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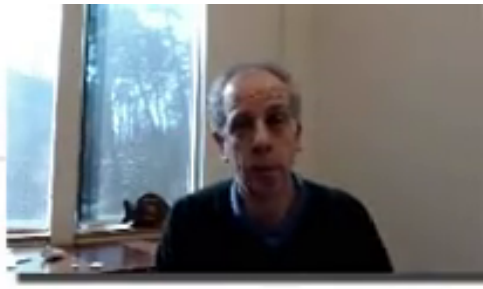
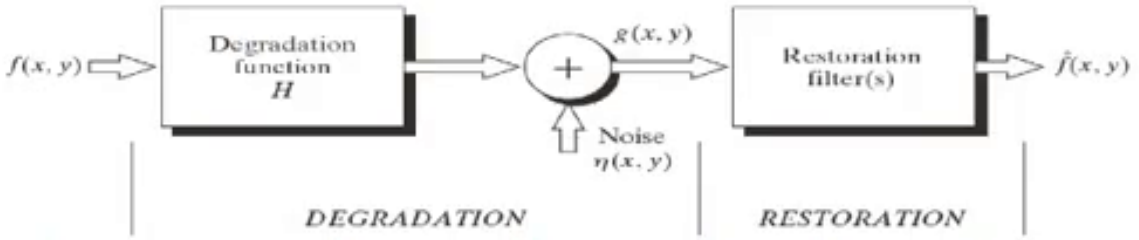


Chapter 5

Image Restoration and Reconstruction

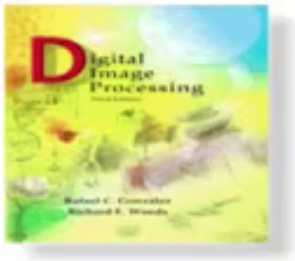
FIGURE 5.1 A model of the image degradation/ restoration process.



$$g(x,y) = f(x,y) * h(x,y) + \eta(x,y)$$

$$G(u,v) = F(u,v) \cdot H(u,v)$$

$$F(u,v) = \frac{G(u,v)}{H(u,v)}$$



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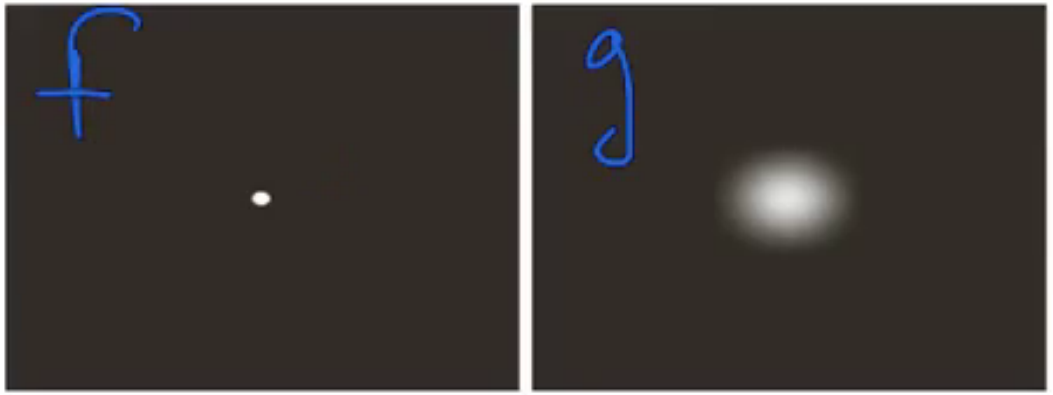
a b

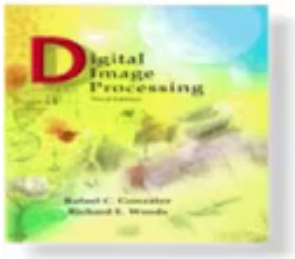
FIGURE 5.24 Degradation estimation by impulse characterization. (a) An impulse of light (shown magnified). (b) Imaged (degraded) impulse.



$$H = ?$$

$$g(x,y) = f(x,y) * G(0,\sigma)$$

$$G = \delta(x,y) * G$$



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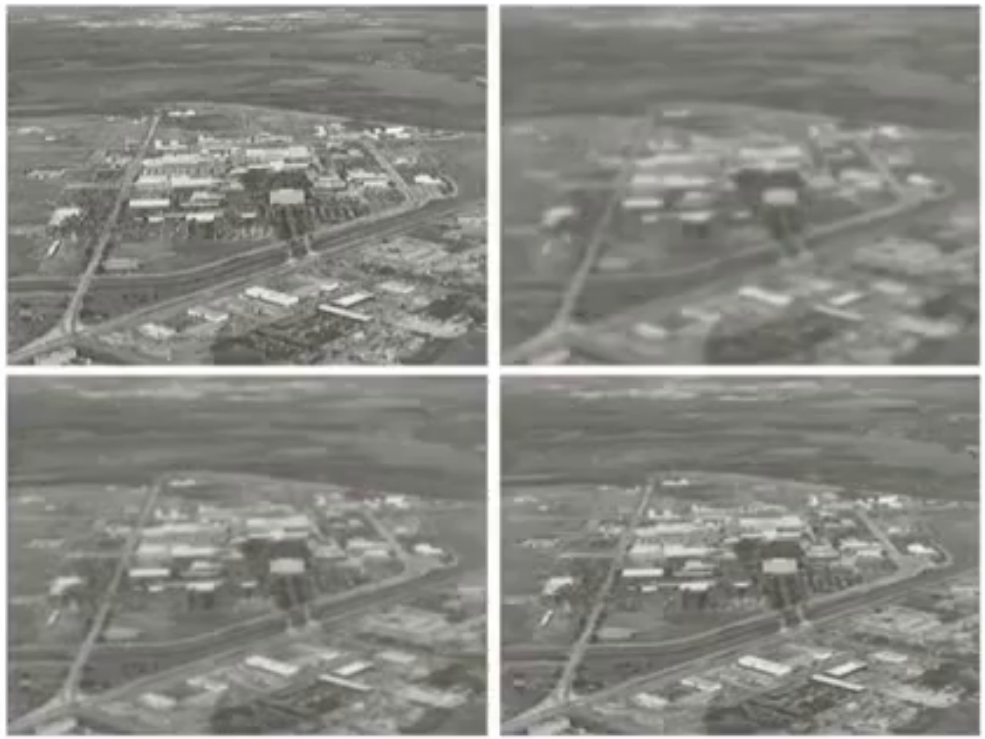

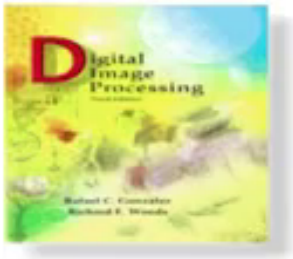

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$$g(x,y) = \int_0^T f(x - x(t), y - y(t))\,dt$$

$$G = HF$$