Class

MDLSkyCubeTexture

A generator of texel data that creates cube textures using a physically realistic simulation of the sunlit sky.

iOS 9.0+ | iPadOS 9.0+ | Mac Catalyst 13.1+ | macOS 10.11+ | tvOS 9.0+ | visionOS 1.0+

```
class MDLSkyCubeTexture
```

Overview

The sky textures generated by this class can can be useful as environment maps or light probes in rendering. Like other procedural `MDLTexture` subclasses, the `MDLSkyCubeTexture` class generates texel data only when that data is first referenced, and then caches it for future use.

Topics

Creating a Sky Cube Texture

`init(name: String?, channelEncoding: MDLTextureChannelEncoding, textureDimensions: vector_int2, turbidity: Float, sunElevation: Float, upperAtmosphereScattering: Float, groundAlbedo: Float)`

Initializes a sky cube texture object with the specified parameters.

Working with Sky Simulation Parameters

`var turbidity: Float`

The cloudiness or haziness of the simulated sky.

`var sunElevation: Float`

The sun's position in the simulated sky.

`var upperAtmosphereScattering: Float`

A factor that influences the color of the simulated sky.

`var groundAlbedo: Float`

A factor that influences the clarity of the simulated sky.

`var groundColor: CGColor?`

The color of the simulated ground.

`var horizonElevation: Float`

The angle, in radians relative to center, below which to render the ground color.

Working with Tone Mapping Parameters

`var gamma: Float`

The amount of gamma correction to apply during tone mapping.

`var exposure: Float`

The amount of exposure compensation to apply during tone mapping.

`var brightness: Float`

The amount of brightness enhancement to apply during tone mapping.

`var contrast: Float`

The amount of contrast enhancement to apply during tone mapping.

`var saturation: Float`

The amount of saturation enhancement to apply during tone mapping.

`var highDynamicRangeCompression: vector_float2`

Two parameters that determine the brightness compression curve for colors in the texture image.

Updating Texture Data

`func update()`

Generates new texel data matching the current sky parameters.

Initializers

```
init(name: String?, channelEncoding: MDLTextureChannelEncoding, texture
Dimensions: vector_int2, turbidity: Float, sunElevation: Float, sun
Azimuth: Float, upperAtmosphereScattering: Float, groundAlbedo: Float)
```

Instance Properties

```
var sunAzimuth: Float
```

Relationships

Inherits From

MDLTexture

Conforms To

CVarArg
CustomDebugStringConvertible
CustomStringConvertible
Equatable
Hashable
MDLNamed
NSObjectProtocol

See Also

Textures

class MDLTexture

A source of texel data to be used in rendering material surface appearances.

class MDLCheckerboardTexture

A generator of texel data that creates a checkerboard pattern with two specified colors.

`class` `MDLColorSwatchTexture`

A generator of texel data that creates a gradient between two specified colors.

`class` `MDLNoiseTexture`

A generator of texel data that creates a field of random noise.

`class` `MDLNormalMapTexture`

A generator of texel data that computes a normal map from a supplied texture.

`class` `MDLURLTexture`

A lightweight reference to a URL from which to load texture data.

`class` `MDLTextureFilter`

A description of filtering modes for a renderer to use when sampling from a texture.

`class` `MDLTextureSampler`

An object that pairs a source of texture data with sampling parameters to be used in rendering the texture.