5.8.5.5 Modeling - Modifiers - Deform - Displace Modifier
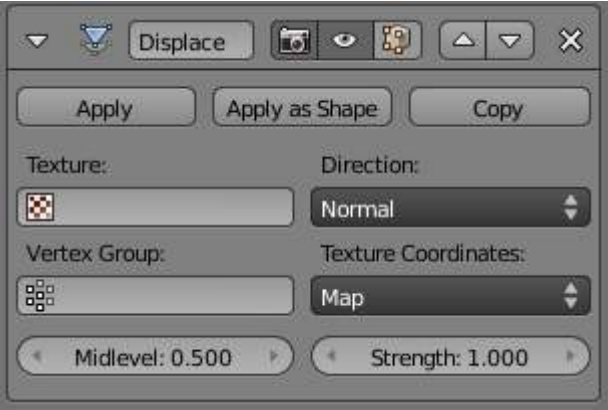
Displace Modifier

The Displace modifier displaces vertices in a mesh based on the intensity of a texture. Either procedural or image textures can be used. The displacement can be along a particular local axis, along the vertex normal, or the separate RGB components of the texture can be used to displace vertices in the local X, Y and Z directions simultaneously (sometimes referred to as *Vector Displacement*).

Options

Displace modifier

Texture
> The name of the texture from which the displacement for each vertex is derived. If this field is empty, the modifier defaults to `1.0` (white).

Direction

> The direction along which to displace the vertices. Can be one of the following:

> **X, Y, Z**
>> Displace along a local axis.

> **Normal**
>> Displace along vertex normal.

> **RGB to XYZ**
>> Displace along local XYZ axes individually using the RGB components of the texture (Red values displaced along the X-axis, Green along the Y, Blue along the Z). This is sometimes referred to as *Vector Displacement*.

Texture Coordinates

> The texture coordinate system to use when retrieving values from the texture for each vertex. Can be one of the following:

> **UV**

Take texture coordinates from face UV coordinates.

UV Map

The UV coordinate layer from which to take texture coordinates. If the object has no UV coordinates, it uses the *Local* coordinate system. If this field is blank, but there is a UV coordinate layer available (e.g. just after adding the first UV layer to the mesh), it will be overwritten with the currently active UV layer.

Note
Since UV coordinates are specified per face, the UV texture coordinate system currently determines the UV coordinate for each vertex from the first face encountered which uses that vertex; any other faces using that vertex are ignored. This may lead to artifacts if the mesh has non-contiguous UV coordinates.

Object

Take the texture coordinates from another object's coordinate system (specified by the *Object* field).

Object

The object from which to take texture coordinates. Moving the object will therefore alter the coordinates of the texture mapping.

Take note that moving the original object will **also** result in a texture coordinate update. As such, if you need to maintain a displacement coordinate system while moving the modified object, consider parenting the coordinate object to the modified object.

If this field is blank, the *Local* coordinate system is used.

Global

Take the texture coordinates from the global coordinate system.

Local

Take the texture coordinates from the object's local coordinate system.

Vertex Group

The name of a vertex group which is used to control the influence of the modifier. If left empty, the modifier affects all vertices equally.

Midlevel

The texture value which will be treated as no displacement by the modifier. Texture values below this value will result in negative displacement along the selected direction, while texture values above this value will result in positive displacement.

This is achieved by the equation `displacement = texture_value - Midlevel`. Recall that color/luminosity values are typically between `0.0` and `1.0` in Blender, and not between `0` and `255`.

Strength

The strength of the displacement. After offsetting by the *Midlevel* value, the displacement will be multiplied by the *Strength* value to give the final vertex offset. This is achieved by the equation `vertex_offset = displacement * Strength`. A negative strength can be used to invert the

effect of the modifier.