

Linear relation CIELAB (L^*, a^*, b^*) and adapted (a) CIELAB ($C^*_{ab,a}, L^*$)
 System: ORS18

$$l^*_{lab*} = (L^* - L^*_N) / (L^*_W - L^*_N)$$

$$a^*_{ab} = a^* - a^*_N - l^*_{lab*} [a^*_W - a^*_N]$$

$$b^*_{ab} = b^* - b^*_N - l^*_{lab*} [b^*_W - b^*_N]$$

$$C^*_{ab,a} = [a^*_{ab}^2 + b^*_{ab}^2]^{1/2}$$

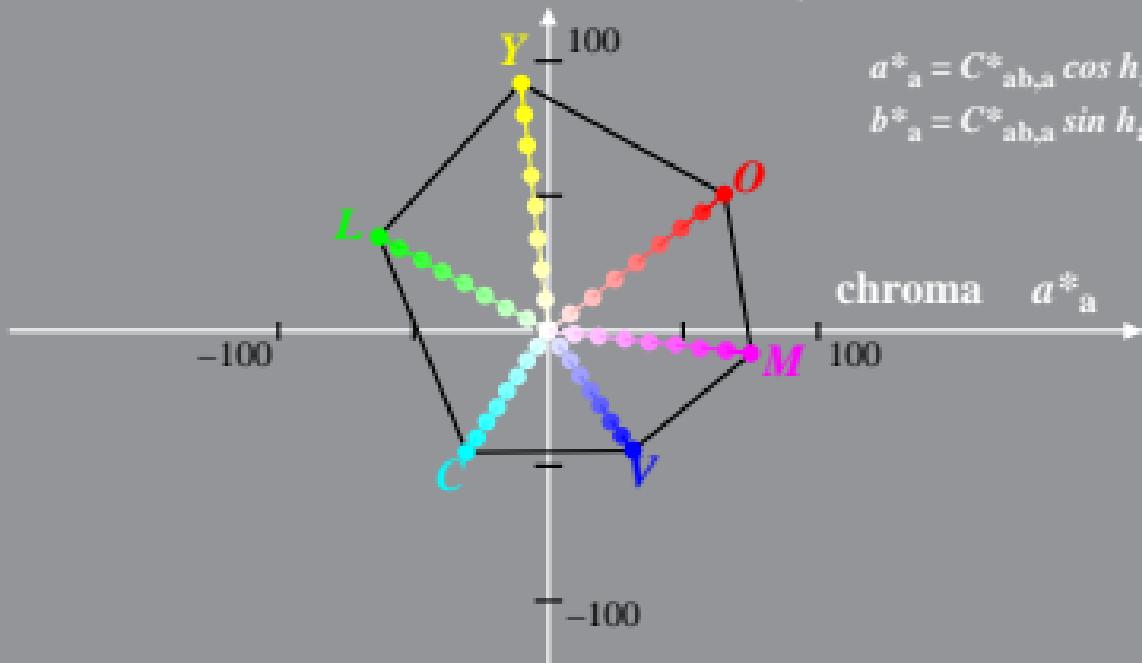
CIELAB hue angles:

$$h_{ab,d} = [37, 96, 150, 236, 305, 353]$$

$$b^*_{ab}$$

$$a^*_{ab} = C^*_{ab,a} \cos h_{ab}$$

$$b^*_{ab} = C^*_{ab,a} \sin h_{ab}$$



Linear relation CIELAB (L^*, a^*, b^*) and adapted (a) CIELAB ($C^*_{ab,a}, L^*$)

System: TLS00

$$L^*_{lab*} = (L^* - L^*_N) / (L^*_W - L^*_N)$$

$$a^*_{ab} = a^* - a^*_N - L^*_{lab*} [a^*_W - a^*_N]$$

$$b^*_{ab} = b^* - b^*_N - L^*_{lab*} [b^*_W - b^*_N]$$

$$C^*_{ab,a} = [a^*_{ab}^2 + b^*_{ab}^2]^{1/2}$$

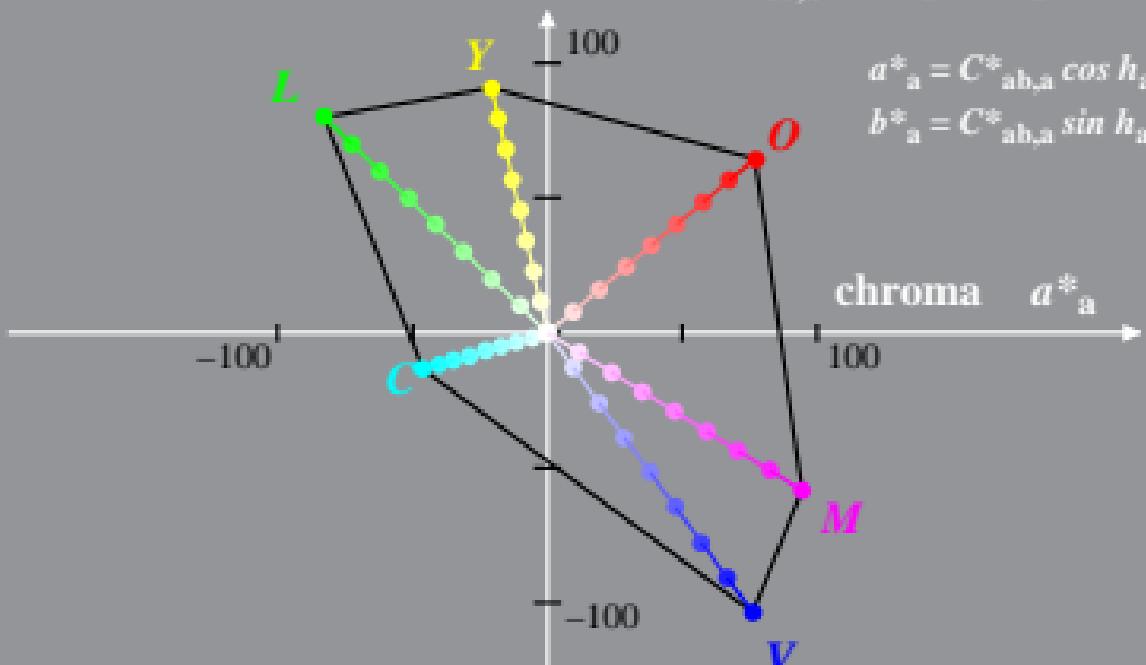
CIELAB hue angles:

$$h_{ab,d} = [40, 102, 136, 196, 306, 328]$$

$$b^*_{ab}$$

$$a^*_{ab} = C^*_{ab,a} \cos h_{ab}$$

$$b^*_{ab} = C^*_{ab,a} \sin h_{ab}$$



Linear relation CIELAB (L^*, a^*, b^*) and adapted (a) CIELAB ($C_{ab,a}^*, L^*$)
 System: FRS06

CIELAB hue angles:

$$h_{\text{shd}} = [36, 91, 143, 231, 312, 337]$$

$$I^*_{\text{lab}} = (L^* - L^*_N) / (L^*_W - L^*_N)$$

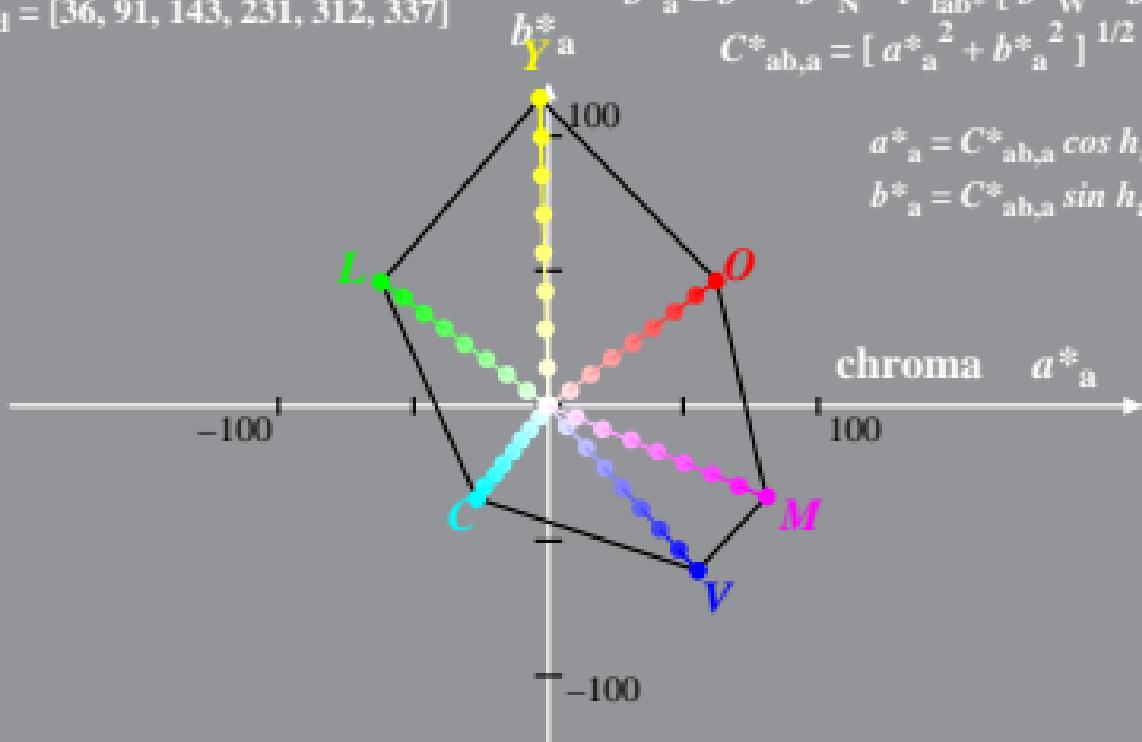
$$a^*_{-\bar{a}} = a^* - a^*_N - l^*|_{\mathbb{R}^{2n}} [a^*_W - a^*_N]$$

$$h^*_{-s} = h^* - h^*_{+s} = l^*_{-s+s} [h^*_{+w} - h^*_{+s}]$$

$$C^*_{ab,2} = [a^*_{\beta_2}{}^2 + b^*_{\beta_2}{}^2]^{1/2}$$

$$a^*_{\alpha} = C^*_{-\alpha b, \alpha} \cos h_{\alpha b}$$

$$b_{\perp}^* = C_{\perp}^* \sin h_{\perp}$$



Linear relation CIELAB (L^*, a^*, b^*) and adapted (a) CIELAB ($C^*_{ab,a}, L^*$)

System: TSL18

$$L^*_{lab*} = (L^* - L^*_{N}) / (L^*_{W} - L^*_{N})$$

$$a^*_{ab} = a^* - a^*_{N} - L^*_{lab*} [a^*_{W} - a^*_{N}]$$

$$b^*_{ab} = b^* - b^*_{N} - L^*_{lab*} [b^*_{W} - b^*_{N}]$$

$$C^*_{ab,a} = [a^*_{ab}^2 + b^*_{ab}^2]^{1/2}$$

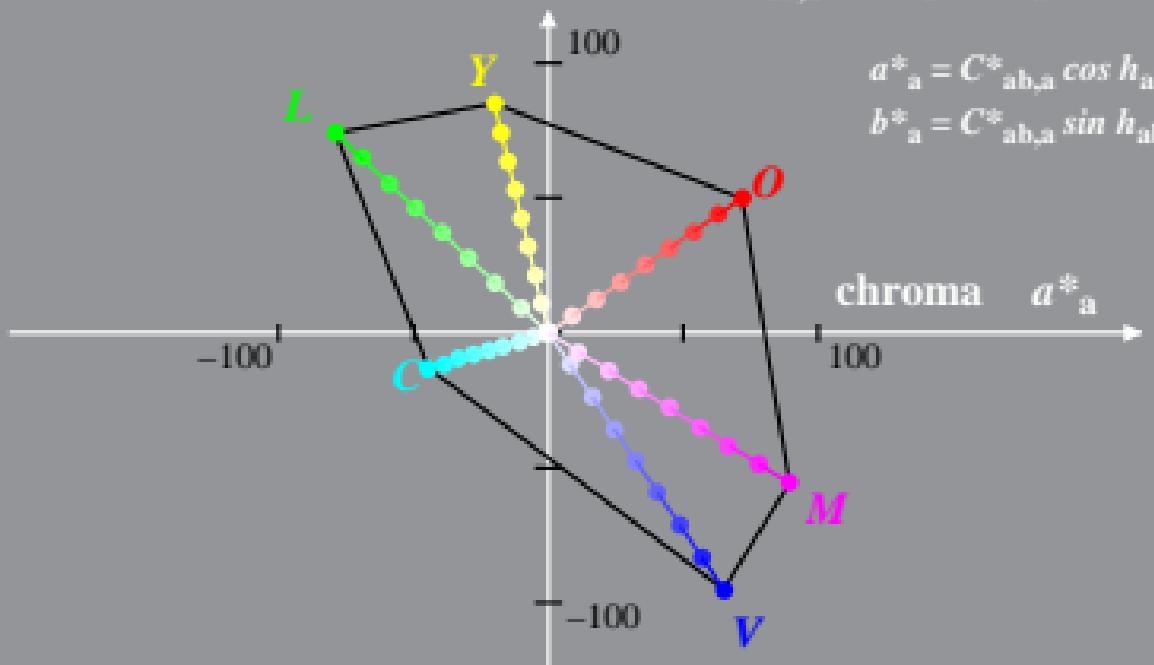
CIELAB hue angles:

$$h_{ab,d} = [34, 103, 136, 196, 304, 328]$$

$$b^*_{ab}$$

$$a^*_{ab} = C^*_{ab,a} \cos h_{ab}$$

$$b^*_{ab} = C^*_{ab,a} \sin h_{ab}$$



Linear relation CIELAB (L^*, a^*, b^*) and adapted (a) CIELAB ($C^*_{ab,a}, L^*$)
 System: NLS00

CIELAB hue angles:

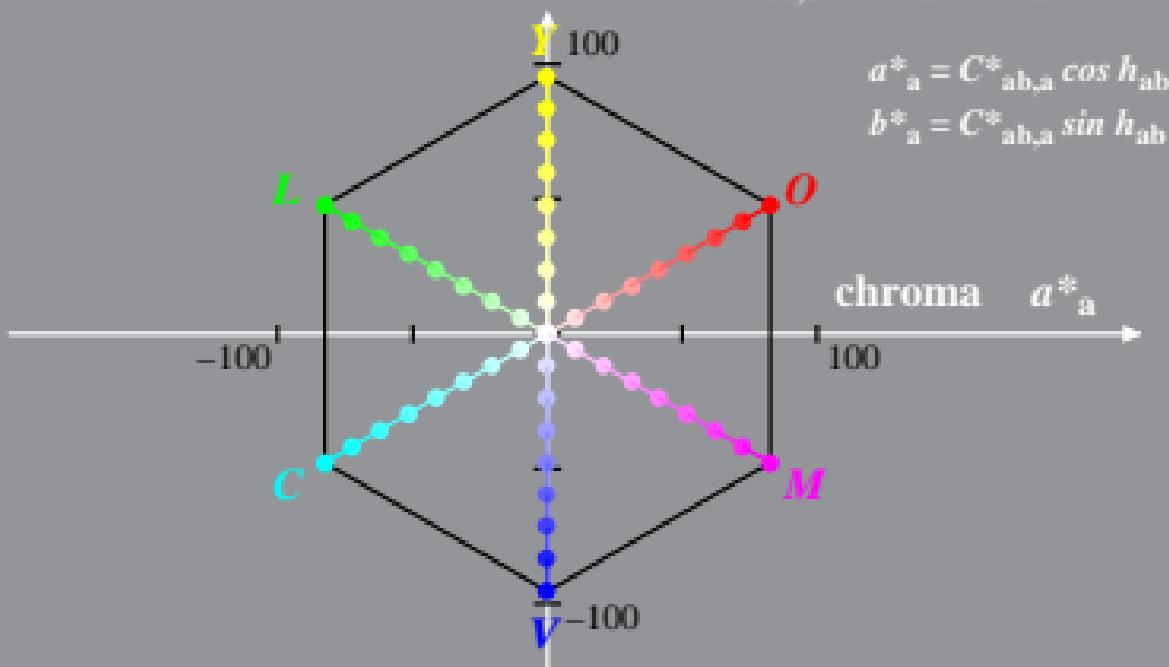
$$h_{ab,d} = [29, 89, 150, 209, 270, 330]$$

$$l^*_{lab*} = (L^* - L^*_N) / (L^*_W - L^*_N)$$

$$a^*_{ab} = a^* - a^*_N - l^*_{lab*} [a^*_W - a^*_N]$$

$$b^*_{ab} = b^* - b^*_N - l^*_{lab*} [b^*_W - b^*_N]$$

$$C^*_{ab,a} = [a^*_{ab}^2 + b^*_{ab}^2]^{1/2}$$



$$a^*_{ab} = C^*_{ab,a} \cos h_{ab}$$

$$b^*_{ab} = C^*_{ab,a} \sin h_{ab}$$

Linear relation CIELAB (L^*, a^*, b^*) and adapted (a) CIELAB ($C^*_{ab,a}, L^*$)
 System: NLS18

$$l^*_{lab*} = (L^* - L^*_N) / (L^*_W - L^*_N)$$

$$a^*_{ab} = a^* - a^*_N - l^*_{lab*} [a^*_W - a^*_N]$$

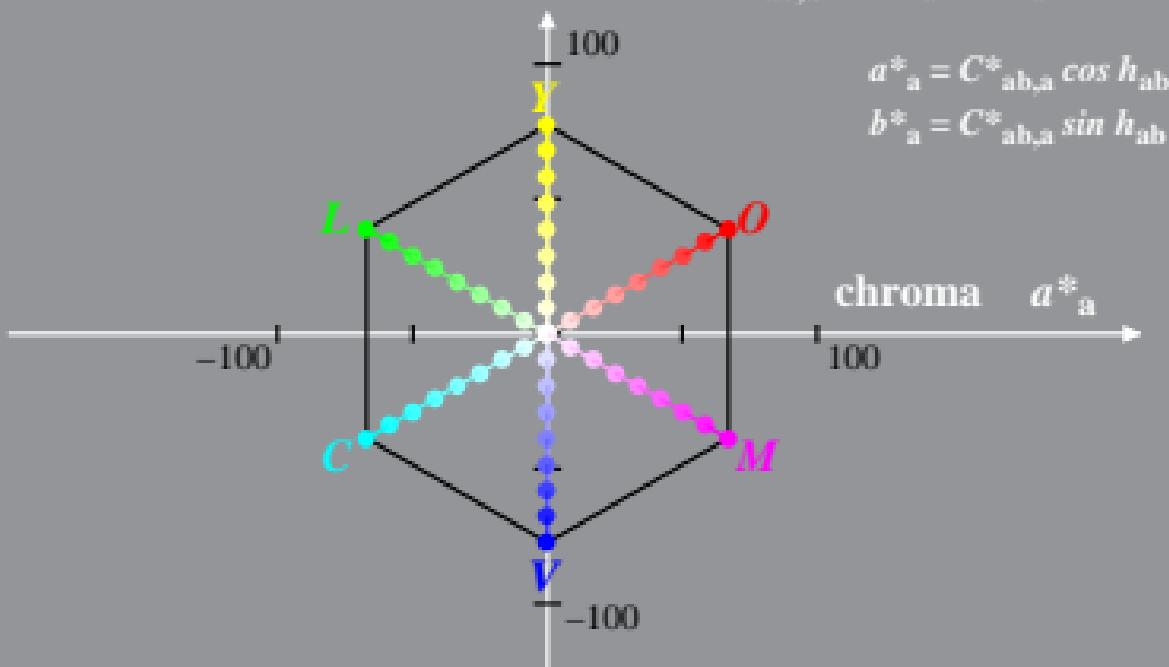
$$b^*_{ab} = b^* - b^*_N - l^*_{lab*} [b^*_W - b^*_N]$$

$$C^*_{ab,a} = [a^*_{ab}^2 + b^*_{ab}^2]^{1/2}$$

CIELAB hue angles:

$$h_{ab,d} = [30, 89, 149, 210, 270, 329]$$

$$b^*_{ab}$$



Linear relation CIELAB (L^*, a^*, b^*) and adapted (a) CIELAB ($C^*_{ab,a}, L^*$)

System: NRS11

$$l^*_{lab*} = (L^* - L^*_N) / (L^*_W - L^*_N)$$

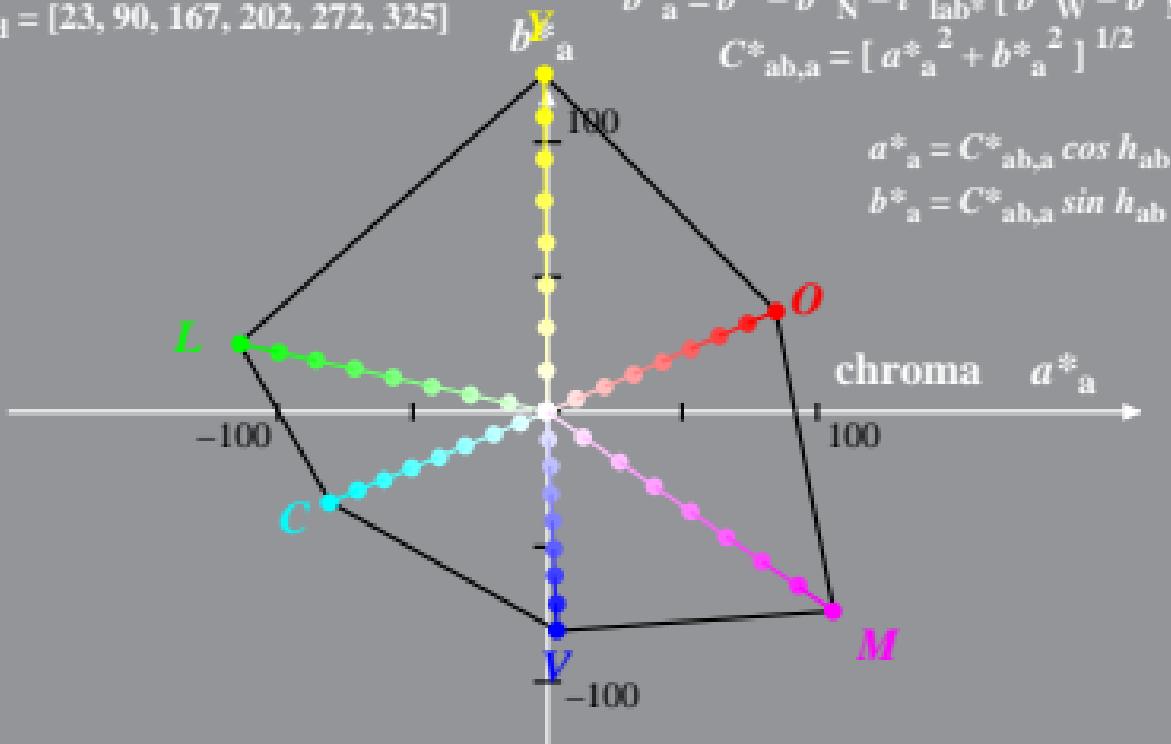
$$a^*_{ab} = a^* - a^*_N - l^*_{lab*} [a^*_W - a^*_N]$$

$$b^*_{ab} = b^* - b^*_N - l^*_{lab*} [b^*_W - b^*_N]$$

$$C^*_{ab,a} = [a^*_{ab}^2 + b^*_{ab}^2]^{1/2}$$

CIELAB hue angles:

$$h_{ab,d} = [23, 90, 167, 202, 272, 325]$$



Linear relation CIELAB (L^*, a^*, b^*) and adapted (a) CIELAB ($C_{ab,a}^*, L^*$)
 System: TLS70

$$I^*_{\text{lab}*} = (L^* - L^*_N) / (L^*_W - L^*_N)$$

$$a^*_{-j} = a^* - a^*_N - l^*|_{\partial b^*} [a^*_{W'} - a^*_N]$$

$$b^*_{-\infty} = b^* - b^*_{\infty} = l^*_{-1-\infty} + [b^*_{\infty} - b^*_{-\infty}]$$

$$b_{\alpha}^* = C_{\alpha b, \beta}^{*} [a_{\beta}^{*}]^2 + [b_{\beta}^{*}]^2]^{1/2}$$

$$a^*_{\perp} = C^*_{ab,a} \cos h_{ab}$$

$$b_{\perp}^* = C_{ab,a}^* \sin h_{ab}$$

