$$s = 1 - j\frac{\sigma_e}{\omega\varepsilon_0 n^2} = 1 - j\frac{\sigma_m}{\omega\mu_0}. \tag{37}$$

$$\sigma_e = \sigma_{max}\left(\frac{\rho}{d}\right)^m \tag{42}$$

$$\sigma_{max} = \frac{(m+1)}{2}\frac{\varepsilon_0 c\, n}{d}\ln\left(\frac{1}{R}\right) \tag{44}$$

$$s = \begin{cases} 1 & \text{in non PML region} \\ 1 - j\dfrac{(\alpha+1)\lambda}{4\pi d n}\left(\dfrac{\rho}{d}\right)^{\alpha}\ln\left(\dfrac{1}{R_t}\right) & \text{in PML region} \end{cases} \tag{45}$$

$$m = 2$$