

Consider using a smooth circular window, for example a Gaussian, if the response is noisy.

$$w_{u,v} = e^{\frac{-(u^2+v^2)}{2\sigma^2}}$$

Such that

$$A = X^2 \otimes w$$

$$B = Y^2 \otimes w$$

$$C = XY \otimes w$$

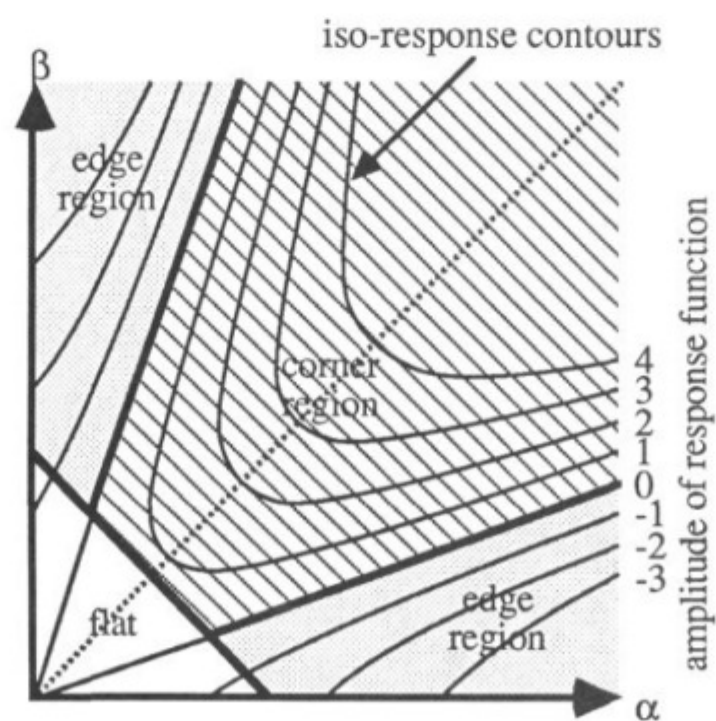
Compute gradients of I

$$(X, Y) \approx (I_x, I_y)$$

Find the 2*2 symmetric matrix M and its eigenvalues α & β

$$M = \begin{bmatrix} A & C \\ C & B \end{bmatrix}$$

Threshold R to detect corners.



Compute the response function

$$R = \det(M) - k \text{Tr}(M)^2$$

$$\text{Tr}(M) = \alpha + \beta = A + B$$

$$\det(M) = \alpha\beta = AB$$

where k is a sensitivity parameter