

1. Apply a blur and noise reduction Wiener filter to “SMPTEdegraded.ipt.” The blur impulse response $h(m,n)$ is:

1	2	1
2	4	2
1	2	1

You may want to constrain the amplitude inverse filter to avoid excessive high frequency boosting or division by zero (notes p380). Use a cascade Wiener filter (notes p393) with an adaptive noise reduction component (notes p387). (80%)

2. Use the measure of performance you developed for HW3 (or define a new one), and compare the performance of the above Wiener filter to a 3x3 convolution HBF with $K=1, 2$ and 3 (notes p171). (20%)