Achromatisches Sehen mit relativer Leuchtdichte
Mathematikgleichungen mit Hyperbelfunktionen

$$F_{ab}(x_r,a)=b\tanh(x_r/a)=b\frac{e^{x_r/a}-e^{-x_r/a}}{e^{x_r/a}+e^{-x_r/a}} \quad x_r=\log(L_r),\ L_r=L/L_u,\ x_r<=0 \quad [1]$$

$$\frac{dF_{ab}(x_r,a)}{dx_r}=\frac{4b}{a[e^{x_r/a}+e^{-x_r/a}]^2} \quad x_r=\ln L_r/\ln(10),\ dx_r/dL_r=1/(\ln(10)L_r),\ m=1/(\ln(10)a) \quad [5]$$

$$\frac{dF_{ab}(x_r,a)}{dx_r}\frac{dx_r}{dL_r}=\frac{4bm}{[e^{x_r/a}+e^{-x_r/a}]^2L_r} \quad L_r/dL_r=L/dL,\ dF_{ab}(x_r,a)=1 \quad [6]$$

$$\frac{L}{dL}=\frac{4bm}{[e^{x_r/a}+e^{-x_r/a}]^2} \qquad dL=\frac{[e^{x_r/a}+e^{-x_r/a}]^2L}{4bm} \quad [7]$$

igi00−1n hey00−1n

Achromatisches Sehen mit relativer Leuchtdichte
Mathematikgleichungen mit Hyperbelfunktionen

$$F_{cb}(x_r,c)=b\tanh(x_r/c)=b\frac{e^{x_r/c}-e^{-x_r/c}}{e^{x_r/c}+e^{-x_r/c}} \quad x_r=\log(L_r),\ L_r=L/L_u,\ x_r>=0 \quad [1]$$

$$\frac{dF_{cb}(x_r,c)}{dx_r}=\frac{4b}{c[e^{x_r/c}+e^{-x_r/c}]^2} \quad x_r=\ln L_r/\ln(10),\ dx_r/dL_r=1/(\ln(10)L_r),\ n=1/(\ln(10)c) \quad [5]$$

$$\frac{dF_{cb}(x_r,c)}{dx_r}\frac{dx_r}{dL_r}=\frac{4bm}{[e^{x_r/c}+e^{-x_r/c}]^2L_r} \quad L_r/dL_r=L/dL,\ dF_{cb}(x_r,c)=1 \quad [6]$$

$$\frac{L}{dL}=\frac{4bm}{[e^{x_r/c}+e^{-x_r/c}]^2} \qquad dL=\frac{[e^{x_r/c}+e^{-x_r/c}]^2L}{4bm} \quad [7]$$

igi00−2n hey00−2n

Achromatische Sehen mit relativer Leuchtdichte
Mathematische Hyperbel- und Potenzfunktionen

$$F_{ab}(x_r,a)=b\tanh(x_r/a)=b\frac{e^{x_r/a}-e^{-x_r/a}}{e^{x_r/a}+e^{-x_r/a}} \quad x_r=\log(L_r),\ L_r=L/L_u,\ x_r<=0 \quad [1]$$

$$\frac{dF_{ab}(x_r,a)}{dx_r}=\frac{4b}{a[e^{x_r/a}+e^{-x_r/a}]^2} \quad x_r=\ln L_r/\ln(10),\ dx_r/dL_r=1/(\ln(10)L_r),\ m=1/(\ln(10)a) \quad [5]$$

$$\frac{L}{dL}=\frac{4bm}{[e^{x_r/a}+e^{-x_r/a}]^2} \qquad dL=\frac{[e^{x_r/a}+e^{-x_r/a}]^2L}{4bm} \quad [7]$$

$$\frac{L}{dL}=\frac{4bm}{[L_r^m+L_r^{-m}]^2} \qquad dL=\frac{[L_r^m+L_r^{-m}]^2L}{4bm} \quad [8]$$

igi01−1n hey01−1n

Achromatische Sehen mit relativer Leuchtdichte
Mathematische Hyperbel- und Potenzfunktionen

$$F_{cb}(x_r,c)=b\tanh(x_r/c)=b\frac{e^{x_r/c}-e^{-x_r/c}}{e^{x_r/c}+e^{-x_r/c}} \quad x_r=\log(L_r),\ L_r=L/L_u,\ x_r>=0 \quad [1]$$

$$\frac{dF_{cb}(x_r,c)}{dx_r}=\frac{4b}{c[e^{x_r/c}+e^{-x_r/c}]^2} \quad x_r=\ln L_r/\ln(10),\ dx_r/dL_r=1/(\ln(10)L_r),\ n=1/(\ln(10)c) \quad [5]$$

$$\frac{L}{dL}=\frac{4bn}{[e^{x_r/c}+e^{-x_r/c}]^2} \qquad dL=\frac{[e^{x_r/c}+e^{-x_r/c}]^2L}{4bn} \quad [7]$$

$$\frac{L}{dL}=\frac{4bn}{[L_r^n+L_r^{-n}]^2} \qquad dL=\frac{[L_r^n+L_r^{-n}]^2L}{4bn} \quad [8]$$

igi01−2n hey01−2n

Achromatisches Sehen mit relativer Leuchtdichte
Mathematikgleichungen mit Hyperbelfunktionen

$$F_{ab}(x_r,a)=b\tanh(x_r/a)=b\frac{e^{x_r/a}-e^{-x_r/a}}{e^{x_r/a}+e^{-x_r/a}} \quad x_r=\log(L_r),\ L_r=L/L_u,\ x_r<=0 \quad [1]$$

$$\frac{dF_{ab}(x_r,a)}{dx_r}=\frac{4b}{a[e^{x_r/a}+e^{-x_r/a}]^2} \quad x_r=\ln L_r/\ln(10),\ dx_r/dL_r=1/(\ln(10)L_r),\ m=1/(\ln(10)a) \quad [5]$$

$$\frac{L}{dL}=\frac{4bm}{[e^{x_r/a}+e^{-x_r/a}]^2} \qquad dL=\frac{a[e^{x_r/a}+e^{-x_r/a}]^2L}{4bm} \quad [7]$$

$$\frac{L/dL}{(L/dL)_u}=\frac{4}{[e^{x_r/a}+e^{-x_r/a}]^2};\ \frac{dL}{dL_u}=\frac{[e^{x_r/a}+e^{-x_r/a}]^2L}{4L_u} \quad [8]$$

igi00−3n hey00−3n

Achromatisches Sehen mit relativer Leuchtdichte
Mathematikgleichungen mit Hyperbelfunktionen

$$F_{cb}(x_r,c)=b\tanh(x_r/c)=b\frac{e^{x_r/c}-e^{-x_r/c}}{e^{x_r/c}+e^{-x_r/c}} \quad x_r=\log(L_r),\ L_r=L/L_u,\ x_r>=0 \quad [1]$$

$$\frac{dF_{cb}(x_r,c)}{dx_r}=\frac{4b}{c[e^{x_r/c}+e^{-x_r/c}]^2} \quad x_r=\ln L_r/\ln(10),\ dx_r/dL_r=1/(\ln(10)L_r),\ n=1/(\ln(10)c) \quad [5]$$

$$\frac{L}{dL}=\frac{4bn}{[e^{x_r/c}+e^{-x_r/c}]^2} \qquad dL=\frac{c[e^{x_r/c}+e^{-x_r/c}]^2L}{4bn} \quad [7]$$

$$\frac{L/dL}{(L/dL)_u}=\frac{4}{[e^{x_r/c}+e^{-x_r/c}]^2};\ \frac{dL}{dL_u}=\frac{[e^{x_r/c}+e^{-x_r/c}]^2L}{4L_u} \quad [8]$$

igi00−4n hey00−4n

Achromatische Sehen mit relativer Leuchtdichte
Mathematische Hyperbel- und Potenzfunktionen

$$F_{ab}(x_r,a)=b\tanh(x_r/a)=b\frac{e^{x_r/a}-e^{-x_r/a}}{e^{x_r/a}+e^{-x_r/a}} \quad x_r=\log(L_r),\ L_r=L/L_u,\ x_r<=0 \quad [1]$$

$$\frac{dF_{ab}(x_r,a)}{dx_r}=\frac{4b}{a[e^{x_r/a}+e^{-x_r/a}]^2} \quad x_r=\ln L_r/\ln(10),\ dx_r/dL_r=1/(\ln(10)L_r),\ m=1/(\ln(10)a) \quad [5]$$

$$\frac{L}{dL}=\frac{4bm}{[e^{x_r/a}+e^{-x_r/a}]^2} \qquad dL=\frac{[e^{x_r/a}+e^{-x_r/a}]^2L}{4bm} \quad [7]$$

$$\frac{L}{dL}=\frac{4bm}{[L_r^{2m}+2+L_r^{-2m}]} \qquad dL=\frac{[L_r^{2m}+2+L_r^{-2m}]L}{4bm} \quad [8]$$

igi01−3n hey01−3n

Achromatische Sehen mit relativer Leuchtdichte
Mathematische Hyperbel- und Potenzfunktionen

$$F_{cb}(x_r,c)=b\tanh(x_r/c)=b\frac{e^{x_r/c}-e^{-x_r/c}}{e^{x_r/c}+e^{-x_r/c}} \quad x_r=\log(L_r),\ L_r=L/L_u,\ x_r>=0 \quad [1]$$

$$\frac{dF_{cb}(x_r,c)}{dx_r}=\frac{4b}{c[e^{x_r/c}+e^{-x_r/c}]^2} \quad x_r=\ln L_r/\ln(10),\ dx_r/dL_r=1/(\ln(10)L_r),\ n=1/(\ln(10)c) \quad [5]$$

$$\frac{L}{dL}=\frac{4bn}{[e^{x_r/c}+e^{-x_r/c}]^2} \qquad dL=\frac{[e^{x_r/c}+e^{-x_r/c}]^2L}{4bn} \quad [7]$$

$$\frac{L}{dL}=\frac{4bn}{[L_r^{2n}+2+L_r^{-2n}]} \qquad dL=\frac{[L_r^{2n}+2+L_r^{-2n}]L}{4bn} \quad [8]$$

igi01−4n hey01−4n

Achromatische Sehen mit relativer Leuchtdichte
Mathematikgleichungen mit Hyperbelfunktionen

$$F_{ab}(x_r,a)=b\tanh(x_r/a)=b\frac{e^{x_r/a}-e^{-x_r/a}}{e^{x_r/a}+e^{-x_r/a}} \quad x_r=\log(L_r),\ L_r=L/L_u,\ x_r<=0 \quad [1]$$

$$\frac{dF_{ab}(x_r,a)}{dx_r}=\frac{4b}{a[e^{x_r/a}+e^{-x_r/a}]^2} \quad x_r=\ln L_r/\ln(10),\ dx_r/dL_r=1/(\ln(10)L_r),\ m=1/(\ln(10)a) \quad [5]$$

$$\frac{L/dL}{(L/dL)_u}=\frac{4}{[e^{x_r/a}+e^{-x_r/a}]^2};\ \frac{dL}{dL_u}=\frac{[e^{x_r/a}+e^{-x_r/a}]^2L}{4L_u} \quad [8]$$

$$\frac{L/dL}{(L/dL)_u}=1\ \text{für}\ \begin{cases}L=L_u\\x_r=0\end{cases} \qquad \frac{dL}{dL_u}=1\ \text{für}\ \begin{cases}L=L_u\\x_r=0\end{cases} \quad [9]$$

igi00−5n hey00−5n

Achromatische Sehen mit relativer Leuchtdichte
Mathematikgleichungen mit Hyperbelfunktionen

$$F_{cb}(x_r,c)=b\tanh(x_r/c)=b\frac{e^{x_r/c}-e^{-x_r/c}}{e^{x_r/c}+e^{-x_r/c}} \quad x_r=\log(L_r),\ L_r=L/L_u,\ x_r>=0 \quad [1]$$

$$\frac{dF_{cb}(x_r,c)}{dx_r}=\frac{4b}{c[e^{x_r/c}+e^{-x_r/c}]^2} \quad x_r=\ln L_r/\ln(10),\ dx_r/dL_r=1/(\ln(10)L_r),\ n=1/(\ln(10)c) \quad [5]$$

$$\frac{L/dL}{(L/dL)_u}=\frac{4}{[e^{x_r/c}+e^{-x_r/c}]^2};\ \frac{dL}{dL_u}=\frac{[e^{x_r/c}+e^{-x_r/c}]^2L}{4L_u} \quad [8]$$

$$\frac{L/dL}{(L/dL)_u}=1\ \text{für}\ \begin{cases}L=L_u\\x_r=0\end{cases} \qquad \frac{dL}{dL_u}=1\ \text{für}\ \begin{cases}L=L_u\\x_r=0\end{cases} \quad [9]$$

igi00−6n hey00−6n

Achromatische Sehen mit relativer Leuchtdichte
Mathematische Hyperbel- und Potenzfunktionen

$$F_{ab}(x_r,a)=b\tanh(x_r/a)=b\frac{e^{x_r/a}-e^{-x_r/a}}{e^{x_r/a}+e^{-x_r/a}} \quad x_r=\log(L_r),\ L_r=L/L_u,\ x_r<=0 \quad [1]$$

$$\frac{dF_{ab}(x_r,a)}{dx_r}=\frac{4b}{a[e^{x_r/a}+e^{-x_r/a}]^2} \quad x_r=\ln L_r/\ln(10),\ dx_r/dL_r=1/(\ln(10)L_r),\ m=1/(\ln(10)a) \quad [5]$$

$$\frac{L/dL}{(L/dL)_u}=\frac{4}{[e^{x_r/a}+e^{-x_r/a}]^2};\ \frac{dL}{dL_u}=\frac{[e^{x_r/a}+e^{-x_r/a}]^2L}{4L_u} \quad [8]$$

$$\frac{L/dL}{(L/dL)_u}=\frac{4}{[L_r^m+L_r^{-m}]^2};\ \frac{dL}{dL_u}=\frac{[L_r^m+L_r^{-m}]^2L}{4L_u} \quad [9]$$

igi01−5n hey01−5n

Achromatische Sehen mit relativer Leuchtdichte
Mathematische Hyperbel- und Potenzfunktionen

$$F_{cb}(x_r,c)=b\tanh(x_r/c)=b\frac{e^{x_r/c}-e^{-x_r/c}}{e^{x_r/c}+e^{-x_r/c}} \quad x_r=\log(L_r),\ L_r=L/L_u,\ x_r>=0 \quad [1]$$

$$\frac{dF_{cb}(x_r,c)}{dx_r}=\frac{4b}{c[e^{x_r/c}+e^{-x_r/c}]^2} \quad x_r=\ln L_r/\ln(10),\ dx_r/dL_r=1/(\ln(10)L_r),\ n=1/(\ln(10)c) \quad [5]$$

$$\frac{L/dL}{(L/dL)_u}=\frac{4}{[e^{x_r/c}+e^{-x_r/c}]^2};\ \frac{dL}{dL_u}=\frac{[e^{x_r/c}+e^{-x_r/c}]^2L}{4L_u} \quad [8]$$

$$\frac{L/dL}{(L/dL)_u}=\frac{4}{[L_r^n+L_r^{-n}]^2};\ \frac{dL}{dL_u}=\frac{[L_r^n+L_r^{-n}]^2L}{4L_u} \quad [9]$$

igi01−6n hey01−6n

Achromatische Sehen mit relativer Leuchtdichte
Mathematikgleichungen mit Hyperbelfunktionen

$$F_{ab}(x_r,a)=b\tanh(x_r/a)=b\frac{e^{x_r/a}-e^{-x_r/a}}{e^{x_r/a}+e^{-x_r/a}} \quad x_r=\log(L_r),\ L_r=L/L_u,\ x_r<=0 \quad [1]$$

$$\frac{dF_{ab}(x_r,a)}{dx_r}=\frac{4b}{a[e^{x_r/a}+e^{-x_r/a}]^2} \quad x_r=\ln L_r/\ln(10),\ dx_r/dL_r=1/(\ln(10)L_r),\ m=1/(\ln(10)a) \quad [5]$$

$$\frac{L/dL}{(L/dL)_u}=\frac{4}{[e^{x_r/a}+e^{-x_r/a}]^2};\ \frac{dL}{dL_u}=\frac{[e^{x_r/a}+e^{-x_r/a}]^2L}{4L_u} \quad [8]$$

$$\frac{L/dL}{(L/dL)_u}=1\ \text{für}\ \begin{cases}L_r=1\\x_r=0\end{cases} \qquad \frac{dL}{dL_u}=1\ \text{für}\ \begin{cases}L_r=1\\x_r=0\end{cases} \quad [9]$$

igi00−7n hey00−7n

Achromatische Sehen mit relativer Leuchtdichte
Mathematikgleichungen mit Hyperbelfunktionen

$$F_{cb}(x_r,c)=b\tanh(x_r/c)=b\frac{e^{x_r/c}-e^{-x_r/c}}{e^{x_r/c}+e^{-x_r/c}} \quad x_r=\log(L_r),\ L_r=L/L_u,\ x_r>=0 \quad [1]$$

$$\frac{dF_{cb}(x_r,c)}{dx_r}=\frac{4b}{c[e^{x_r/c}+e^{-x_r/c}]^2} \quad x_r=\ln L_r/\ln(10),\ dx_r/dL_r=1/(\ln(10)L_r),\ n=1/(\ln(10)c) \quad [5]$$

$$\frac{L/dL}{(L/dL)_u}=\frac{4}{[e^{x_r/c}+e^{-x_r/c}]^2};\ \frac{dL}{dL_u}=\frac{[e^{x_r/c}+e^{-x_r/c}]^2L}{4L_u} \quad [8]$$

$$\frac{L/dL}{(L/dL)_u}=1\ \text{für}\ \begin{cases}L_r=1\\x_r=0\end{cases} \qquad \frac{dL}{dL_u}=1\ \text{für}\ \begin{cases}L_r=1\\x_r=0\end{cases} \quad [9]$$

igi00−8n hey00−8n

Achromatische Sehen mit relativer Leuchtdichte
Mathematische Hyperbel- und Potenzfunktionen

$$F_{ab}(x_r,a)=b\tanh(x_r/a)=b\frac{e^{x_r/a}-e^{-x_r/a}}{e^{x_r/a}+e^{-x_r/a}} \quad x_r=\log(L_r),\ L_r=L/L_u,\ x_r<=0 \quad [1]$$

$$\frac{dF_{ab}(x_r,a)}{dx_r}=\frac{4b}{a[e^{x_r/a}+e^{-x_r/a}]^2} \quad x_r=\ln L_r/\ln(10),\ dx_r/dL_r=1/(\ln(10)L_r),\ m=1/(\ln(10)a) \quad [5]$$

$$\frac{L/dL}{(L/dL)_u}=\frac{4}{[e^{x_r/a}+e^{-x_r/a}]^2};\ \frac{dL}{dL_u}=\frac{[e^{x_r/a}+e^{-x_r/a}]^2L}{4L_u} \quad [8]$$

$$\frac{L/dL}{(L/dL)_u}=\frac{4}{L_r^{2m}+2+L_r^{-2m}};\ \frac{dL}{dL_u}=\frac{(L_r^{2m}+2+L_r^{-2m})L}{4L_u} \quad [9]$$

igi01−7n hey01−7n

Achromatische Sehen mit relativer Leuchtdichte
Mathematische Hyperbel- und Potenzfunktionen

$$F_{cb}(x_r,c)=b\tanh(x_r/c)=b\frac{e^{x_r/c}-e^{-x_r/c}}{e^{x_r/c}+e^{-x_r/c}} \quad x_r=\log(L_r),\ L_r=L/L_u,\ x_r>=0 \quad [1]$$

$$\frac{dF_{cb}(x_r,c)}{dx_r}=\frac{4b}{c[e^{x_r/c}+e^{-x_r/c}]^2} \quad x_r=\ln L_r/\ln(10),\ dx_r/dL_r=1/(\ln(10)L_r),\ n=1/(\ln(10)c) \quad [5]$$

$$\frac{L/dL}{(L/dL)_u}=\frac{4}{[e^{x_r/c}+e^{-x_r/c}]^2};\ \frac{dL}{dL_u}=\frac{[e^{x_r/c}+e^{-x_r/c}]^2L}{4L_u} \quad [8]$$

$$\frac{L/dL}{(L/dL)_u}=\frac{4}{L_r^{2n}+2+L_r^{-2n}};\ \frac{dL}{dL_u}=\frac{(L_r^{2n}+2+L_r^{-2n})L}{4L_u} \quad [9]$$

igi01−8n hey01−8n

Siehe ähnliche Dateien der ganzen Serie: http://farbe.li.tu-berlin.de/igis.htm
Technische Information: http://farbe.li.tu-berlin.de oder http://color.li.tu-berlin.de

TUB-Registrierung: 20250301-igi0/igi0l0na.txt /.ps
Anwendung für Beurteilung und Messung von Display- oder Druck-Ausgabe
TUB-Material: Code=rha4ta