

**What is Output Linearization?** (For the elementary hues, see CIE R1–47:2009.)  
 The colour space of a double cone includes 6 colours. The six colours can be the device-dependent device colours (index d):  $(R, Y, G, B, N, W)_d$  or the device-independent elementary colours (index e):  $(R, Y, G, B, N, W)_e$ .  
 Elementary red appears neither yellowish nor bluish. The hue angle is  $h_{ab,e} = 26$ .

For example for the **sRGB** colours according to IEC 61966–2–1 it is valid:  
 Device red  $R_d$  has the coordinates  $rgb^*_{R_d}$  and  $LCh^*_{R_d} = (L^*, C^*_{ab}, h_{ab})_{R_d}$   
 Elementary red  $R_e$  has the coordinates  $rgb^*_{R_e}$  and  $LCh^*_{R_e} = (L^*, C^*_{ab}, h_{ab})_{R_e}$   
 Corresponding data are given in the following for  $R_d, R_e$ , and  $W = W_d = W_e$

$$rgb_W = (1 \ 1 \ 1)_W$$

$$LCh^*W = (L^*, C^*_{ab}, h_{ab})_W = (95, 0, -)_W$$

$$rgb^*_{R_d} = (1 \ 0 \ 0)_{R_d}$$

$$LCh^*_{R_d} = (50, 100, 40)_{R_d}$$

$$rgb_{R_e} = (1 \ 0 \ 0)_{R_e}$$

$$LCh^*_{R_e} = (50, 87, 26)_{R_e}$$

**Output Linearization** of CIE R1–09:2015  
 produces for the hue angle  $h_{ab,R_e} = 26$   
 the CIELAB data  $L^*_{R_e} = 50$  and  $C^*_{ab,R_e} = 87$ .  
 These CIELAB data are produced with the  
 device to elementary input data (de)

$$rgb_{de,R_e} = (1 \ 0 \ 0, 26)_{de,R_e}$$

A calculated table for 360 hue angles includes:

$h_{ab}$	$LCh^*_{de}$	$rgb_{de}$
26	50 87 26	1 0 0,26

