

Homework 4

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1. Write an Auto Exposure Bracketing (AEB) function for Tegra
Our Android Code is in the code.zip.

- lower exposure time



- higher exposure time

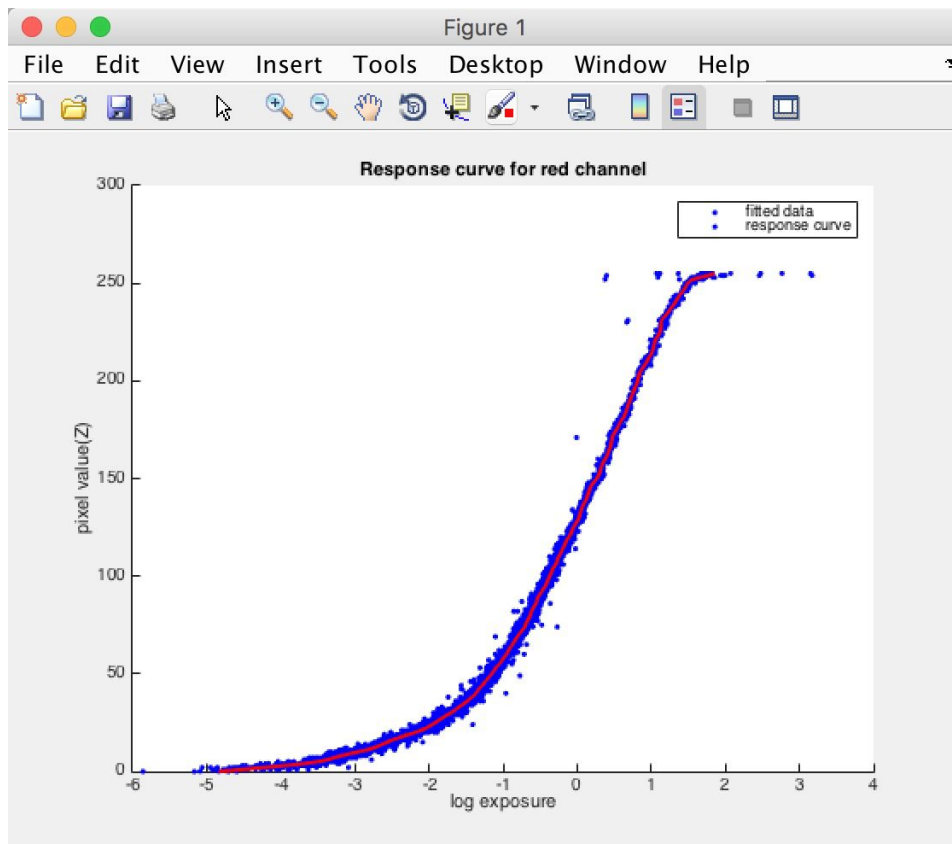


2. Write a program to find the camera response curves for the shield tablet

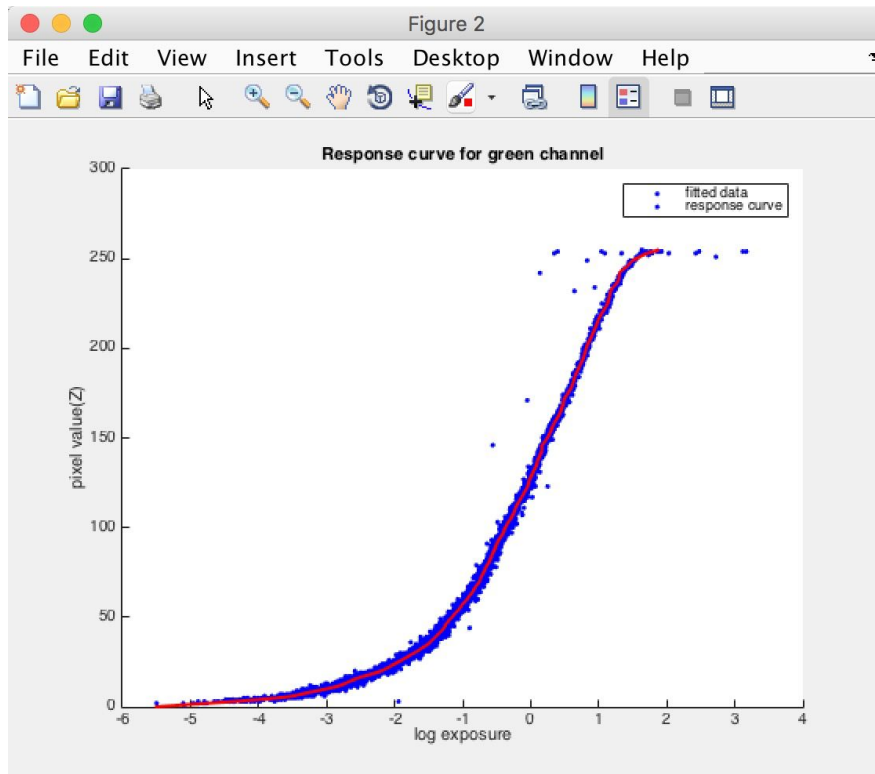
- 1000 pixels (random)
- $l = 5$
-

Response curve:

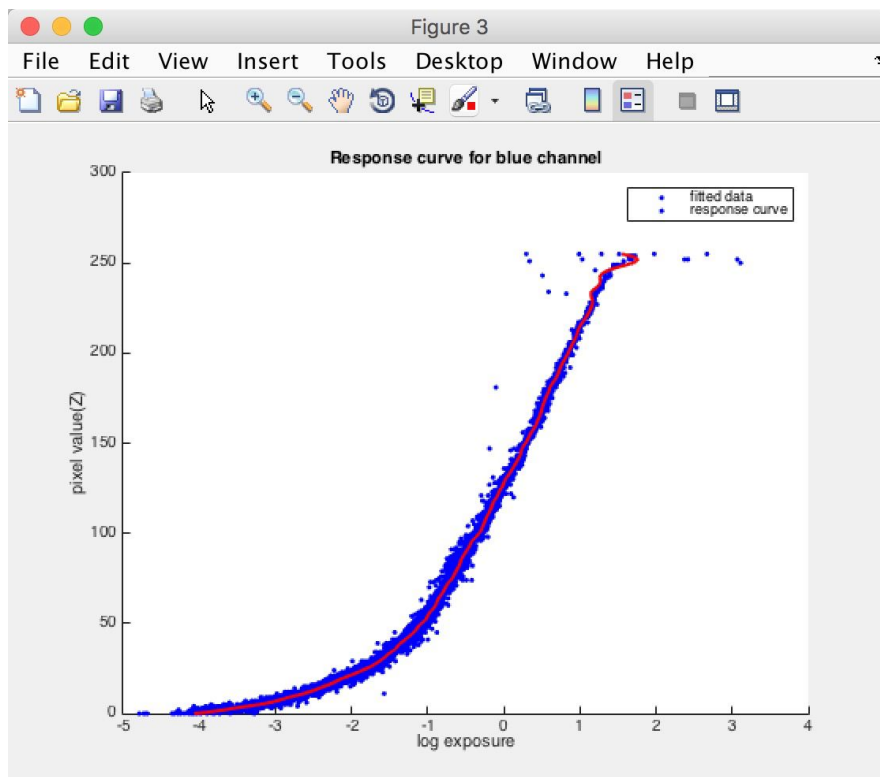
- red channel



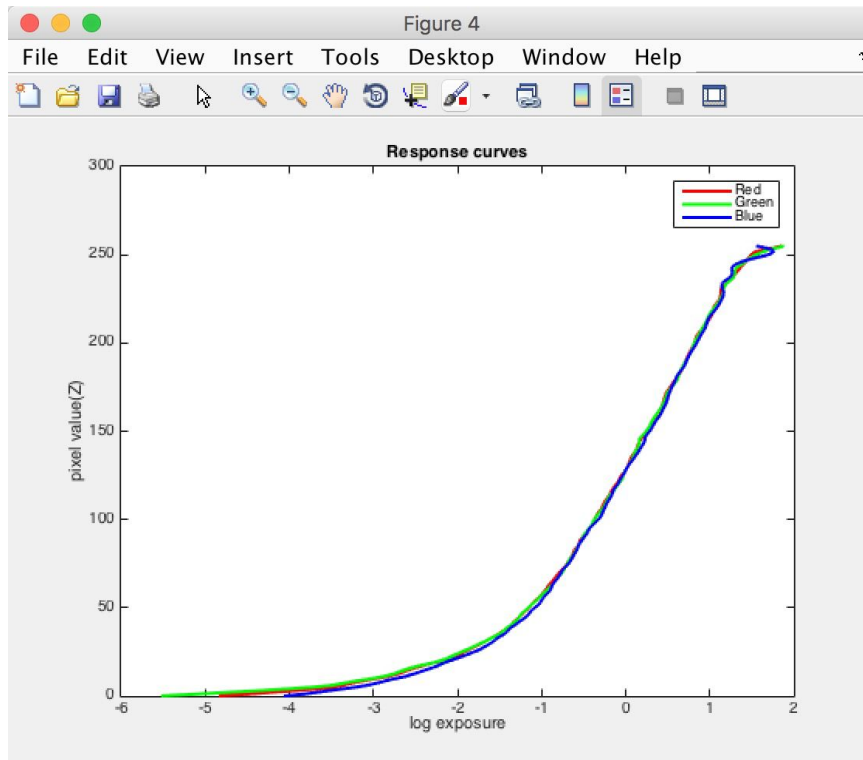
- green channel



- blue channel

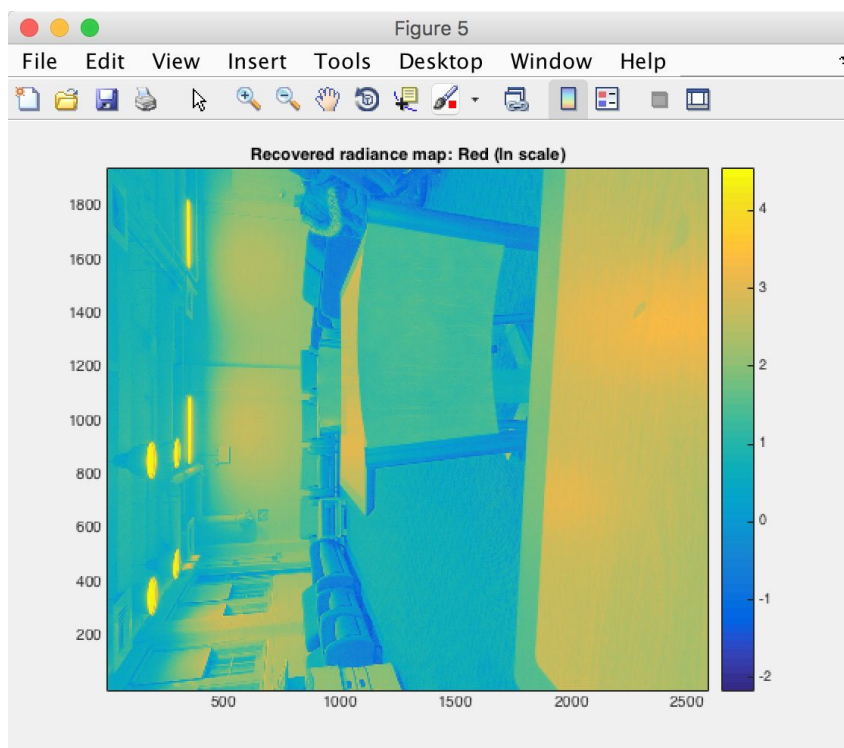


- all three channels

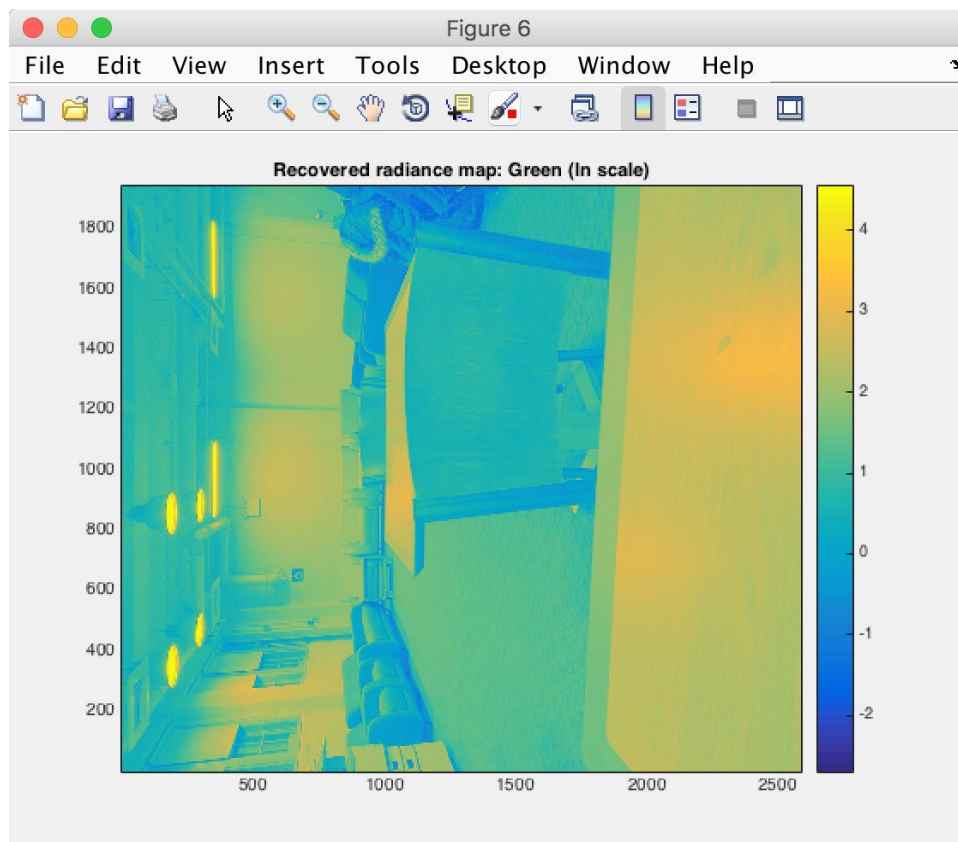


3. Recover the HDR radiance map of the scene

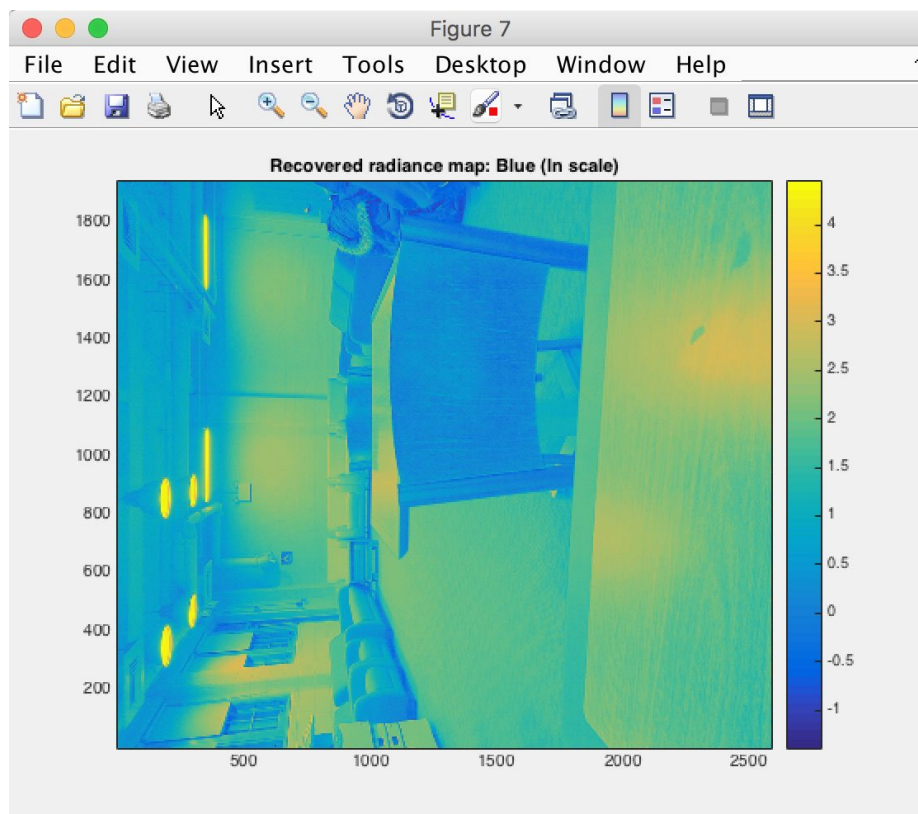
- Red



- Green



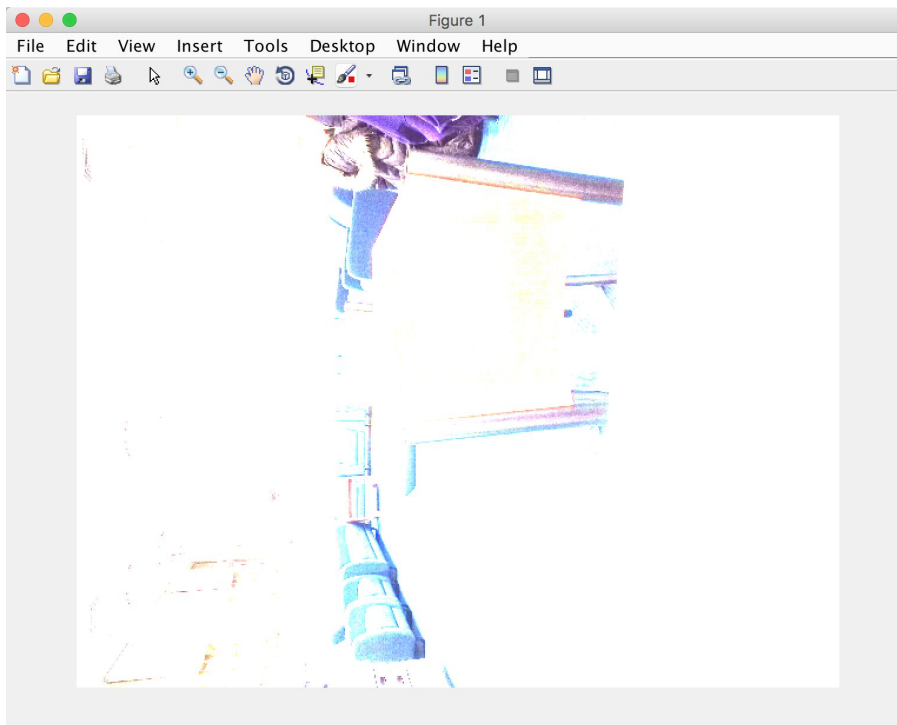
- Blue



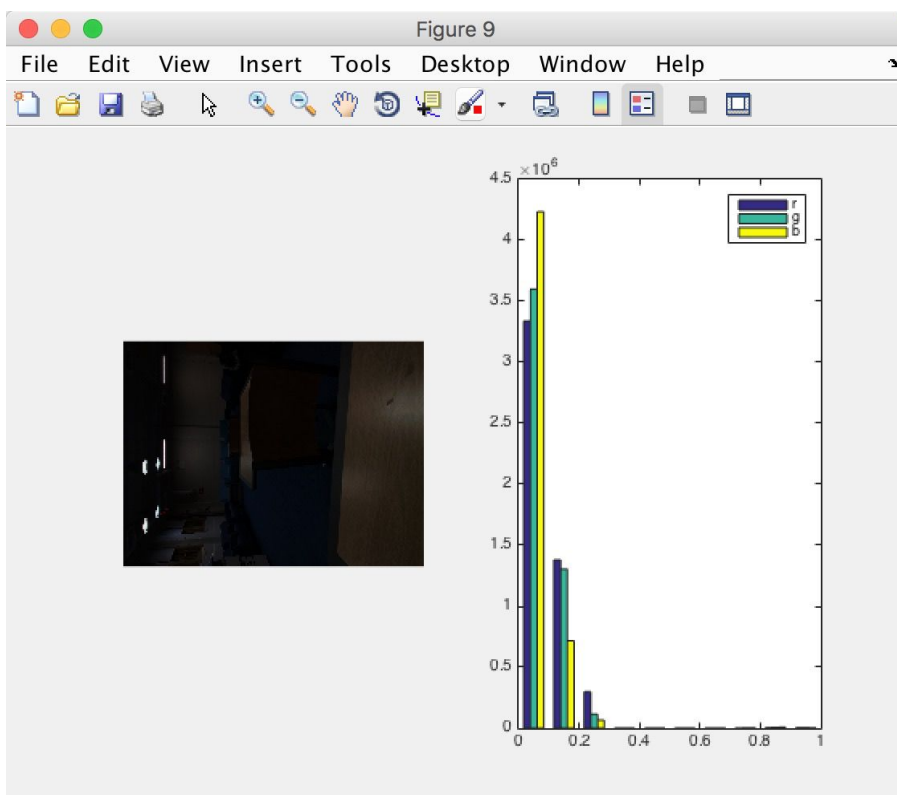
The dynamic range of the scene: nearly 10^5 or 100,000:1

4. Implement a tone mapping algorithm to display your HDR image

- Recovered radiance map

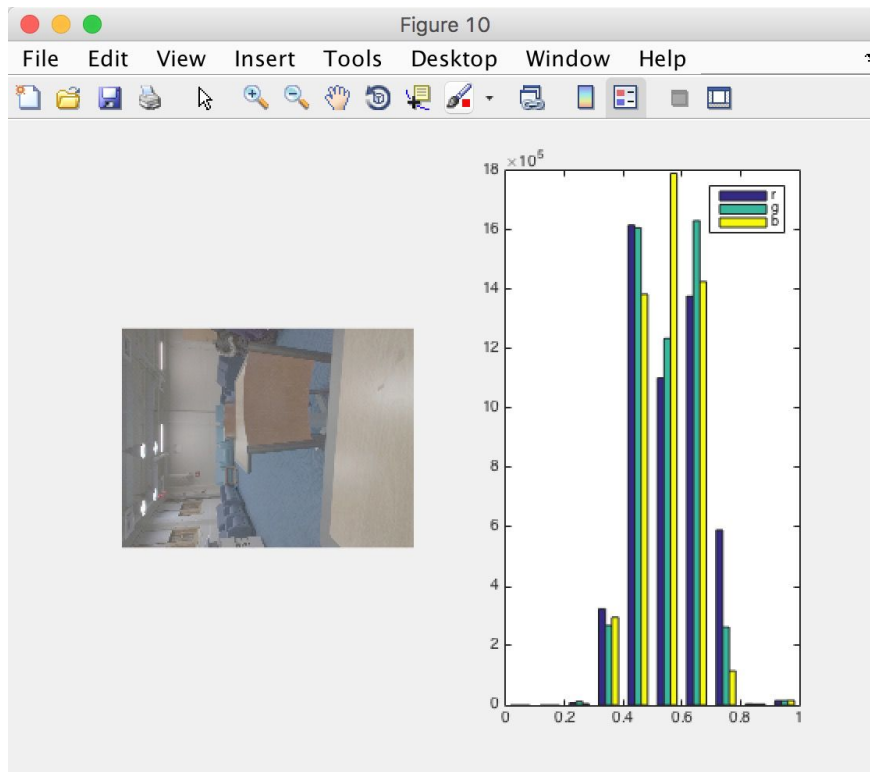


- normalized radianced map & histogram



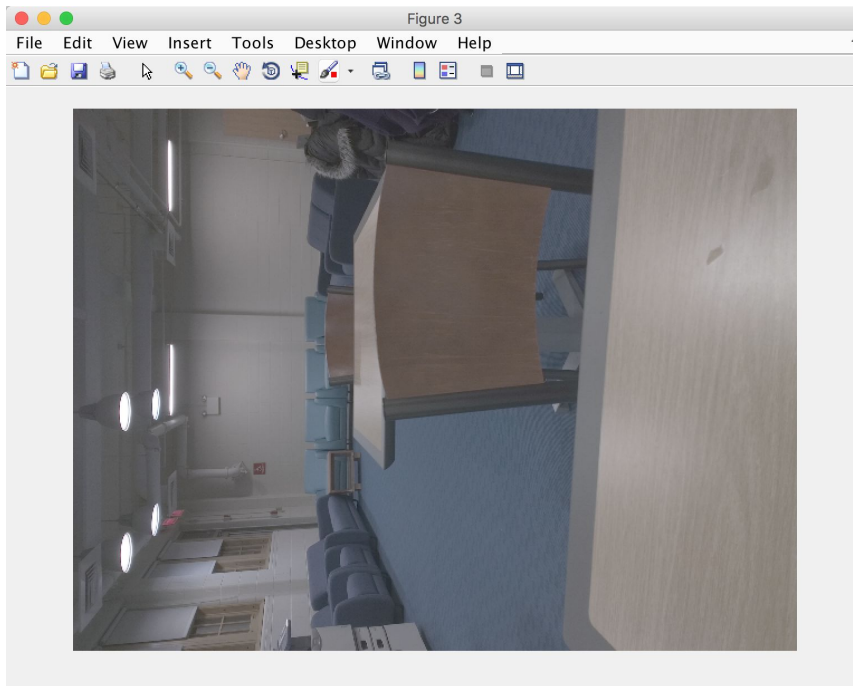
gamma = 0.2

- gamma radianced map & histogram

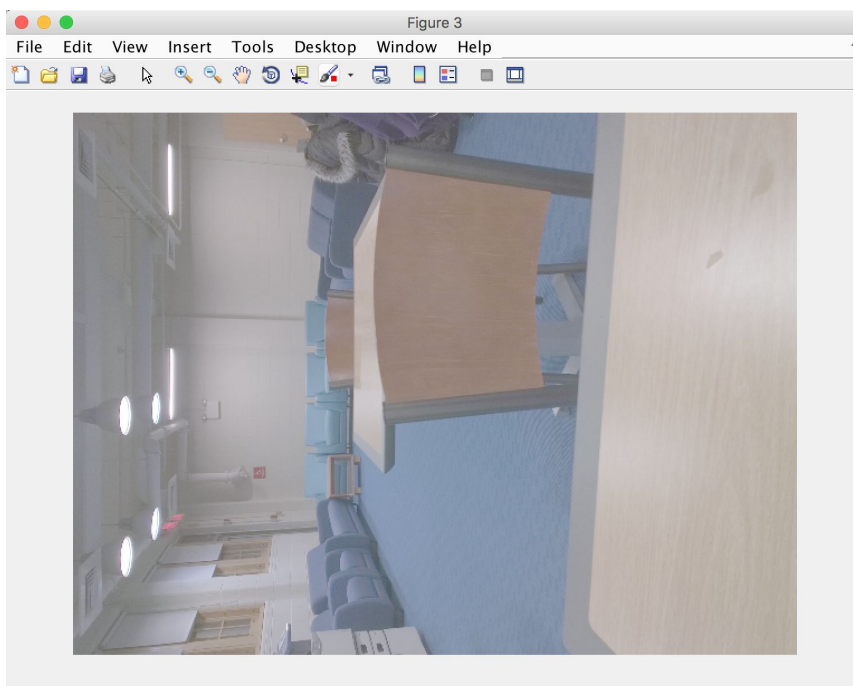


Experiment with different values for a .

- $a=0.18$



- $a=0.7$



- $a=1.0$

