T-61.271 Information visualization

Exercise 2. Thu 18.10.2001:12-14 T4

- Basic visual percption
- Color perception and visualization

3. Explain the Hermann gird illusion and brightness contrast effects by the DOG (Difference Of Gaussians) model.

2. Create an image shows a strong color contrast effect.
(The same color looks different when it is surrounded by different colors).

3. Plot the gamut of a color foto/image in CIELab space. You can convert RGB values to XYZ with the following equation.

$$\begin{bmatrix} R \\ G \\ B \end{bmatrix} = \begin{bmatrix} 0.412 & 0.358 & 0.180 \\ 0.213 & 0.715 & 0.072 \\ 0.019 & 0.119 & 0.950 \end{bmatrix} \begin{bmatrix} X \\ Y \\ Z \end{bmatrix} \tag{1}$$

The white point to be used in the CIELab formulas is D65:

$x_n = 0.312713$, $y_n = 0.329016$ and $Y_n = 1.0$.