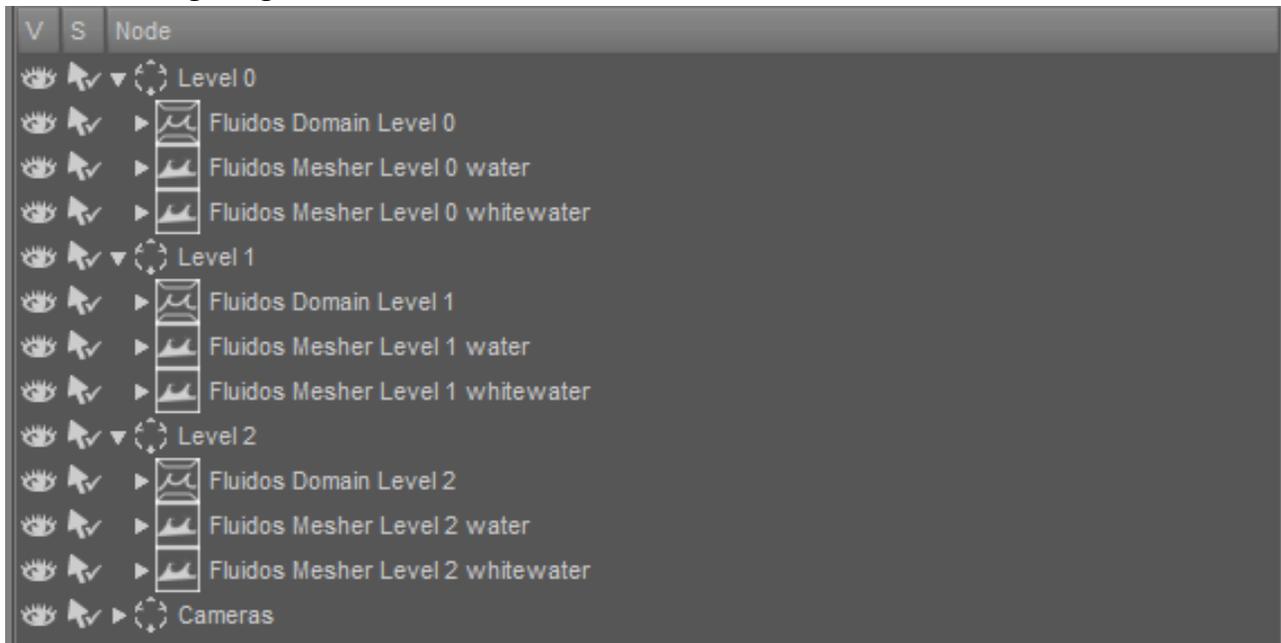
3. Each group points to its corresponding .state file. Moreover, each one points to a default *Baked files folder.* You don't need to select a new folder, but you can do it if you prefer to.
4. As there are three Domains, there will be three independent simulations. You can run all of them (one at a time) or only one or two.
5. Add all the additional objects you wish to be in the scene. If you want any of them to interact with the fluid, parent it to the *Fluidos Domain* you wish. The scenes contain a proxy boat parented to Level 0 plane: you can use it as a proxy if the boat model you want to include is too thin walled. If you don't want the proxy to participate in the simulation, delete it, unparent it or set its *Object type* as *ignored.* The proxy can be reparented to Level 1 water plane (parenting to Level 2 will not produce noticeable effects in water)

V	S	Node
👁 ↘✓ ▼ ◌		Level 0
👁 ↘ ▼ ㎍		Fluidos Domain Level 0
👁 ↘ ㎍		Fluidos Force Level 0
👁 ↘ ㎏		Source Level 0
👁 ↘ ㎏		Sink Level 0
👁 ↘ ⬡		BoatProxy
👁 ↘✓ ▶ ㎍		Fluidos Mesher Level 0 water
👁 ↘✓ ▶ ㎍		Fluidos Mesher Level 0 whitewater
👁 ↘✓ ▼ ◌		Level 1
👁 ↘ ▶ ㎍		Fluidos Domain Level 1
👁 ↘ ▶ ㎍		Fluidos Mesher Level 1 water
👁 ↘ ▶ ㎍		Fluidos Mesher Level 1 whitewater
👁 ↘✓ ▼ ◌		Level 2
👁 ↘ ▶ ㎍		Fluidos Domain Level 2
👁 ↘ ▶ ㎍		Fluidos Mesher Level 2 water
👁 ↘ ▶ ㎍		Fluidos Mesher Level 2 whitewater
👁 ↘✓ ▶ ◌		Cameras
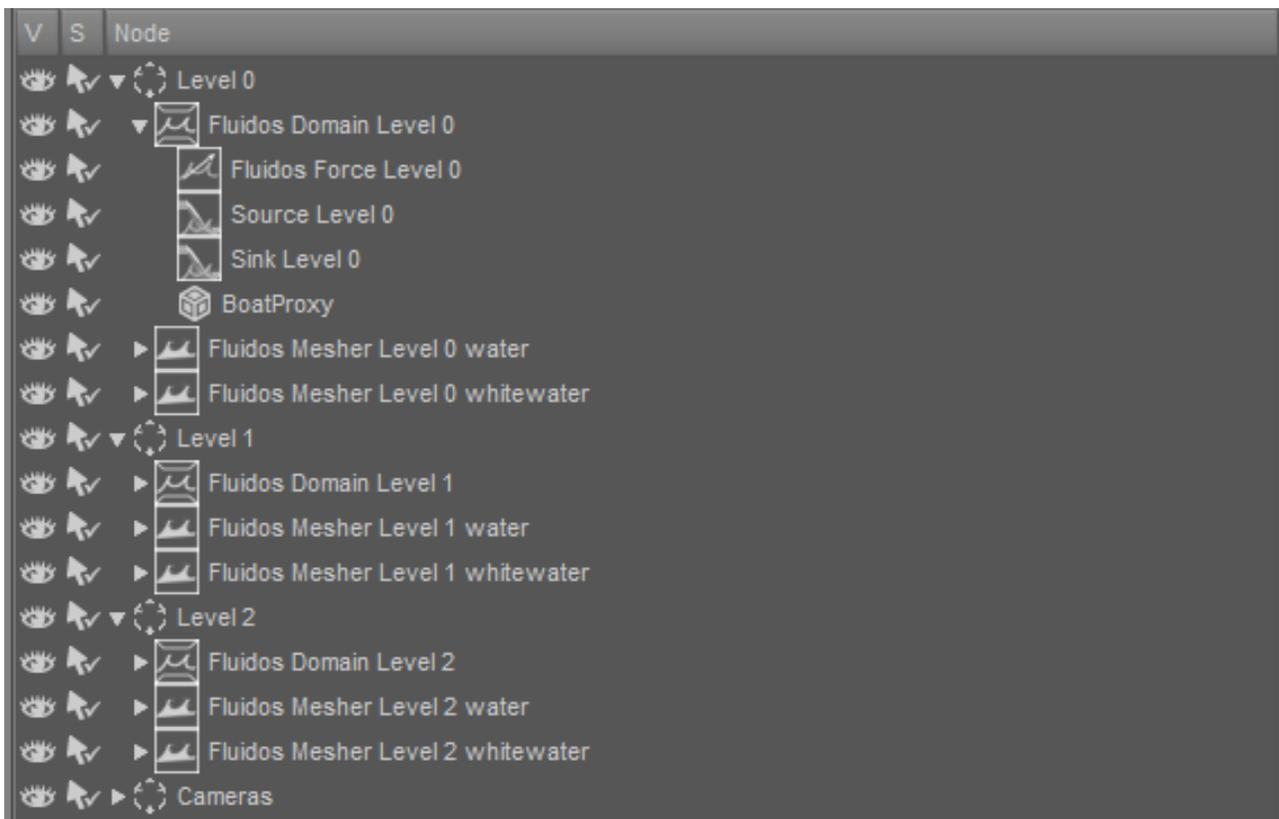
6. If you want only the initial frame, run now the simulation, enable the ***Start from preset*** button
7. Enable the *Meshers* (and set the visibility of the proxy to Off, unless you want to see it in render)

For more than one frame:
1. Before running the simulation, set the desired *Number of frames* in the *Domain* properties.
2. For each *Mesher*, set the *Completion* property to 100 % at the last desired frame.
3. Run the simulation in the desired domains and then enable the appropriate *Meshers*.

How to use the presets with any premade or third-party scene:

1. Load the main scene (i.e. the premade or third party).
2. Merge the *Fluidos* preset scene.
3. Move the *Fluidos Scene* group to the intended location in the main scene.
4. Go on as in *How to use preset scenes*.

The presets could be mixed just like other main scenes in many situations with good results. Also, the presets could be combined parenting objects of the main scene including close-mesh terrains.

Some tips:

- If needed, increase or decrease your main scene instead of the Fluidos preset scene, because the simulation is sensitive to scale. You can resize the meshers after simulation as well (set OFF their *Lock Scale* property or resize the correspondent subgroup)

- For objects larger than the proxy boat, maybe you prefer to parent it to the Level 1 plane or even the Level 2 one. Enlarge the proxy if needed.

- You can move the water planes by moving the proper Level groups. But do not animate the Domain itself during the simulation, it could generate instabilities. After simulation, you can animate the groups if you wish.

- Moving the whitewater meshers upwards could show more particles.

- When overlaping planes, sometimes is better to ajust the *Position Y* of the meshers to do a fine tuning.

- Reduce the *Subdivision level* to get smoother and less prominent details in water surface.

- For any of the *Fluidos* preset, you can change any property of the *Domain* or the objects parented. The only exceptions are the *Cell size* and the *Size* X, Y and Z of the *Domain* (if you change these and select *Start from preset*, the simulation will fail). However, by default, the fluid masses will be ignored when running presets. To activate any *Fluid mass* object, enable *Allows initial fluid masses* in *Main settings* of *Domain*. If you want more whitewater particles, increase the *Max number of diffuse particles*; but if you want fewer particles (although more than zero), then disable the *Include diffuse particles*, run a frame (set 0 in *Number of frames)* and reenable the *diffuse particles* with the desired *Max number*, set the *Number of frames* you want, and run the simulation as *Continue saved state*.

- For more precise or slower simulation, increase the *Frames per second* (*Main Settings*)

- You can change the shaders to any you wish by applying them to the meshers. However, the default materials are optimized to avoid noticing the overlap of two or more planes.

- The presets are, by default, for IRAY rendering. But if you prefer to do 3Delight rendering, apply the included 3Delight materials to the meshers.

- There is included a Bottom plane (a primitive) in Level 2 group. It is useful in case the fluid in simulation let holes in bottom.