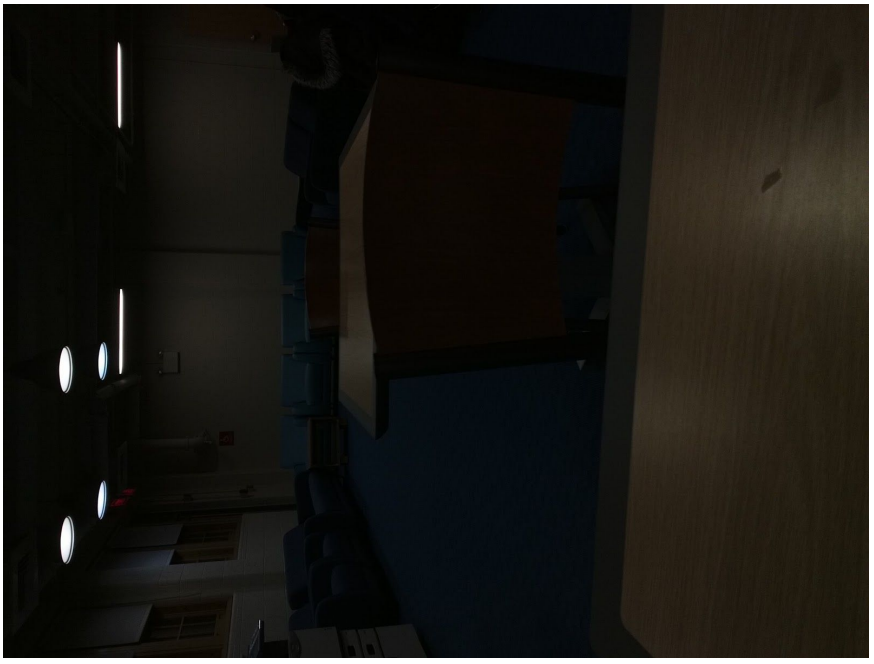
Homework 4

Sylvia Wang, Yongchi Zhang

1. Write an Auto Exposure Bracketing (AEB) function for Tegra

Our Android Code is in the code.zip.

- lower exposure time



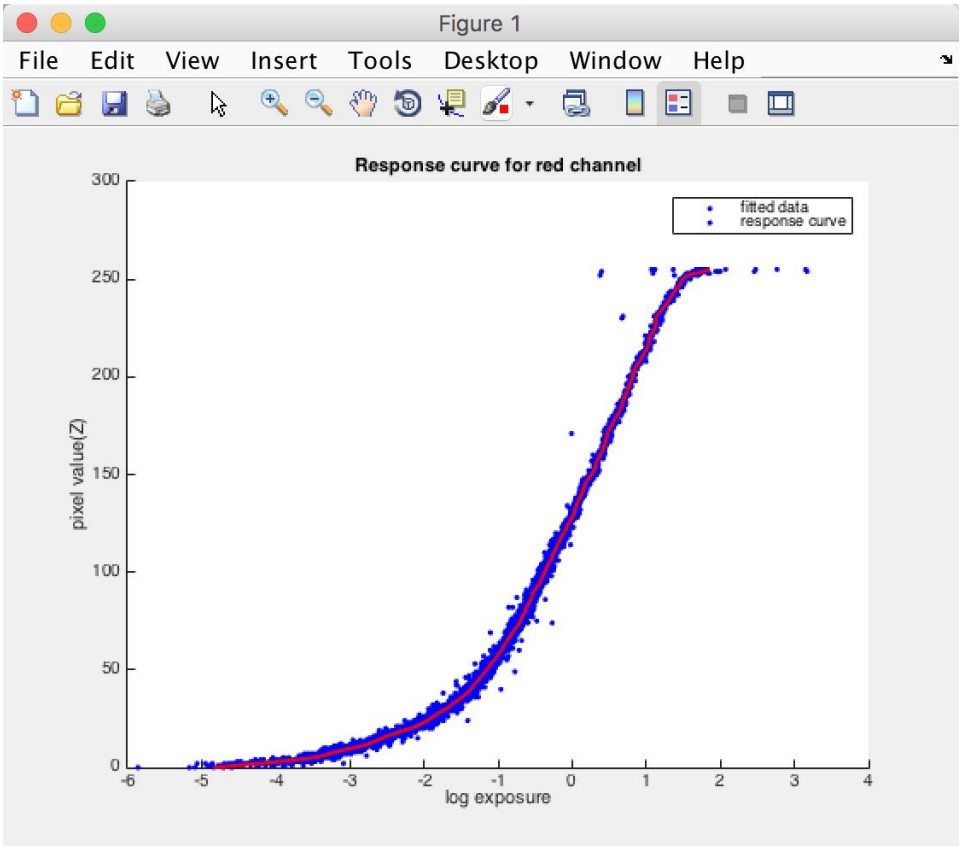
- higher exposure time

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

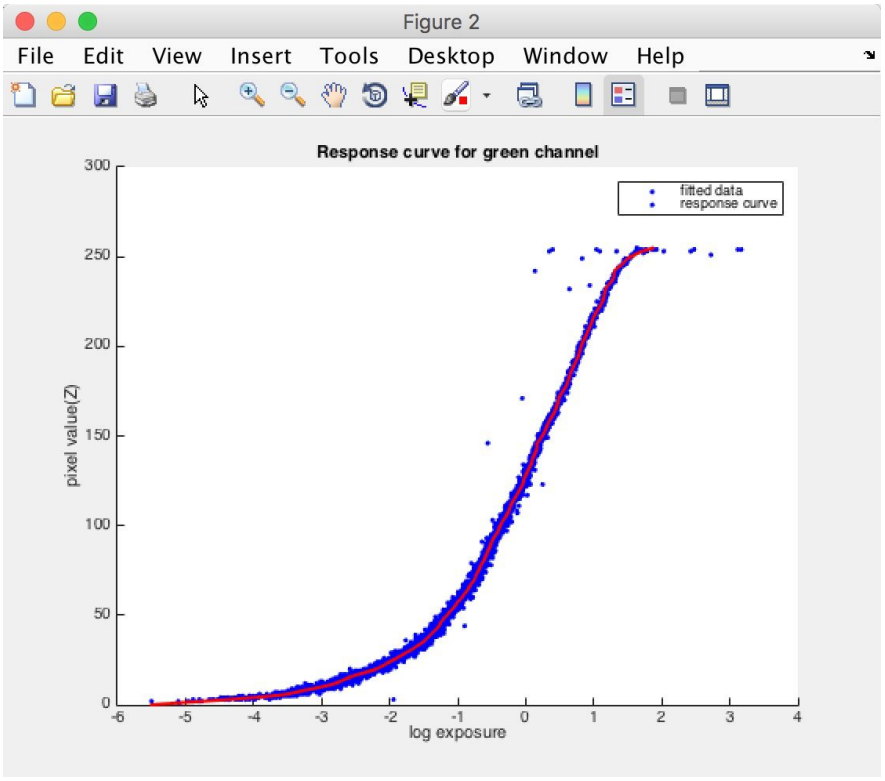
- 1000 pixels (random)
- l = 5
-

Response curve:

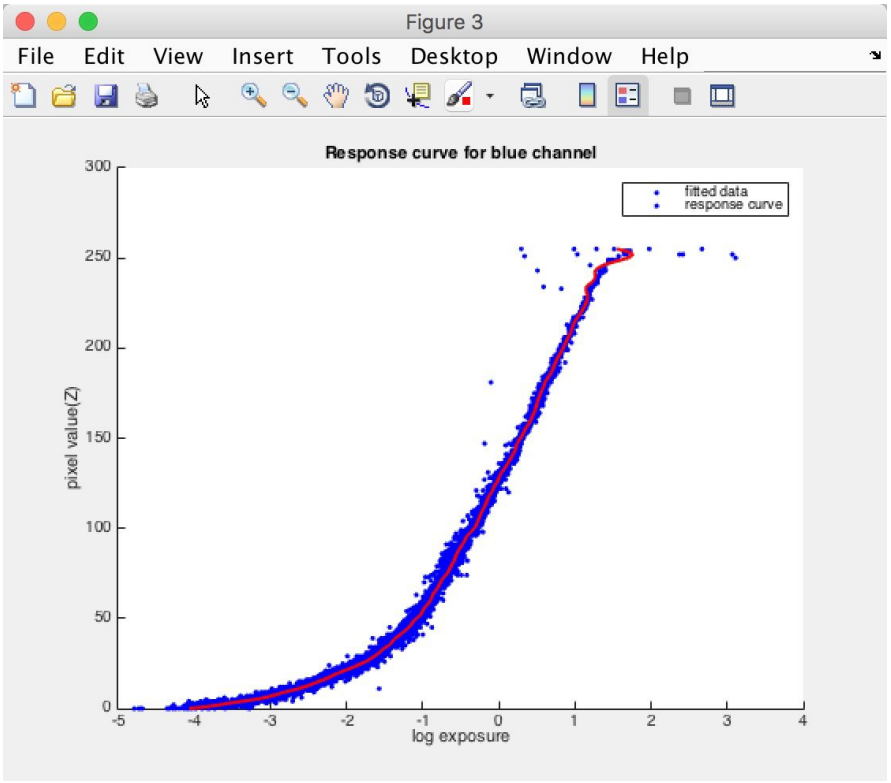
- red channel



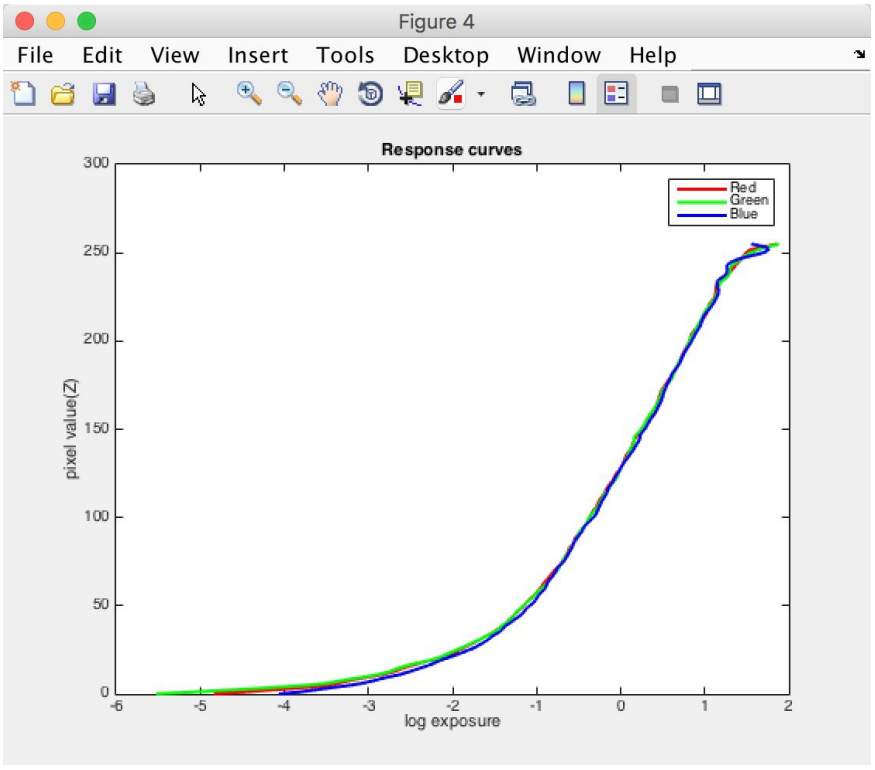
- green channel



- blue channel

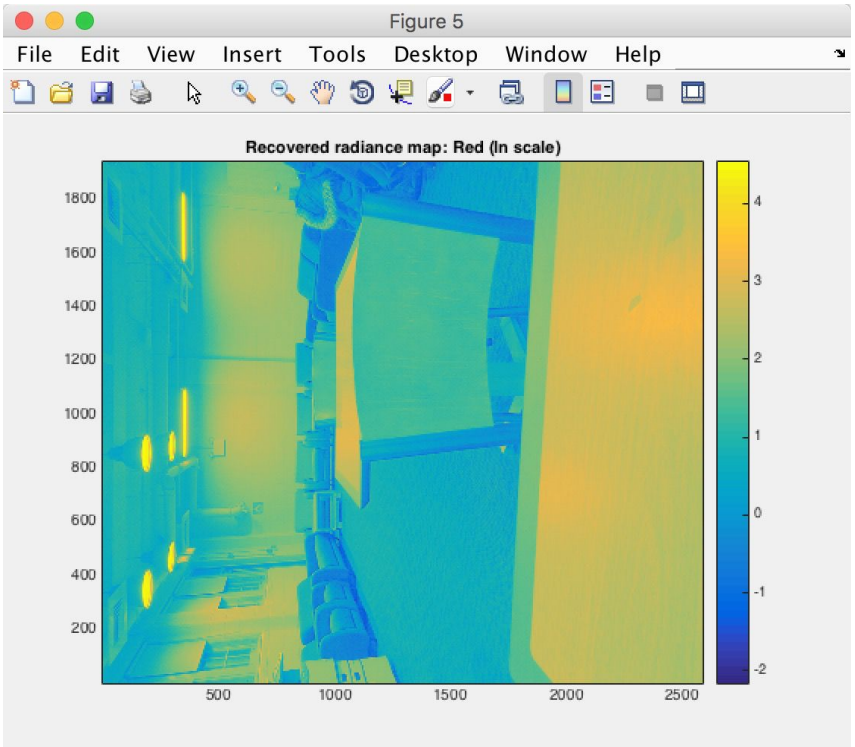


- all three channels

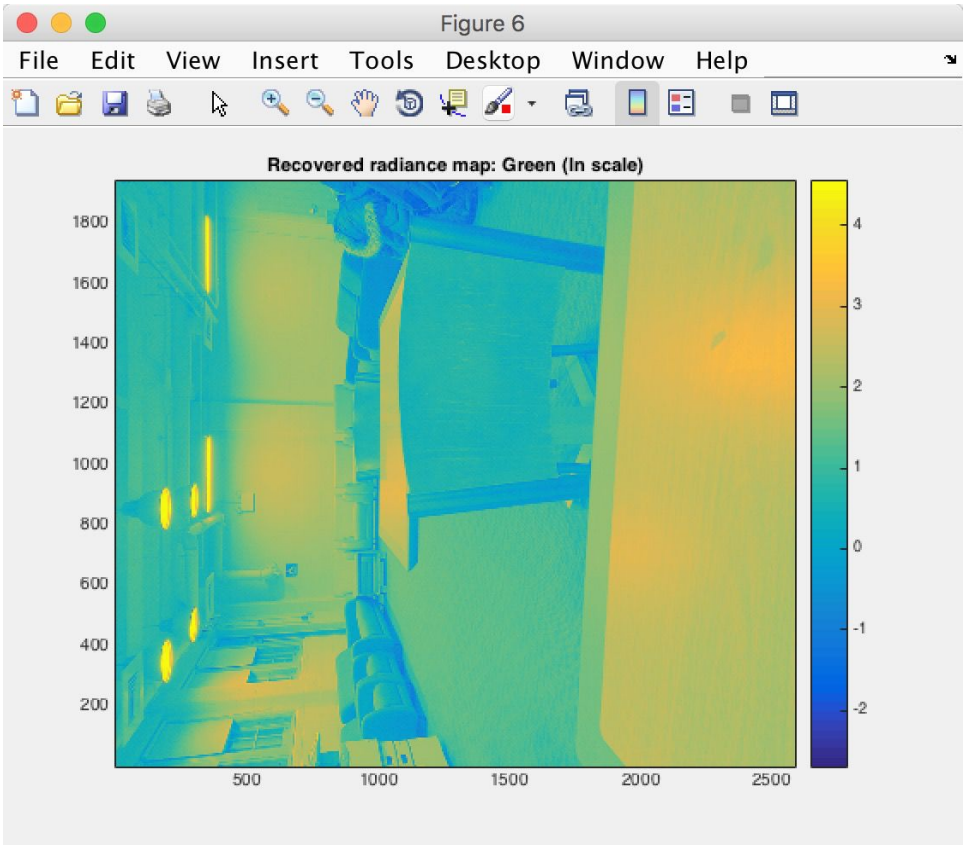


3. Recover the HDR radiance map of the scene

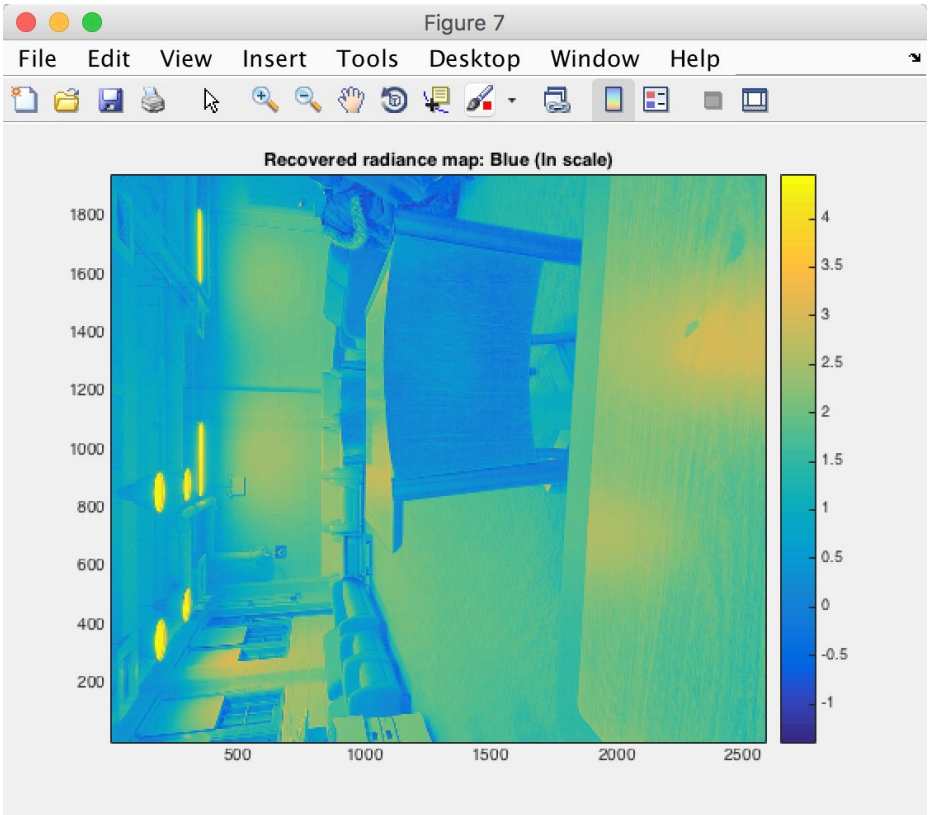
- Red



- Green



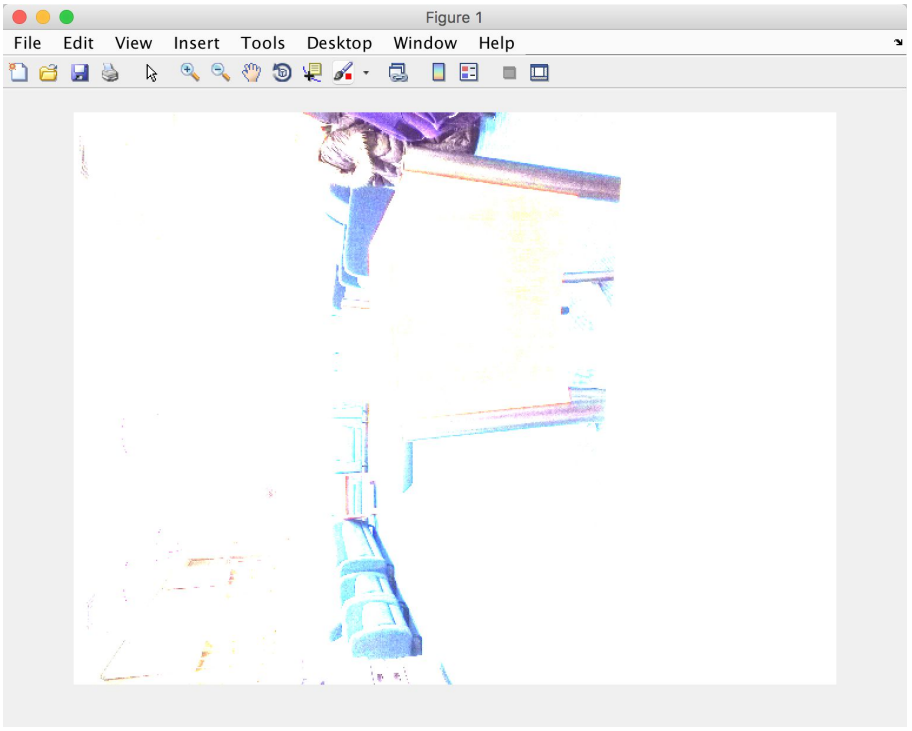
- Blue



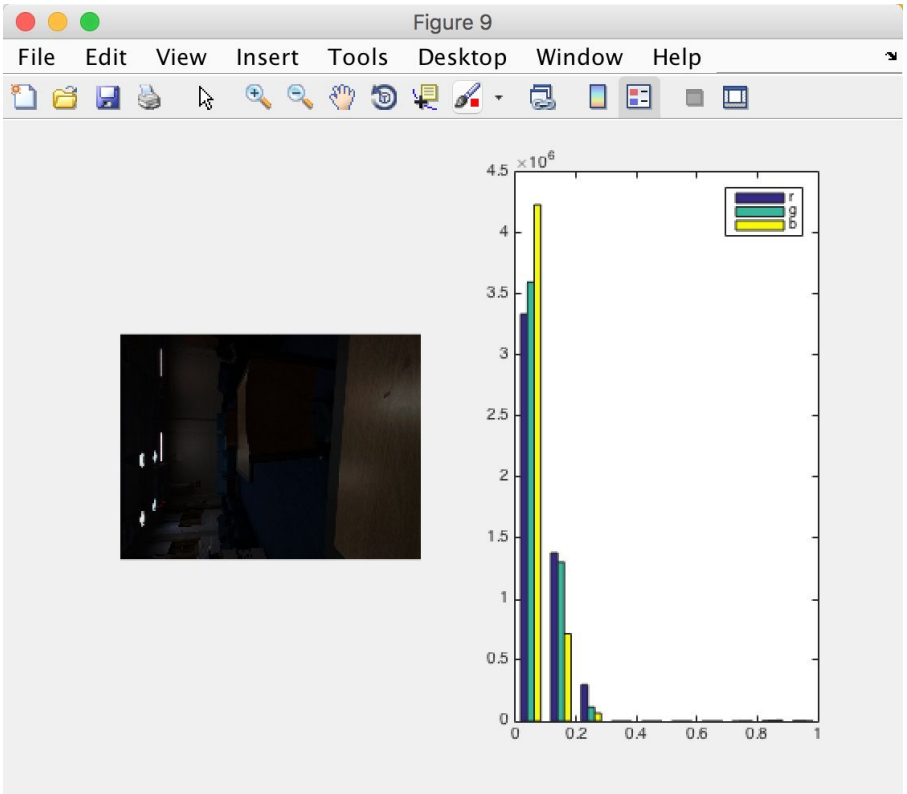
The dynamic range of the scene: nearly 10^5 or 100,000:1

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

- Recovered radiance map

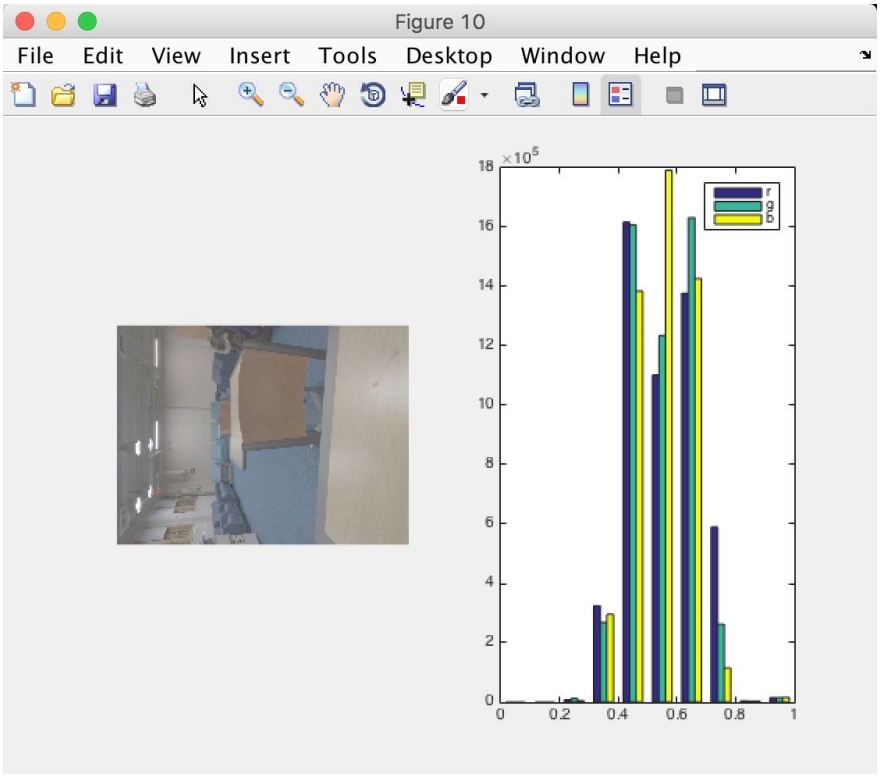


- normalized radianced map & histogram



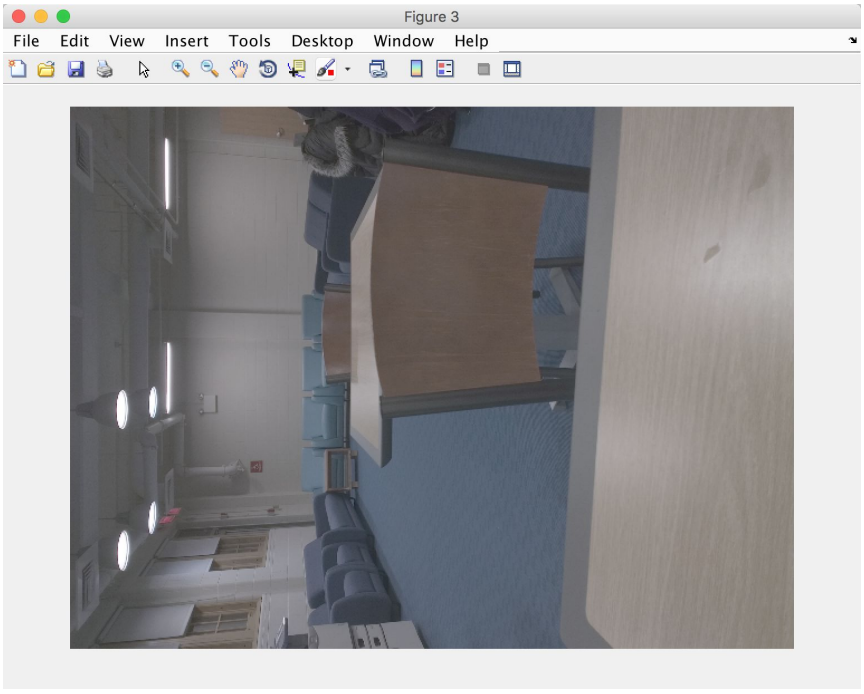
gamma = 0.2

- gamma radianced map & histogram

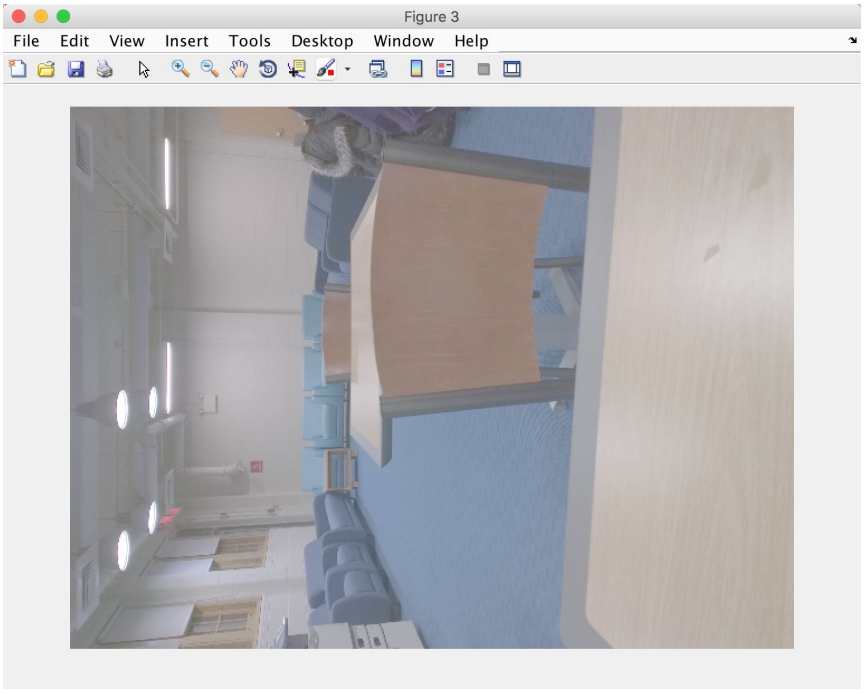


Experiment with different values for *a.*

- a=0.18



- a=0.7



- a=1.0