








FLUIDOS TORNADO I PRESETS

By
Alvin Bemar

Description:

This package includes eleven Fluidos presets, some rotate clockwise, some counterclockwise.

	Tornado Irregular Clockwise	Domain size of cone: 110 X 100 X 110 m The running consumes about 150 - 200 MB of RAM. Medium resolution. Preset files (.state): presetConeIrregularCW, presetDebrisIrregularCW and presetCloudCW
	Tornado Irregular Counterclockwise	Domain size of cone: 110 X 100 X 110 m The running consumes about 150 - 200 MB of RAM. Medium resolution. Preset files (.state): presetConeIrregularCCW, presetDebrisIrregularCCW and presetCloudCCW
	Tornado Width 1 Clockwise	Domain size of cone: 110 X 100 X 110 m The running consumes about 150 - 200 MB of RAM. Medium resolution. Preset files (.state): presetConeWidth1CW, presetDebrisWidth1CW and presetCloudCW
	Tornado Width 1 Counterclockwise	Domain size of cone: 110 X 100 X 110 m The running consumes about 150 - 200 MB of RAM. Medium resolution. Preset files (.state): presetConeWidth1CCW, presetDebrisWidth1CCW and presetCloudCCW
	Tornado Width 3 Clockwise	Domain size of cone: 110 X 100 X 110 m The running consumes about 150 - 200 MB of RAM. Medium resolution. Preset files (.state): presetConeWidth3CW, presetDebrisWidth3CW and presetCloudCW
	Tornado Width 3 Counterclockwise	Domain size of cone: 110 X 100 X 110 m The running consumes about 150 - 200 MB of RAM. Medium resolution. Preset files (.state): presetConeWidth3CCW, presetDebrisWidth3CCW and presetCloudCCW
	Tornado tilted example (Counterclockwise)	Domain size of cone: 110 X 100 X 110 m The running consumes about 150 - 200 MB of RAM. Medium resolution. Preset files (.state): presetConeWidth1CCW, presetDebrisWidth1CCW and presetCloudCCW

For all the scenes:

Domain size of the top cloud: 170 X 35 X 170 m (although in the scenes its meshes are resized three times).

Domain size of the debris: 80 X 40 X 80 m

The geometry in the scene consumes about 1.0 – 1.5 GB

The tornados are produced by the dynamic equilibrium between two strong forces in the same domain: *torque* and *linear*. The *torque* rotates the fluid and the *linear force* retains it in the center of the Domain. Increasing the linear force produces thinner tornado cones; decreasing and increases the width of the cone.

To get a tilted tornado, you could use D-Formers (an example is included), apply them to the meshers. Sometimes, after loading a saved scene the D-Former disconnects from the mesher. To fix this, there is included a script, *Tornado D-Form Activation*, apply it to the D-Former Base (parented to the corresponding mesher).

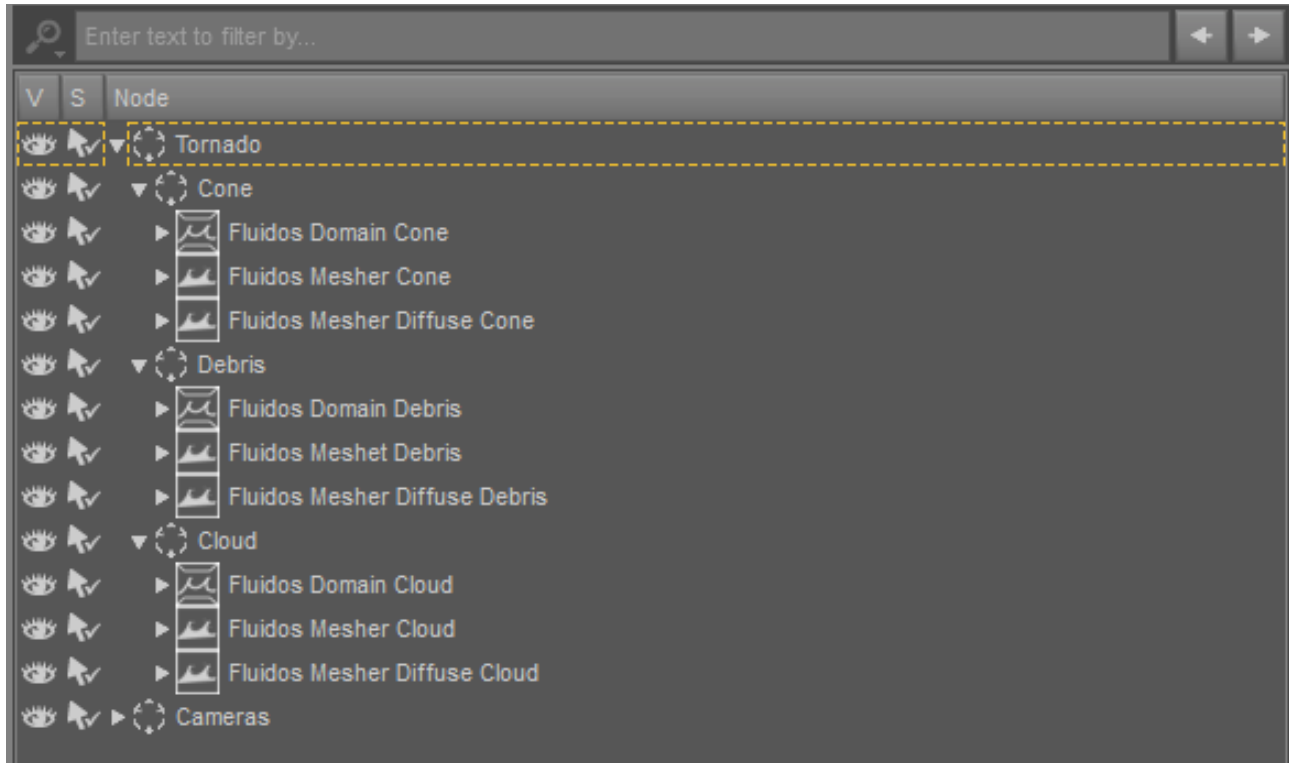
The Cones, Clouds and Debris have their independent *Fluidos Domain* and are simulated separately. Although each scene has its default presets, you can change them.

The Cloud meshers are resized three times in the scenes to get larger clouds.

Note: Due to the nature of the product the materials will not show compatible in smart content. To apply the materials to the Mesher, first select the Mesher you wish to apply the material too in the Scene Tab, and then navigate to the materials folder (Scenes\AlvinBemar\Fluidos\Tornado\Materials). Finally, apply the desired material to selected Mesher.

How to use the preset scenes:

1. Load the scene.
2. Inside the *Tornado* group, you'll find three sets of Domain and Mesher, one for the tornado's cone, another for the debris, and the last one for the tornado's top cloud, 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. Take into account that all the scenes point to the same *Baked files folder*, thus a new simulation will delete the previous one.
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.
6. If you want only the initial frame, run now the simulation, enabling the **Start from preset** button
7. Enable the *Meshers*. About the debris meshers, you probably want to choose only one: the *Diffuse* is suitable to represent solids; the other one, is a regular solid geometry mesher prepared to represent water.

For more than one frame:

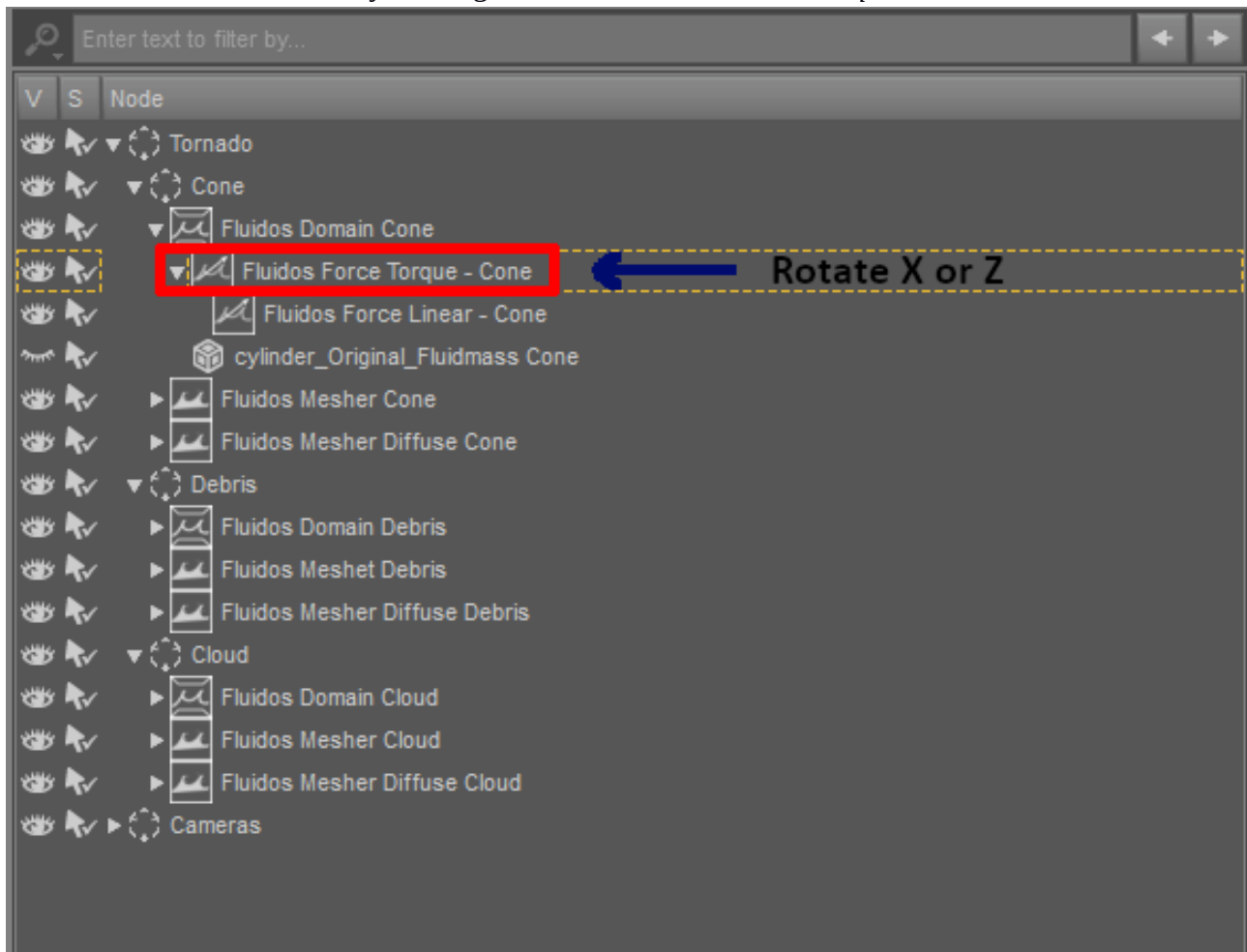
1. Before running the simulation, set the desired *Number of frames* in the *Domain* properties.
2. For each *Mesher*, set the *Completion* property to 100 % at the last desired frame.
3. Run the simulation in the desired domains and then enable the appropriate *Meshers*.

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. If you prefer, you can substitute the shore terrain of *Fluidos* presets for a terrain of your choice (if the new terrain is open-mesh, use *Fluidos Companion*, *Hexagon*, *Carrara* or any other suitable software).

The tornadoes could be tilted by rotating a little the *Fluidos Force Torque – Cone*.



In the *Tornado Irregular* scenes, the *Fluidos Force Torque – Cone* is rotated in the y-axis. This type of rotation does not affect the torque force; but this way, the parented *Fluidos Force Linear – Cone* does rotate around the torque.

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)
- You could use only the solid geometry mesher of the cone or the cloud, or only the diffuse meshers.
- To get a smoother tornado geometries, increase the *Surface Smoothing value* (say 0.95) and the *Smoothing iterations* (6 or more). Another option is to set the Subdivision level to 1, but this could produce too gross results.
- You can move the tornado upwards or downwards or to the sides by moving the *Tornado* or *Cone* group and the *Debris* or *Cloud* subgroups.
- 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*.
- You can increase or decrease the particles sizes (diffuse meshers) to change the apparent density of the debris or the cone and cloud.
- You can change the shaders to any you wish by applying them to the meshers.
- The presets are, by default, for IRAY rendering. But if you prefer to do 3Delight rendering, apply the included 3Delight materials to the meshers (see the [note](#) at second page)