

double line element of *Richter*
(2006) for the lighting technic with
relative luminance $L_r = F(L, M, S)$

luminance signal function $F(L_r)$

$$F(L_r) = i Q(H) \quad H = 10^{n_x r}$$

$$Q[\log \{1 + 1/(1 + \sqrt{2}H)\}] / \log \sqrt{2} - 1$$

Taylor-derivations:

$$\begin{aligned} \Delta F(L_r) &= \frac{dF}{dL_r} \Delta L_r = i \frac{dQ}{dH} \Delta H \\ &= -i \sqrt{2} \Delta H / [\log \sqrt{2} (1 + \sqrt{2}H)(2 + \sqrt{2}H)] \end{aligned}$$