

Explain the unsharpened mask and its link to the  
laplacian sharpening

Michel Jean Joseph Donnet

# Unsharpened mask with box filter

Original image



Image blurred



Box unsharpen mask



Enhanced image with parameter 2



# Unsharpened mask with gaussian filter

Original image



Image blurred



Gaussian unsharpen mask



Enhanced image with parameter 2



# Unsharpened mask comparison

Laplacian image



Gaussian unsharpened mask



Invert of gaussian unsharpened mask



## Properties

$$\begin{aligned}g(x, y) &= f(x, y) + \alpha[f(x, y) - f(x, y) * h(x, y)] \\&= f(x, y) + \alpha f(x, y) * [\delta(x, y) - h(x, y)]\end{aligned}$$