DIRO
IFT 3205

TRAITEMENT DU SIGNAL

TP -1-

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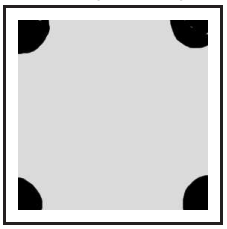
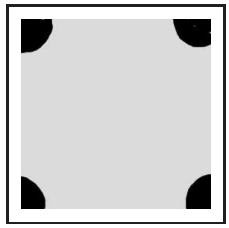
FONCTION TFD

Algorithmiquement

$$f(x,y) \overset{\mathcal{F}}{\rightleftharpoons} F(u,\nu) = R(u,\nu) + jI(u,\nu)$$

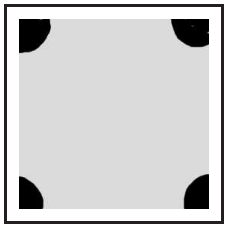
$$\text{TFD}\left(\begin{array}{c}\textbf{Réel}\\ \\ \textbf{Imaginaire}\end{array}\right) = \left(\begin{array}{c}R(u,\nu)\\ \\ I(u,\nu)\end{array}\right)$$

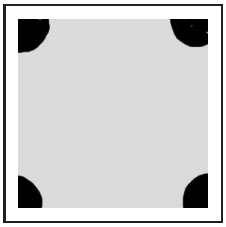




et

$$\text{TFD}^{-1}\left(\begin{array}{c}R(u,\nu) \text{ avec centre informatique}\\ \\ I(u,\nu) \text{ avec centre informatique}\end{array}\right) = \left(\begin{array}{c}\text{Image traitée}\\ \\ \text{Abstraction}\end{array}\right)$$



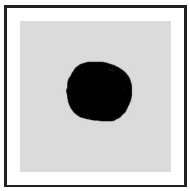


FONCTION TFD

Modification et Visualisation du Module

$$|F(u,\nu)| = \sqrt{R^2(u,\nu) + I^2(u,\nu)}$$

$$\begin{pmatrix} R(u,\nu) \\ I(u,\nu) \end{pmatrix} \Leftrightarrow \begin{pmatrix} R(u,\nu) \\ I(u,\nu) \end{pmatrix} \Leftrightarrow |F(u,\nu)| \triangleright$$



Exemples

$$|F(u=3,\nu=3)| = 0 \quad \Leftrightarrow \quad \begin{matrix} R(u=3,\nu=3) = 0 \\ I(u=3,\nu=3) = 0 \end{matrix}$$

$$|F(u=3,\nu=3)| \times 2 \quad \Leftrightarrow \quad \begin{matrix} R(u=3,\nu=3) \times 2 \\ I(u=3,\nu=3) \times 2 \end{matrix}$$

Nota -1-

Mult et $(1 + \log)$

- seulement pour la visualisation d'un module de spectre !

Nota -2-

discontinuités horizontales $\overset{\mathcal{F}}{\rightleftharpoons}$ discontinuités verticales