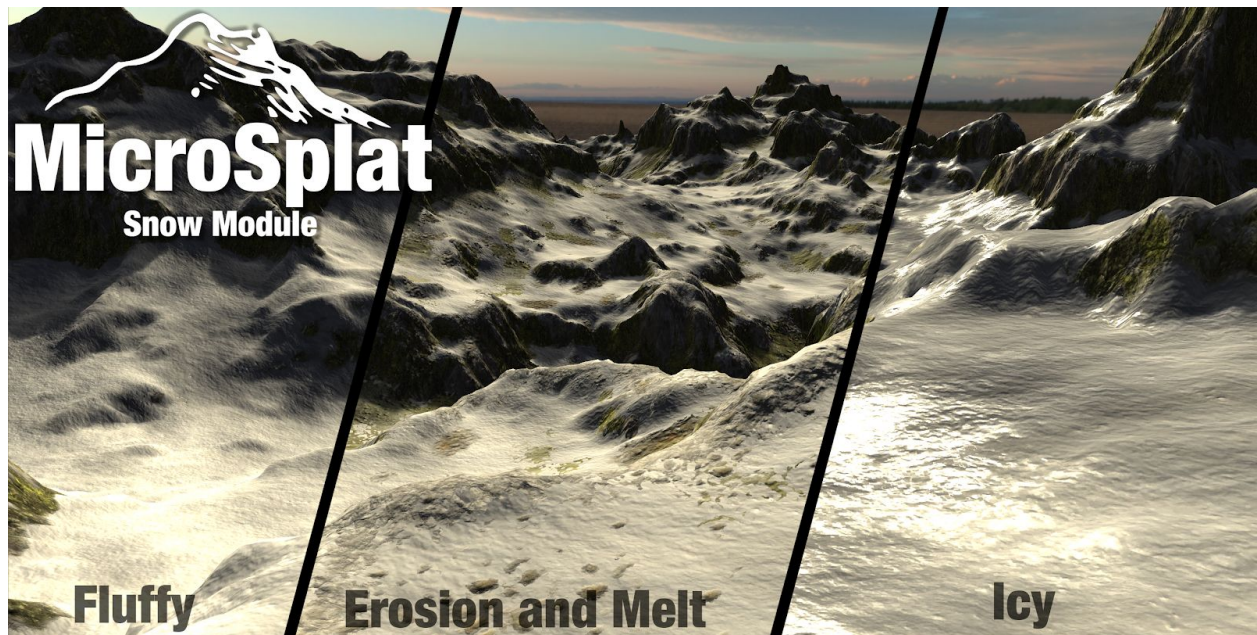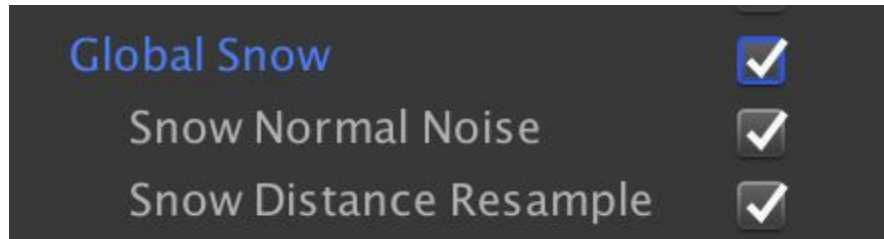# MicroSplat

Snow Module, Documentation

Overview

The Snow module adds dynamic snow to the scene, and features the ability to erode or age the snow into an icy surface.

Shader Features

Turning on the 'Global Snow' option will recompile the shader add two additional options for Snow. The Snow Normal Noise option allows you to blend in a normal map over the snow. The Snow Distance Resample option will resample the snow textures with a different UV scale, blending between the two over a distance. These features are both easy and cheap improvements to the shader, allowing you to add additional variation to break up tiling and give a larger sense of scale to the snow.

If the Texture Clusters module is also installed, an option for Stochastic Sampling the snow is also available. Stochastic sampling is another anti-tiling technique which completely eliminates all tiling artifacts, but requires 3 samples per texture instead of 1.

Shader Parameters
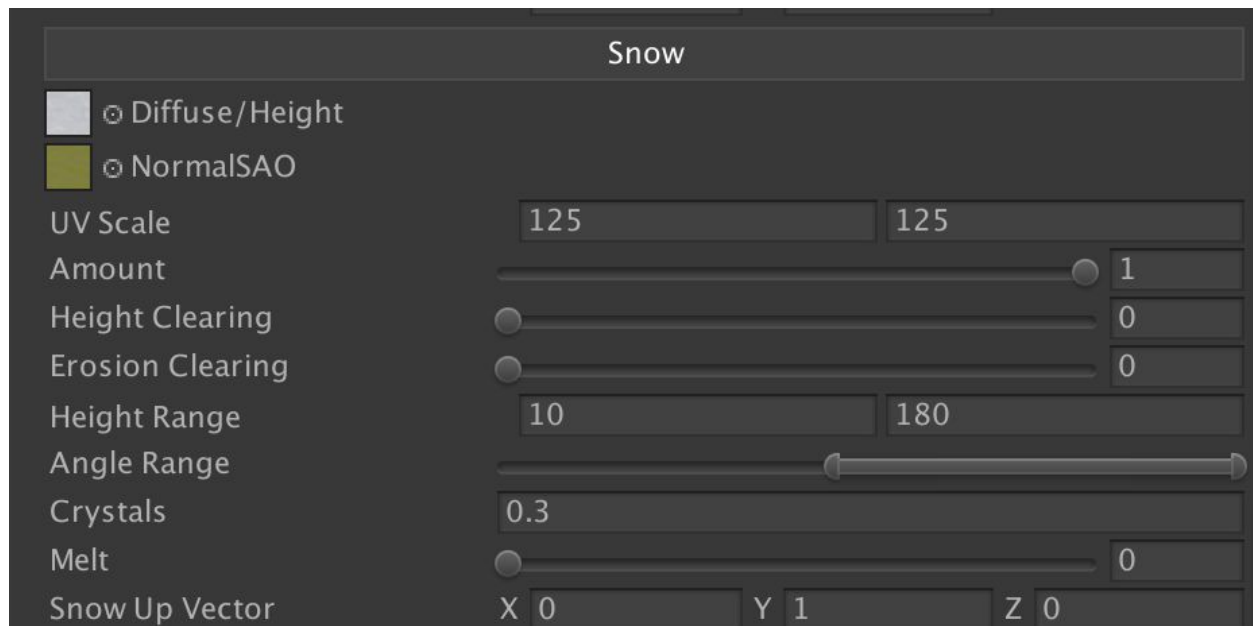
The main shader parameters available for snow are described below:

- Diffuse/Height
    - This is the albedo (RGB) and height map (A) texture packed into a single texture
- NormalSAO
    - This is the Normal (RG), Smoothness (B) and Ambient Occlusion (AO) of the snow packed into one texture
- UVScale
    - UV Scale for the snow texture
- Amount
    - Amount of snow
- Height Clearing
    - Causes snow to not appear on the tops of surfaces
- Erosition Clearing
    - Causes snow to erode on surfaces with high ambient occlusion values
- Height Range
    - Height at which snow begins to appear and height at which it is 100% snowy
- Angle Range

- Angles in which snow will accumulate
- Crystals
  - How crystalline (Icy) the snow is. Values around 0 are fluffy snow, where as values above 1 are very icy.
- Melt
  - How large the area of wetness should be around the snow edge
- Up Vector
  - The direction the snow accumulated from. Can be used to simulate snow in heavy winds, where accumulation happens on one side of the mountain but not the other.
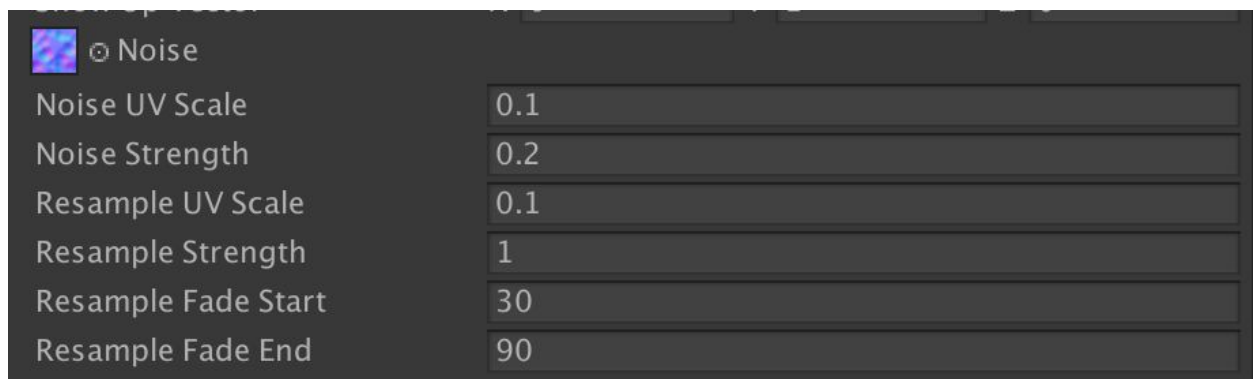
Additional properties are available for Snow Normal Noise and Distance Resampling.
- Noise
  - A bump map to tile over the terrain
- Noise UV Scale
  - Scales Snow UV coordinates by this amount
- Noise Strength
  - How much to blend in this normal into the base normal
- Resample UV Scale
  - Scale of UVs for distance based resampling
- Resample Strength
  - How much should we blend in the distance samples
- Resample Fade Start/End
  - The distance range in which we should cross fade the samples
- Stochastic Contrast
  - Contrast of the blending when stochastic sampling is enabled.

- Stochastic Scale
    - Size of the stochastic triangles when stochastic sampling is used.

Finally, the amount of snow which appears can be controlled on a per texture basis in the per-texture properties settings.

Adding Snow To Objects

If you own the Terrain Blending module, you can use it to add snow to many meshes in your scene. Simply add the MicroSplatBlendableObject component and make sure the snow feature is turned on, and you can adjust settings to make the snow appear on top of meshes.