782 Equations

$$L_o(\mathbf{x},\vec{\omega}_o) = L_e(\mathbf{x},\vec{\omega}_o) + \int_\Omega f_r(\mathbf{x},\vec{\omega}_o,\vec{\omega}_i)L_i(\mathbf{x},\vec{\omega}_i)\cos\theta_i d\vec{\omega}_i$$

$$E(p,n) = \int_\Omega L_i(p,\omega)|cos\theta|d\omega$$

$$E = I\frac{d\omega}{dA} = \frac{\Phi}{4\pi}\frac{cos\theta}{|\mathbf{x}-\mathbf{x}_s|^2}$$

$$f_r(p,\omega_o,\omega_i) = \frac{dL_o(p,\omega_o)}{dE(p,\omega_i)} = \frac{dL_o(p,\omega_o)}{L_i(p,\omega_i)\cos\theta_i d\omega_i}$$

$$L_o(p,\omega_o) = \int_{S^2} f_r(p,\omega_o,\omega_i)L_i(p,\omega_i)|\cos\theta_i|d\omega_i$$

$$\rho(p) \equiv \frac{d\Phi_o(p)}{d\Phi_i(p)} = \frac{\iint_\Omega f(p,\omega_o,\omega_i)L_i(p,\omega_i)\cos(\theta_o)\cos(\theta_i)d\omega_o d\omega_i}{\iint_\Omega L_i(x,\omega)\cos(\theta_i)d\omega_i}$$

$$\rho_{hd}(p,\omega_o) = \frac{1}{\pi}\int_{H^2(n)} f_r(p,\omega_o,\omega_i)|\cos\theta_i|d\omega_i$$

$$\rho_{hh}(p) = \frac{1}{\pi}\int_{H^2(n)}\int_{H^2(n)} f_r(p,\omega_o,\omega_i)|\cos\theta_o\cos\theta_i|d\omega_o d\omega_i$$

$$\rho = \frac{F_\lambda}{\pi}\frac{DG}{(N\cdot V)(N\cdot L)}$$

$$\overline{Y} = \exp\left(\frac{1}{N}\sum_{x,y}\log(\delta + Y_w(x,y))\right)$$

$$lc(s,x,y) = \frac{B_s(x,y) - B_{2s}(x,y)}{B_s(x,y)}$$

$$Y_{display}(x,y) = \frac{Y_{world}(1+\frac{Y(x,y)}{Y_{white}^2})}{1+Y_{white}}$$

$$Y_d = \frac{Y(x,y)}{1+Y_l(x,y,s)}$$

$$R_i(x,y,s) = \frac{1}{\pi(\alpha_i s)^2}\exp\left(-\frac{x^2+y^2}{(\alpha_i s)^2}\right)$$

$$V_i(x,y,s) = L(x,y)\otimes R_i(x,y,s)$$

$$V(x,y,s) = \frac{V_1(x,y,s) - V_2(x,y,s)}{2^\phi a/s^2 + V_1(x,y,s)}$$

$$Y_d(x,y) = \frac{Y(x,y)}{1+V_l(x,y,s_m)}$$

$$R = \int w(\lambda)L(\lambda)d\lambda$$

$$X = \int x(\lambda)S(\lambda)d\lambda$$

$$Y = \int y(\lambda)S(\lambda)d\lambda$$

$$Z = \int z(\lambda)S(\lambda)d\lambda$$

$$\begin{bmatrix}X\\Y\\Z\end{bmatrix} = \begin{bmatrix}0.5149 & .3244 & .1607\\0.2654 & .6704 & .0642\\0.0248 & .1248 & .8504\end{bmatrix}\begin{bmatrix}R\\G\\B\end{bmatrix}$$

$$\eta_i \sin\theta_i = \eta_t \sin\theta_t$$

$$\eta_i N \times I = \eta_t N \times T$$

$$r_{\parallel} = \frac{\eta_t \cos\theta_i - \eta_i \cos\theta_t}{\eta_t \cos\theta_i + \eta_i \cos\theta_t}$$

$$r_{\perp} = \frac{\eta_i \cos\theta_i - \eta_t \cos\theta_t}{\eta_i \cos\theta_i + \eta_t \cos\theta_t}$$

$$F_r(\omega_i) = \frac{1}{2}\left(r_{\parallel}^2 + r_{\perp}^2\right)$$

$$F_t(\omega_i) = \left(1 - F_r(\omega_i)\right)$$

$$r_{\parallel}^2 = \frac{\left(\eta^2 + k^2\right)\cos^2\theta_i - 2\eta\cos\theta_i + 1}{\left(\eta^2 + k^2\right)\cos^2\theta_i + 2\eta\cos\theta_i + 1}$$

$$r_{\perp}^2 = \frac{\left(\eta^2 + k^2\right) - 2\eta\cos\theta_i + \cos^2\theta_i}{\left(\eta^2 + k^2\right) + 2\eta\cos\theta_i + \cos^2\theta_i}$$

$$\eta = \frac{1 + \sqrt{F_r(0)}}{1 - \sqrt{F_r(0)}}$$

$$k = 2\sqrt{\frac{F_r(0)}{1 - F_r(0)}}$$

$$L_o(p, \omega_o) = \left(k_d\left(N \cdot \omega_i\right) + k_d\left(R(\omega_o, N) \cdot \omega_i\right)^e\right) L_i(p, \omega_i)$$

$$f_r(p, \omega_i, \omega_o) = k_d + k_s \frac{\left(H(\omega_o, \omega_i) \cdot N\right)^e}{\left(N \cdot \omega_i\right)}$$

$$\omega_h = H(\omega_o, \omega_i) = norm(\omega_o + \omega_i)$$

$$G = \min\left[1, \frac{2(N \cdot \omega_h)(N \cdot \omega_o)}{(\omega_o \cdot \omega_h)}, \frac{2(N \cdot \omega_h)(N \cdot \omega_i)}{(\omega_o \cdot \omega_h)}\right]$$

$$D_N(B, P) = \sup_{b \in B}\left|\frac{\#\{x_i \in b\}}{N} - Vol(b)\right|$$