

Colour thresholds and potential functions with four constants A_i

nonlinear color terms	name and relationship with tristimulus values XYZ , and the chromatic values (A, B)	notes
Threshold space <i>ABY-JND6</i> equation (6)	$T^* = A_1 \cdot [(A_3 + A_4 \cdot Y)^g - 1] \quad (g = A_2)$ $dT^* / dY = g \cdot A_1 \cdot A_4 \cdot (A_3 + A_4 \cdot Y)^{g-1}$ $dY = 1 / [g \cdot A_1 \cdot A_4 \cdot (A_3 + A_4 \cdot Y)^{g-1}]$ $Y / dY = Y / [g \cdot A_1 \cdot A_4 \cdot (A_3 + A_4 \cdot Y)^{g-1}]$ necessary for least square fit of data: $dT^* / dA_1 = (A_3 + A_4 \cdot Y)^g - 1 \quad (g = A_2)$ $dT^* / dg = A_1 \cdot (A_3 + A_4 \cdot Y)^g \cdot \ln(A_3 + A_4 \cdot Y)$ $dT^* / dA_3 = g \cdot A_1 \cdot (A_3 + A_4 \cdot Y)^{g-1}$ $dT^* / dA_4 = g \cdot A_1 \cdot (A_3 + A_4 \cdot Y)^{g-1} \cdot Y$	$L/dL = (x/y - x_n/y_n) \cdot Y$ Normalization similar to CIELAB: $X_{01} = X/X_n; Y_{01} = Y/Y_n; Z_{01} = Z/Z_n$ Relation for complementary (c) colours: $X_{01c} = 1 - X_{01}; Y_{01c} = 1 - Y_{01}; Z_{01c} = 1 - Z_{01}$ Chromatic values: $A_{01} = (a_{01} - a_{01n}) \cdot Y_{01} = (x_{01} / y_{01} - 1) \cdot Y_{01} = (X_{01} / Y_{01} - 1) \cdot Y_{01} = X_{01} - Y_{01} = -A_{01c}$
Properties complementary colours	$A_{01c} = -A_{01}; B_{01c} = -B_{01}; C_{ab,01c} = C_{ab,01};$ $\Delta A_{01c} = \Delta A_{01}; \Delta B_{01c} = \Delta B_{01}; \Delta C_{ab,01c} = \Delta C_{ab,01}; \Delta Y/Y = \text{const}$	