Exercises chapter 2.3[·]

2.3.1. Color vision models

Different authors have proposed different model for color vision based on the stage theory.

Consider the following colors, specified by theirs tristimulus values:

Sample	X	Y	Z
White	95,041	100,000	108,869
1	32,989	29,788	24,517
2	27,485	28,896	14,915
3	23,912	30,427	9,906
4	20,436	29,483	21,261
6	24,988	30,845	40,343
7	28,214	29,793	57,802
8	33,324	29,375	53,133
9	37,633	31,350	45,355

Give the values of the opponent channels: luminance, red-green and yellow-blue and the final stage value for the following color vision models:

a) Hurvich y Jameson (1955).
b) Ingling-Tsou (1977).
c) Guth (1980)
d) Boynton (1986)

Use the Hunt-Pointer-Stevez matrix to the conversion from CIE 1931 space to cone response space.

$$\mathrm{M_{HPE}} = \begin{pmatrix} 0.38971 & 0.68898 & -0.07868 \\ -0.22981 & 1.18340 & 0.04641 \\ 0.00000 & 0.00000 & 1.00000 \end{pmatrix}$$

Compare and comment the results.

You can find more information in slide 11 to 14 of chapter 2.3.

[·] Please, submit the report as pdf file and don't forget to include the Matlab code file. Both files with the format "Surname_HW_2-2"