

Liquid Interaction

This page provides information on the Interaction rollout of a Liquid Simulator.

Overview

It is strongly recommended that each geometry interacting with the fluid simulation:

- has no open edges or holes;
- does not self-intersect;
- has normals pointing outwards.

Phoenix will try to handle any geometry that does not comply with these conditions, but the simulation might not behave properly. For example, in the case of fire/smoke simulations, some areas of the simulation may lose velocity and freeze for no apparent reason, whereas in liquid simulations, particle explosions can appear.

This dialog is used to enable/disable the interaction with objects in the scene. There are several different types of objects that may affect the simulation: Sources, Solid objects, Forces, etc.

By default, all these scene elements will interact with the simulator unless otherwise specified by the **Include/Exclude list**. If you want to disable the interaction, you have to put the objects in the **Exclude list**. If there are more objects that don't need to interact with the simulator, you may alternatively switch to the **Include list** mode. In this mode, you need to add to the list all the objects that you want to interact with the simulator.

Since all forces affect the simulation by default, adding a force in your scene to be used by PFlow, for example, will also automatically affect your simulation and this might not be desirable. In the Active Forces list, you can check which 3ds Max forces interact with the simulator, and you may exclude forces if you wish to.

UI Path: ||Select Liquid Simulator object|| > **Modify panel > Interaction rollout**

Parameters

Expand – Opens a floating dialog that contains the selected rollout and automatically folds the command panel rollout.

Re-Center – Resets the position of the floating rollout.

? – Opens up the help documents for the Liquid Interaction.

Include/Exclude List | *ielist_new, iemode_new* – Determines which objects will be ignored or processed by the simulation. Use the radio buttons to switch between **Include list** and **Exclude list**. When **Exclude list** is active (the default), all objects in the scene will interact with the simulator unless they are added to the exclusion list. In **Include list** mode, no objects will interact with the simulator unless they are added to the list.

Exclude Hidden Objects | *exclhidden_new* – When enabled, the hidden objects will be excluded no matter if they are in the list or not.

Exclude Fire/Smoke Sims | *exclfiresm* – When enabled, [Fire/Smoke Simulators](#) will not interact with the Liquid Simulator.

Add – Adds the selected object to the Scene Interaction list.

Add Many – Adds many objects to the Scene Interaction list allowing to quickly add a list of nodes.

Remove – Removes the selected object from the Scene Interaction list.

Scene Interaction ☰

Include List Exclude List

Exclude Hidden Objects

Exclude Fire/Smoke Sims