Equations: colorimetric data transfer from *rgb* to *nce**_e data and *LCH**_e data

Given: *rgb*_e elementary colour data of any colour *rgb*_e = *lab*_*rgb*_e and of 48 step colour circle *j*=0 to 47
*rgb*_Me,j and CIELAB data $L^*_{Me,j}$, $C^*_{ab,Me,j}$, $h_{ab,Me,j} = LCH^*_{Me,j}$

Aim: calculate *nce**_e with (0<=n^*_e, c^*_e, e^*_e<=1) **(similar to NCS data)** and *LCH**_e data of elementary colour

Data of a give elementary (e) colour

relative chroma of the elementary colour	$c^*_e = max\,[\,rgb_e\,] - min\,[\,rgb_e\,]$	(1)
relative blackness of the elementary colour	$n^*_e = 1 - max\,[\,rgb_e\,]$	(2)
relative triangle lightness of the elementary colour	$t^*_e = 1 - n^*_e - 0,5\,c^*_e$	(3)
relative red-green chroma in 4x90 degree system s	$a^*_{rs,e} = r_e\,cos(0) + g_e\,cos(180)$	(4)
relative yellow-blue chroma in 4x90 degree system s	$b^*_{rs,e} = r_e\,sin(0) + g_e\,sin(180) + b_e\,sin(270)$	(5)
hue angle in 4x90 degree system s	$h_{ab,s,e} = arctan[\,b^*_{rs,e}\,/\,a^*_{rs,e}\,]$ (0<= $h_{ab,s,e}$<=360)	(6)
hue number in 4x90 degree system s	$e^*_e = h_{ab,s,d}/360$ (0<= e^*_e<=1)	(7)
CIELAB hue angle in elementary system	$h_{ab,a,e} = function\,[h_{ab,s,e}]$ (with table/equations)	(8)
CIELAB *LCH**_e data of maximum colour M_e	$L^*_{Me} = function\,[h_{ab,e}]$ (with table/equations)	(9)
	$C^*_{ab,Me} = function\,[h_{ab,e}]$ (with table/equations)	(10)
	$h_{ab,Me} = h_{ab,e}$	(11)
relative lightness of maximum colour M_e	$l^*_{Me} = [\,L^*_{Me} - L^*_{Ne}\,]\,/\,[\,L^*_{We} - L^*_{Ne}\,]$	(12)
relative lightness of the elementary colour	$l^*_e = t^*_e + l^*_{Me}\,c^*_e + 0,5\,c^*_e$	(13)
CIELAB *LCH**_e data of the elementary colour	$L^*_e = l^*_e\,[\,L^*_{We} - L^*_{Ne}\,] + L^*_{Ne}$	(14)
	$C^*_{ab,e} = c^*_e\,C^*_{ab,Me}$	(15)

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