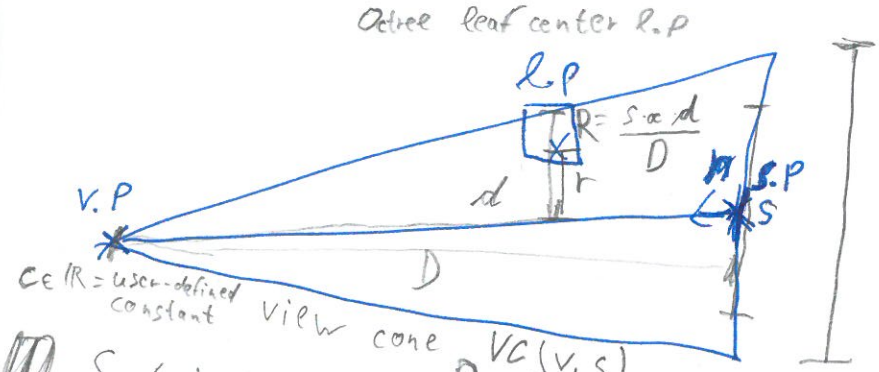


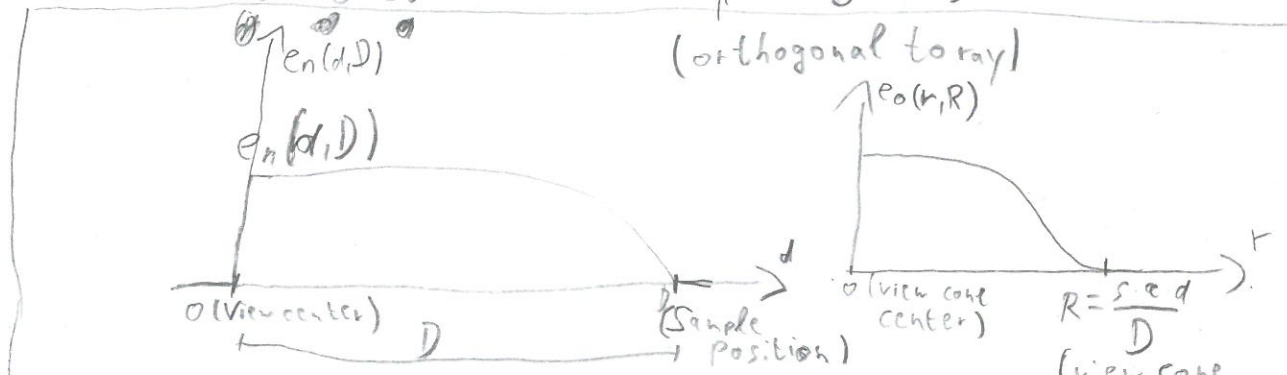
Volume integral of simple view cone $= \frac{1}{2} \cdot c$

$$\int_{VC(v,s)} e(x)\,dV = \text{(I)}\; C = c \cdot \int_0^D \int_0^{2\pi} \int_0^R e(r, R, d, D)\, r\, dr\, d\varphi\, dd$$

$$\Leftrightarrow \quad C = c \cdot \int_0^D \int_0^{2\pi} \int_0^R e\left(r, \frac{s \cdot \alpha \cdot d}{D}, d, D\right) r\, dr\, d\varphi\, dd$$

$$\Leftrightarrow \quad C = c \cdot \int_0^D \int_0^{2\pi} \int_0^R e_n(d, D) \cdot e_o\left(r, \frac{s \cdot \alpha \cdot d}{D}\right) \cdot r\, dr\, d\varphi\, dd$$

(e_n: along ray / normal direction; e_o: orthogonal to ray)



property of $e_n(d,D)$:

I $\int e_n(d,D)\,dd = 1$

property of $e_o(r,R)$:

II $2\pi \int_0^R e_o(r,R) \cdot r\,dr = 1$

$$\Leftrightarrow \quad C = c \cdot \int_0^D e_n(d,D) \cdot 2\pi \int_0^R e_o\left(r, \frac{s \cdot \alpha \cdot d}{D}\right) r\, dr\, dd$$

I ⇔ $C = c \cdot \int_0^D e_n(d,D) \cdot 1\, dd$

I ⇔ $C = c \cdot 1$

⇔ $C = c$ ✓ □