

a. What is the difference between the MATLAB operators .* and * ? Demonstrate the difference on the basis of two simple examples.

With the *-operator you perform ordinary multiplication, for example to multiply 2 matrices with each other. The .*-Operator is used if you want to work on a matrix on an element basis.

Example:

A = 1 2	B = 5 6	A * B = 19 22	A .* B = 5 12
3 4	7 8	43 50	21 32

b. What needs to be removed in the HSV color space, to eliminate the color information (to compute an image that contains only shades of gray)?

HSV means H = hue, S = saturation, V = value. Hue defines the color, so if you remove the hue-values, you can work with the luminance.