Space-Variant Blurring

R.Rohith
EP21B030

1 Question - 1

The value of A is 2.0 and the value of B is $\frac{N^2}{2\log(100A)} = 3588.403$.

The following shows the results of applying the Space-Variant blurring with

$$\sigma(m,n) = A\exp(-\frac{(m-\frac{N}{2})^2 + (n-\frac{N}{2})^2}{B})$$

Figure 1: Before Blurring

Figure 2: After Blurring

The plot of the Sigma map is given below.

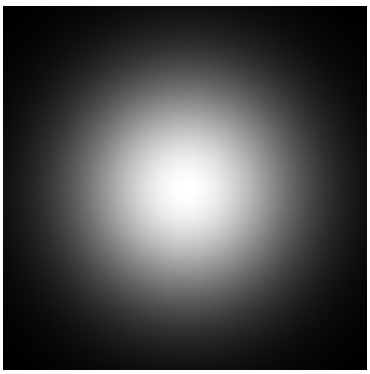

Figure 3: Plot of Sigma Map

2 Question - 2

The following shows the results of applying space-variant blurring with the Sigma map $\sigma(m, n) = 1.0$ and space-invariant blurring with the Gaussian blur kernel with $\sigma = 1.0$

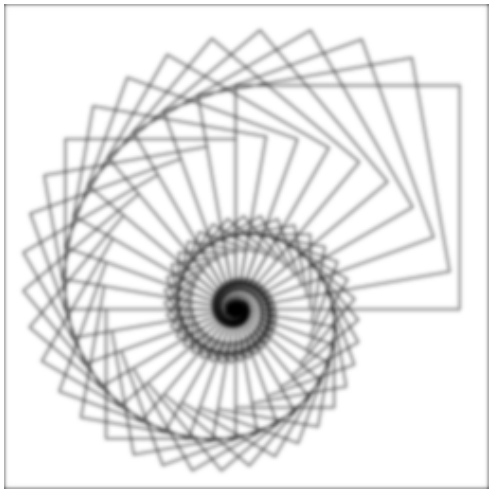

Figure 4: Space-Variant Blurring

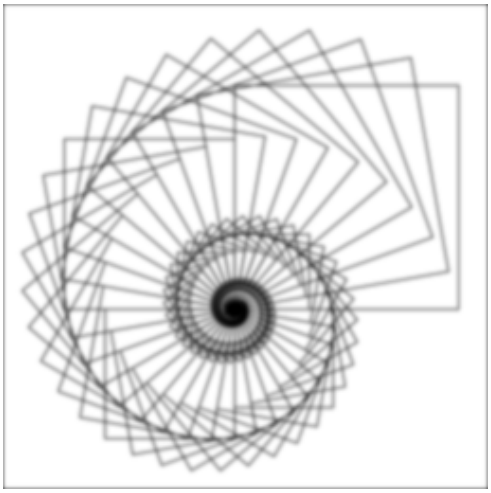

Figure 5: Space-Invariant Blurring

The plot of the Difference between the two is given below.

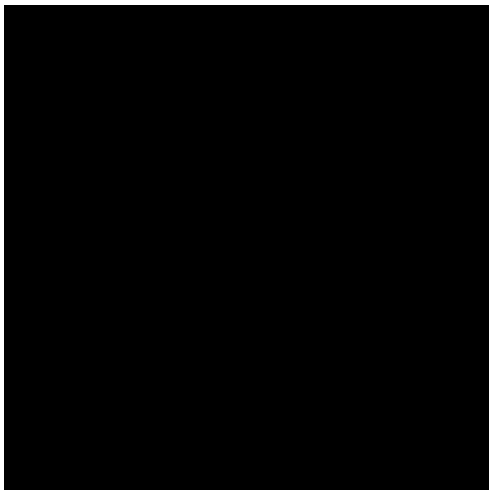

Figure 6: Plot of Sigma Map

Hence, we see that blurred images of both steps are the same.