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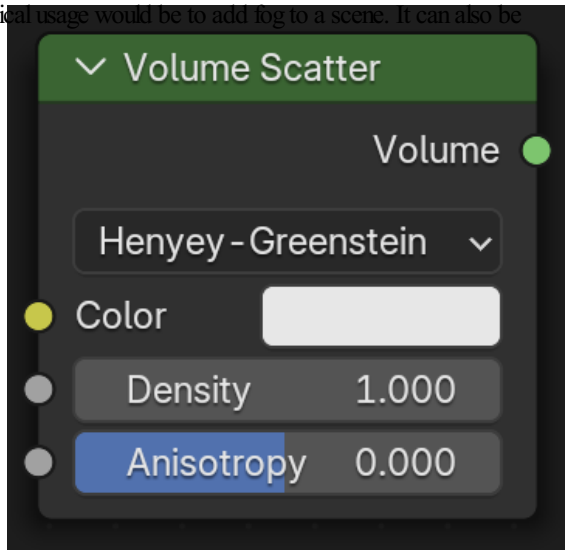
Volume Scatter

The *Volume Scatter* node allows light to be scattered as it passes through the volume. Typical usage would be to add fog to a scene. It can also be used with the Volume Absorption node to create smoke.



Inputs

Color
: Scattering coefficients per color channel.

Density
: The density of the scatter effect.

Anisotropy **Henyey-Greenstein** **Draine**
: Controls the relative amount of backward and forward scattering.

IOR **Fournier-Forand**
: Refractive index of the scattering particles relative to water. Common ocean waters range between 1.0 and 1.2, while turbid waters with higher density of particles have higher IORs.

Backscatter **Fournier-Forand**
: Fraction of light that is scattered backwards. Most oceanic particles have backscatter values between 0.001 (e.g., very large phytoplankton) and 0.1 (e.g., very small mineral particles), pure water has a backscatter of 0.5. Values taken from Ocean Optics Web Book.

Alpha **Draine**
: Blending factor between Henyey-Greenstein (\(\alpha = 0\)) and Cornette & Shanks (\(\alpha = 1\)) phase functions.

Diameter **Mie**
: Diameter of the scattering particles in µm.

Properties

Phase
: Volume scattering phase function.

Henyey-Greenstein:
: Simple and widely used phase function, useful for approximating scattering in biological tissues.

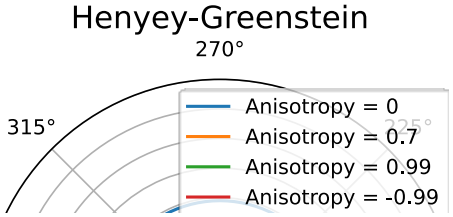
Fournier-Forand:
: Cycles Only Suitable for modeling the scattering of light in underwater environments.

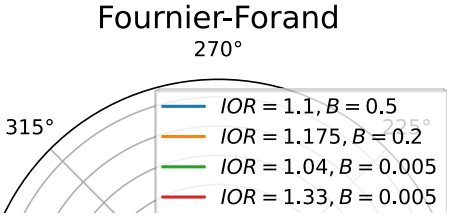
Draine:
: Cycles Only Suitable for modeling the scattering of interstellar dust.

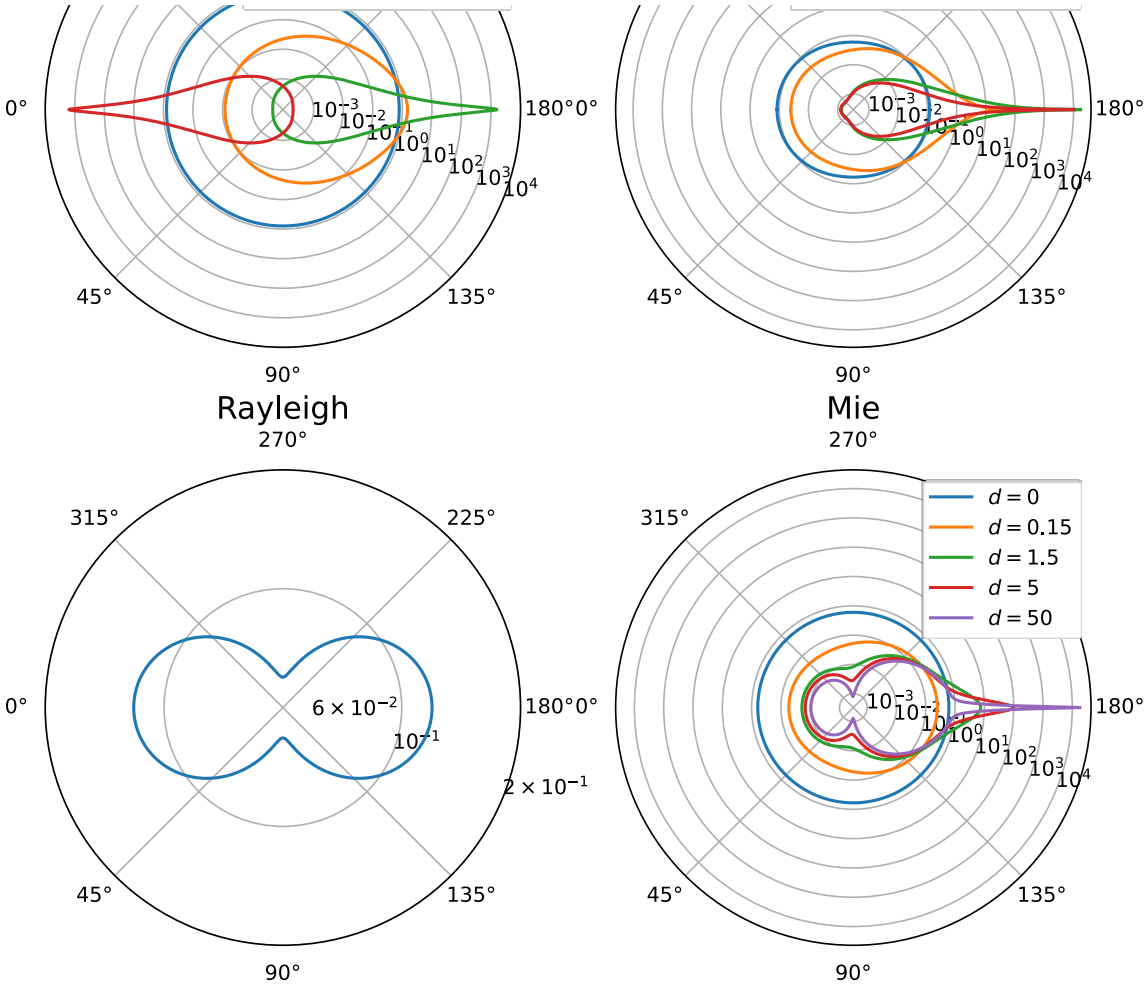
Rayleigh:
: Cycles Only Describes the scattering by particles with a size smaller than the wavelength of light, such as the scattering of sunlight in earth's atmosphere.

Mie:
: Cycles Only Describes the scattering by particles with a size larger than the wavelength of light, such as cloud and fog.

> Tip
>
> These phase functions can be combined using a Mix Shader.







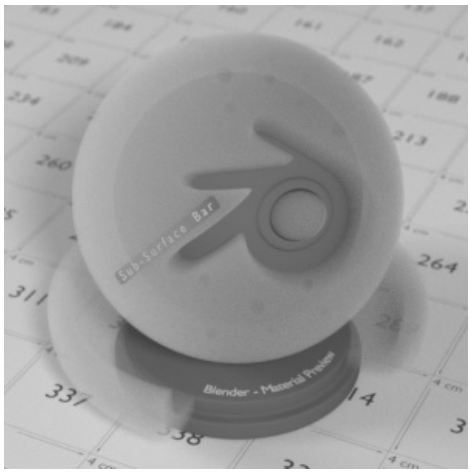
Volume scattering phase as a function of angles between the incoming and the outgoing direction, in logarithmic scale. Light comes from the left side.

Outputs

Volume

The Volume Shader output must be plugged into the *Volume Input* of the Material or World Output node.

Examples



Example of Volume Scatter.

Previous
Volume Absorption

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