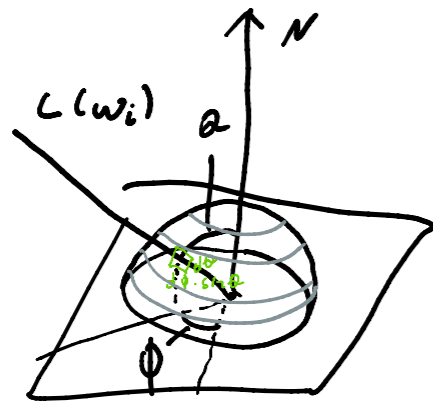


01 Reflection Models

15 February 2018 01:48



$$H = \int_{\Omega} L(\omega) \cos \theta \, d\omega$$

$$d\omega = d\theta \, d\phi \, \sin \theta$$

$$H = \int_0^{2\pi} \int_0^{\frac{\pi}{2}} L(\theta, \phi) \cdot \cos \theta \sin \theta \, d\theta \, d\phi$$

if $L(\theta, \phi) = \text{const} = L$

$$\begin{aligned} H &= \int_0^{2\pi} \int_0^{\frac{\pi}{2}} L \cos \theta \sin \theta \, d\theta \, d\phi \\ &= L \, 2\pi \left[-\frac{1}{2} \cos^2 \theta \right]_0^{\frac{\pi}{2}} \\ &= L \, 2\pi \cdot \frac{1}{2} = L\pi \end{aligned}$$

$$\int_0^{2\pi} k \, d\phi = 2\pi k$$

$$\int \cos \theta \cdot \sin \theta \, d\theta = -\frac{1}{2} \cos^2 \theta$$

Reflected ray

$$R(I) = I - 2N(I \cdot N)$$

