

PSL2-program code: definition and reproduction of 20 L*-lightnesses

```
!PS-Adobe-3.0 B7231-7n.eps 20.10.94
%%BoundingBox: 72 90 226 206
/FS {findfont exch scalefont setfont} bind def
/MM {72 25.4 div mul} def
/languagelevel where {pop languagelevel} {1} ifelse
/PSL12 exch def
/dictende {countmark 2 idiv dup dict begin {def}
  repeat pop currentdict end} bind def
%%EndProlog

72 90 translate 0.01 MM dup scale 20 setlinewidth

PSL12 2 ge
  {[/CIEBasedA [
    /WhitePoint [1 1 1]
    /RangeA [0 100]
    /DecodeA
      {16 add 116 div 3 exp} bind
    dictende ] setcolorspace } if
  %question for PostScript Level 1 or 2
  %monochrome L*-color space for D65
  %CIEXYZ for white
  %CIELAB-L*-limits N/W
  %CIE-transformation L* -> Y
  %standard-PSL2 L* setcolor

PSL12 1 eq
  {/setcolor {0.01 mul 0.4 exp setgray} def } if
  %definition PSL1-SW-device

/colqua {moveto s 0 rlineto 0 s rlineto s neg 0 rlineto %square
  closepath} bind def

/s 600 def /xw 1000 def /yw 800 def square width and distances

50 setcolor %Graufeld mit L*=50 (mean CIELAB-lightness)
0 0 moveto 5400 0 rlineto 0 4000 rlineto %image size 54mm x 40mm
-5400 0 rlineto closepath fill

/TR {250 /Times-ISOL1 FS} bind def %Times-Roman; Hoehe 2,5mm
/TI {250 /TimesI-ISOL1 FS} bind def %Times-Italic

1200 3700 moveto 100 setcolor
TR (20 CIELAB ) show TI (L*-) show TR (lightness) show

550 400 translate %zero point lower left gray square

0 1 3 {/i exch def %line index i=0, 1, 2, 3
  0 1 4 {/j exch def %row index j=0, 1, 2, ..., 5
    /n i 5 mul j add def %serial number 0, 1, ..., 19
    /L* n 1 add 5 mul def %20 L*-lightness L*=5, ..., 100

    /x0 j xw mul def %x-position for square
    /y0 i yw mul def %y-position

    L* setcolor %CIELAB-L*-lightness
    x0 y0 colqua fill %xy0 fill square

    L* 50 eq {100 setcolor %special case square edge
      x0 y0 colqua stroke} if %xy0 square

    L* 4 string cvs dup stringwidth %x-, y-string length L*
    pop x0 exch sub 20 sub %x-position minus xl
    y0 100 add moveto %y-text-position

    100 setcolor show %text L* right justified W
    } for %end loop j
  } for %end loop i

showpage
```

ME370-7, B8_41

PSL2-program code: definition and reproduction of 20 L*-colors

```
!PS-Adobe-3.0 B7241-7n.eps 20.10.94
%%BoundingBox: 72 90 226 206
/FS {findfont exch scalefont setfont} bind def
/MM {72 25.4 div mul} def
/languagelevel where {pop languagelevel} {1} ifelse
/PSL12 exch def
/dictende {counttomark 2 idiv dup dict begin {def}
  repeat pop currentdict end} bind def
%%EndProlog

72 90 translate 0.01 MM dup scale

PSL12 2 ge {[/CIEBasedABC [
  /WhitePoint [0.9505 1 1.089]
  /RangeABC [0 0.9505 0 1 0 1.0885]
  /RangeLMN [0 0.9505 0 1 0 1.0885] dictende ] setcolorspace} if
  %color space and limits D65
  %CIEXYZ for D65
  %CIEXYZ-limits N/W
  %PSL1 color device

PSL12 1 eq
  {[/setrgbcolor where
    {pop setrgbcolor}
    {pop 0.4 exp setgray pop} ifelse }
  %definition for PSL1-Geraete
  %question for PSL1 color device
  %PSL1 color device
  %PSL1 NW device
  /setcolor exch def } if

/LABDEF {/b* exch def /a* exch def /L* exch def } bind def
/X* {L* 16 add 116 div a* 500 div add} bind def
/Y* {L* 16 add 116 div} bind def
/Z* {L* 16 add 116 div b* 200 div sub} bind def
/DecodeXYZ* {dup 6 29 div ge {dup dup mul}
  {4 29 div sub 108 841 div mul} ifelse} bind def
/X {X* DecodeXYZ* 0.9505 mul} bind def
/Y {Y* DecodeXYZ*} bind def
/Z {Z* DecodeXYZ* 1.0890 mul} bind def
/LABXYZ {LABDEF X Y Z} bind def

/s 600 def /xw 1000 def /yw 900 def %square width and distances

/colqua {moveto s 0 rlineto 0 s rlineto %square
  s neg 0 rlineto closepath fill} bind def

50 0 0 LABXYZ setcolor %gray square with L*=50 (mean CIELAB lightness)
0 0 moveto 5400 0 rlineto 0 4000 rlineto %image size 54mm x 40mm
-5400 0 rlineto closepath fill

/TR {250 /Times-ISOL1 FS} bind def %Times-Roman; height 2,5mm
/TI {250 /TimesI-ISOL1 FS} bind def %Times-Italic

1200 3720 moveto 100 0 0 LABXYZ setcolor
TR (20 CIELAB ) show TI (L*a*-) show TR (colors) show
100 3720 moveto TI (L*) show
5100 100 moveto TI (a*) show TR

400 300 translate %zero point lower left test color

0 1 3 {/i exch def %for CIELAB-L*= 20, 40, 60, 80
  0 1 4 {/j exch def %for CIELAB-a*=0, 20, 40, 60, 80
    /aS j 20 mul def
    /aS aS 0 LABXYZ setcolor %L*, a*, b*=0 -> XYZ
    j xw mul i yw mul colqua
    100 0 0 LABXYZ setcolor %writing W
    LS 4 string cvs dup stringwidth pop /xl exch def
    j xw mul xl sub 050 sub i yw mul 200 add moveto show
    aS 4 string cvs dup stringwidth pop /xl exch def
    j xw mul xl sub 400 add i yw mul 220 sub moveto show
    } for %j
  } for %i

showpage
```

ME371-7, B8_43