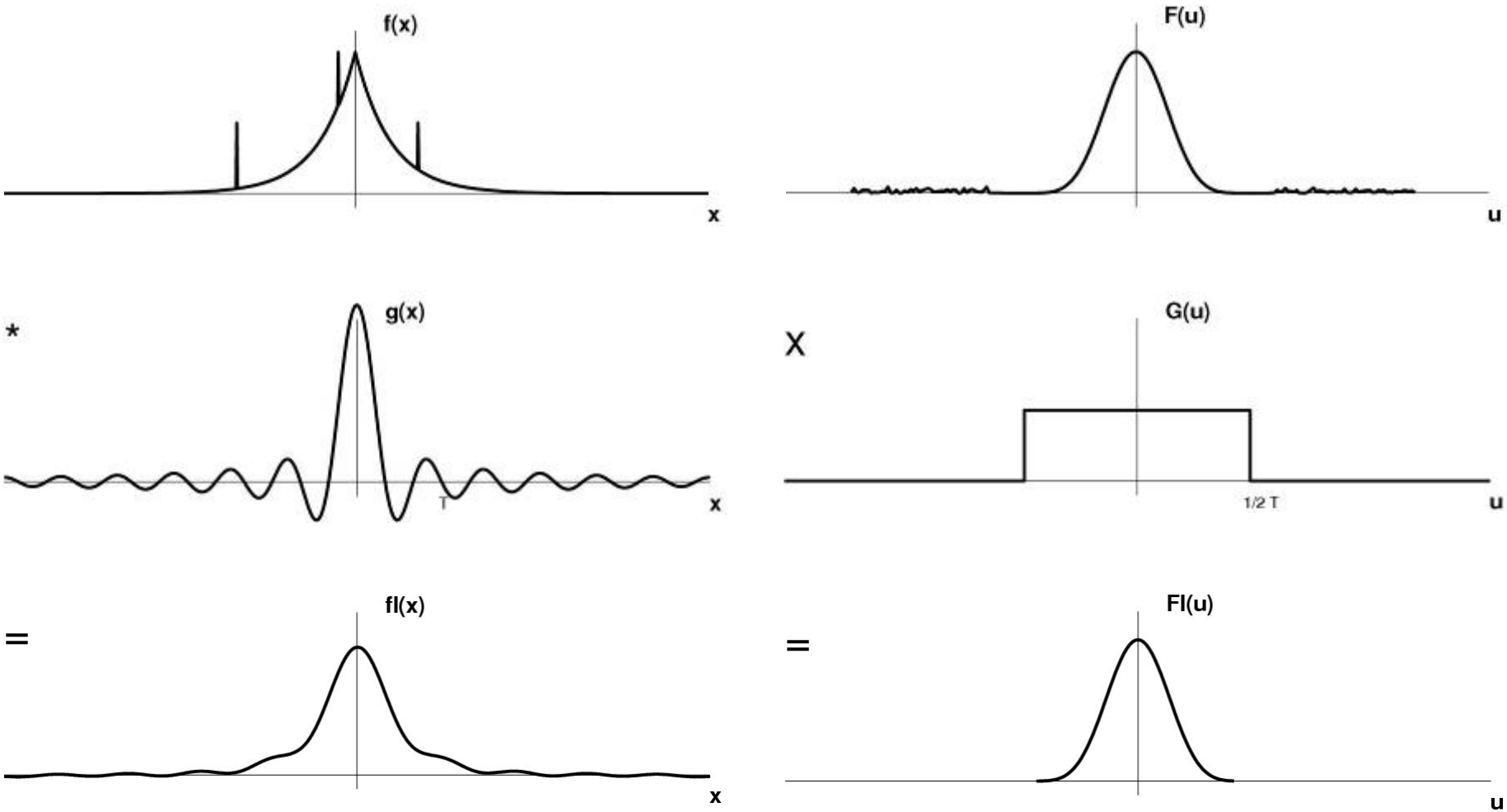
IEE 2103 Señales y Sistemas

Clase 6F: Transformada de Fourier Discreta
Aproximación a la FT

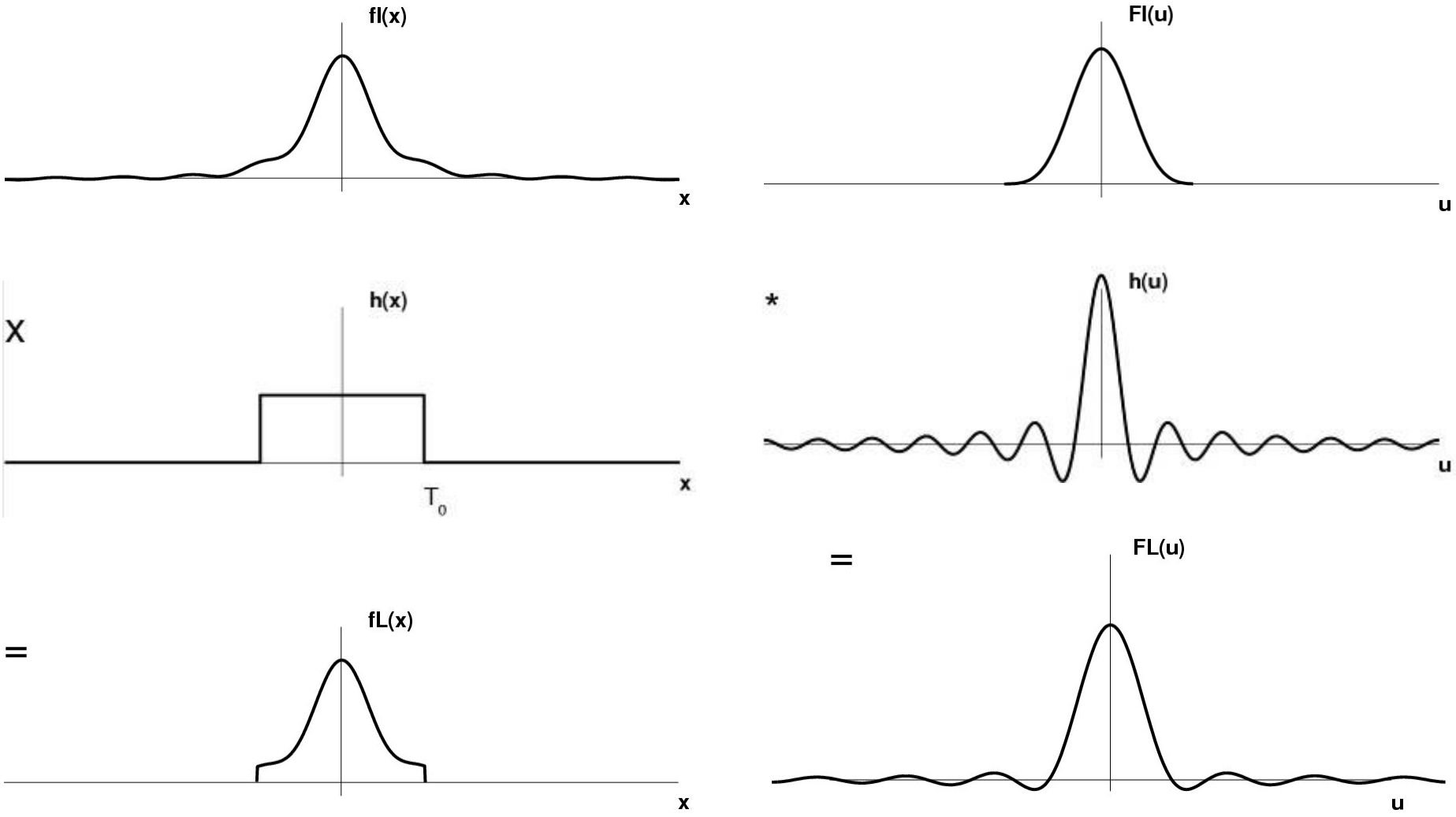
6.6 Aproximación a la FT

Filtro anti-aliasión



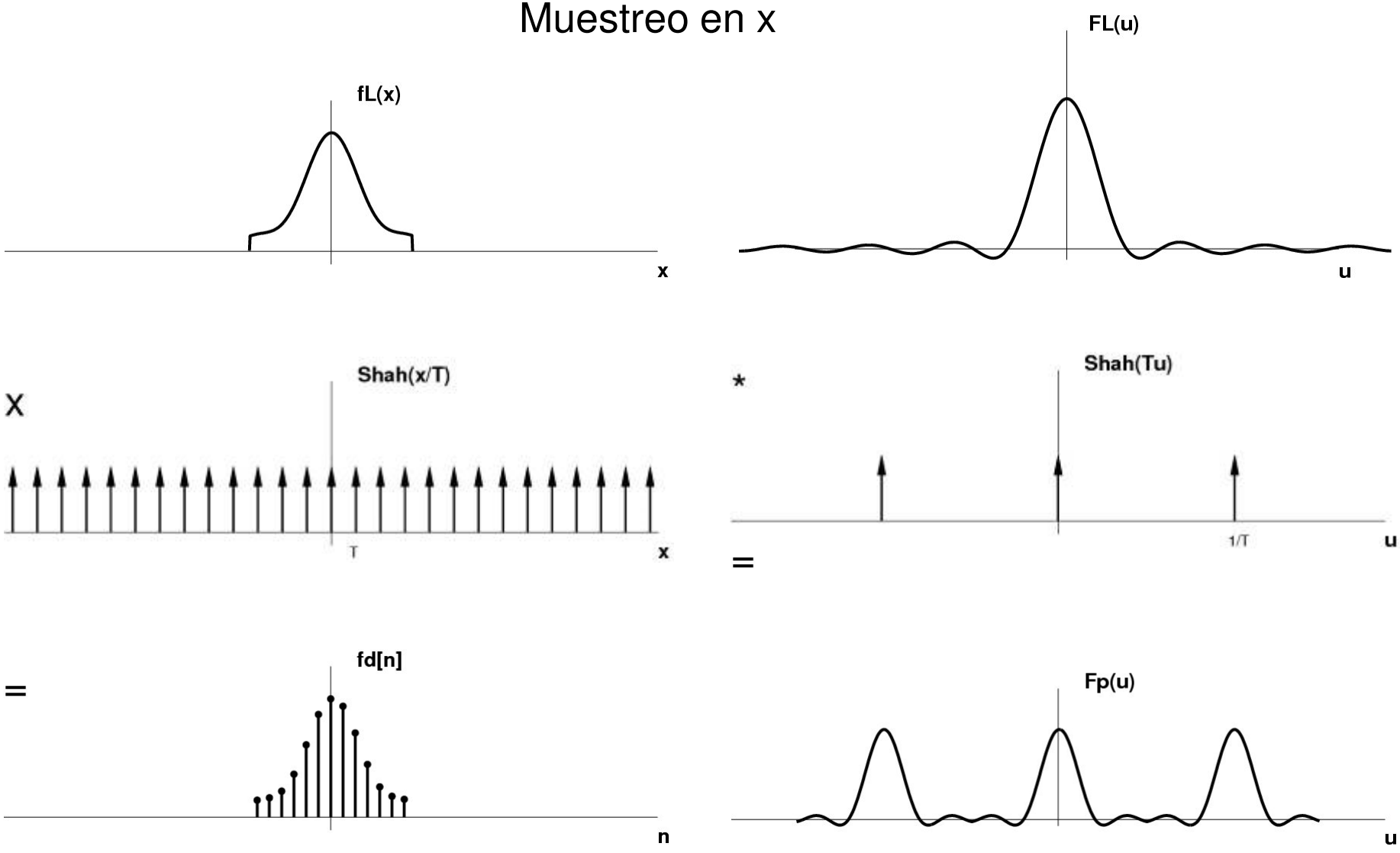
6.6 Aproximación a la FT

Apodización



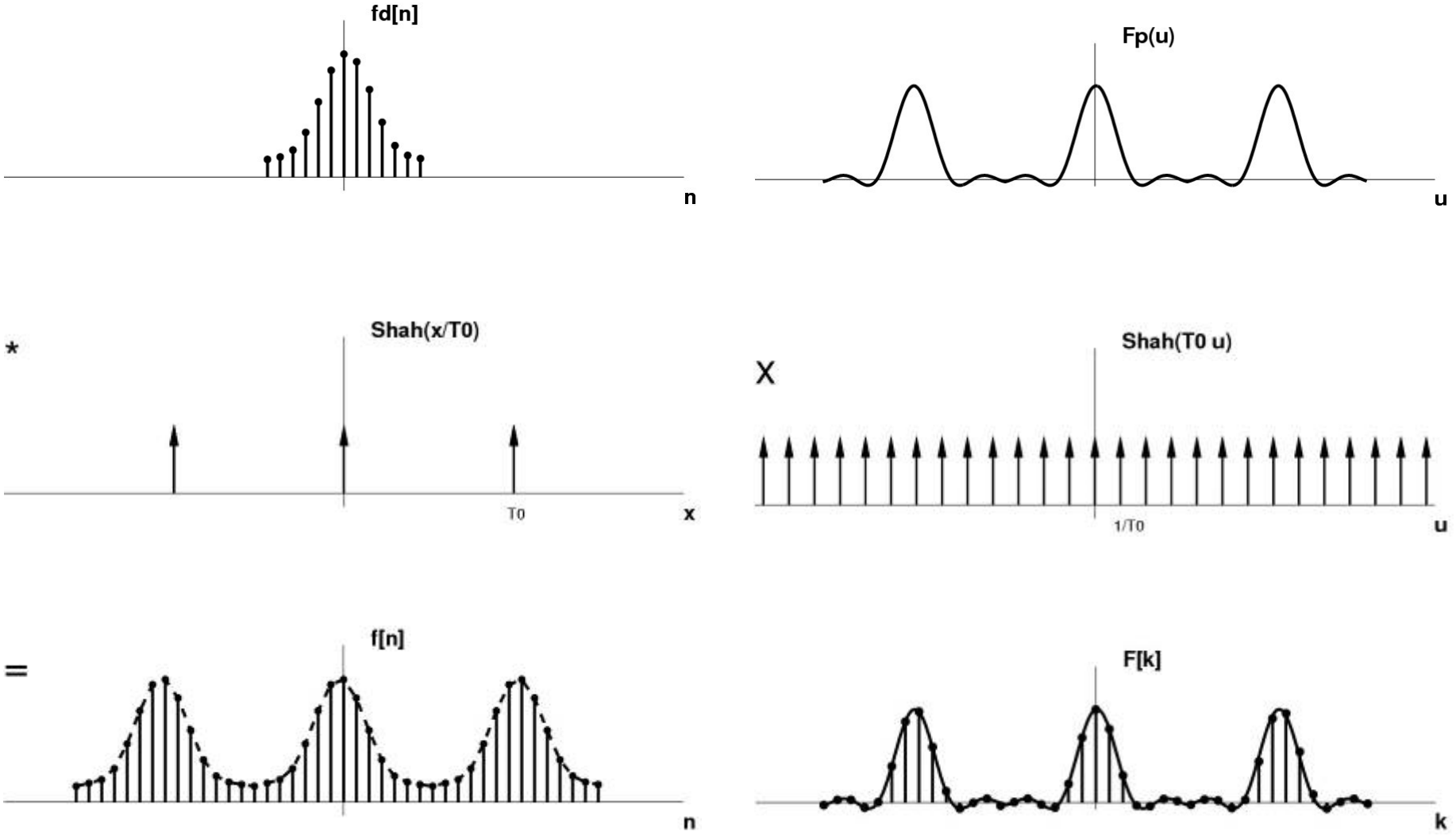
6.6 Aproximación a la FT

Muestreo en x



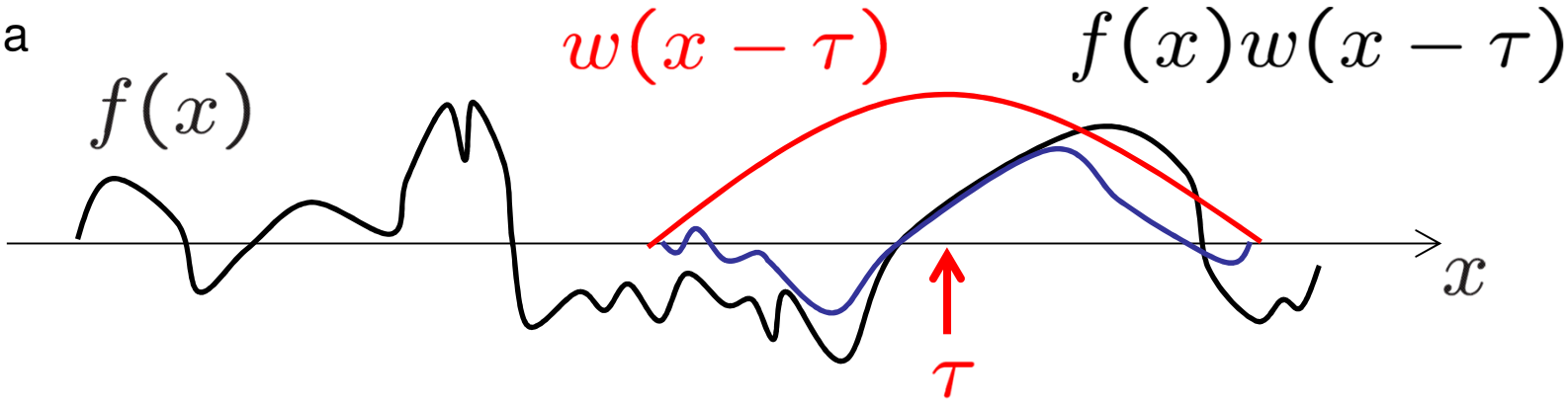
6.6 Aproximación a la FT

Muestreo en u



6.7 Short Time Fourier Transform

Continua

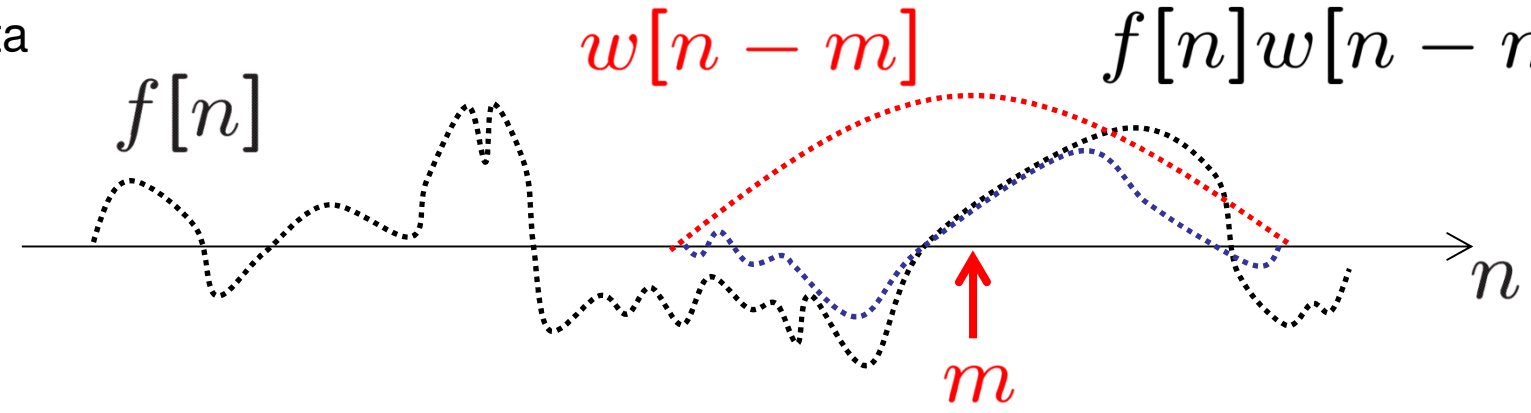


$$F(\tau, u) = \int_{-\infty}^{\infty} f(x)w(x-\tau)e^{-i2\pi ux}\,dx$$



6.7 Short Time Fourier Transform

Discreta

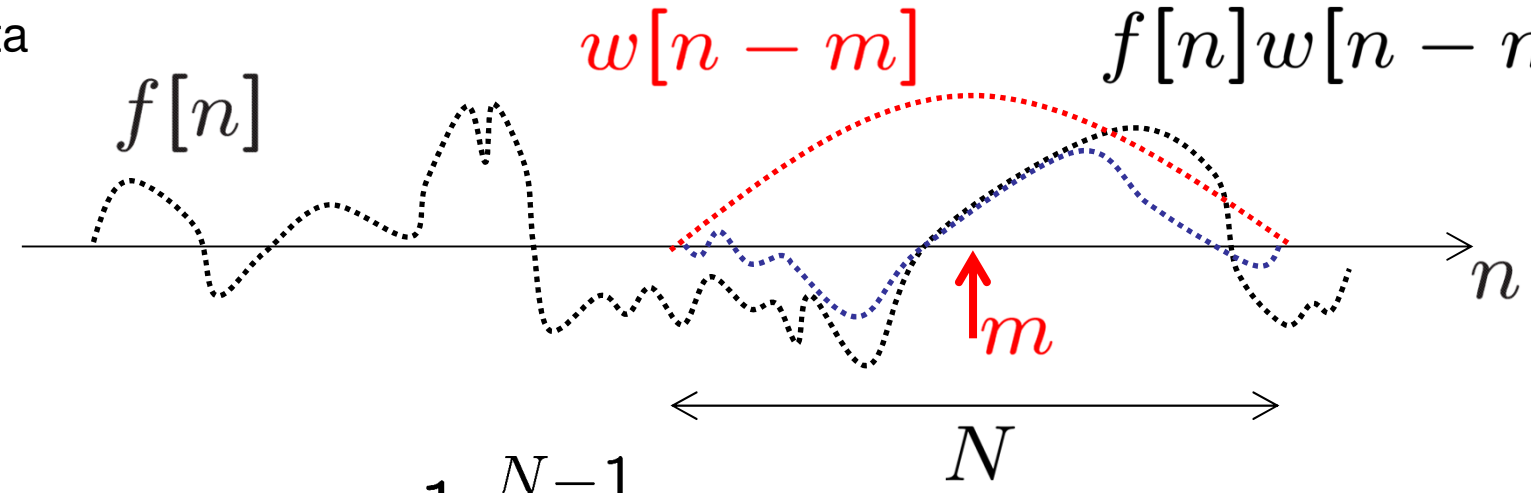


$$\tilde{F}_m(u) = \sum_{n=-\infty}^{\infty} f[n]w[n-m]e^{-i2\pi unT}$$



6.7 Short Time Fourier Transform

Discreta



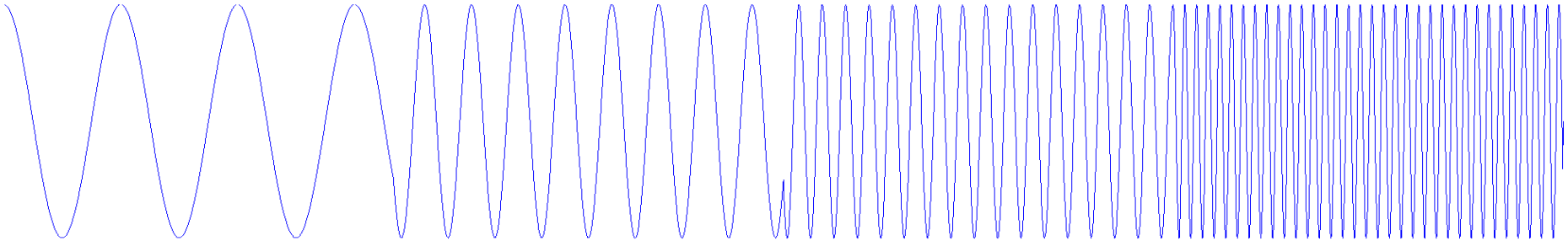
$$F[k,m] = \frac{1}{N}\sum_{n=0}^{N-1} f[n]w[n-m]e^{-i2\pi kn/N}$$



6.7 Short Time Fourier Transform

$$x(t) = \begin{cases} \cos(2\pi 10 t/\mathrm{s}) & 0\,\mathrm{s} \le t < 5\,\mathrm{s} \\ \cos(2\pi 25 t/\mathrm{s}) & 5\,\mathrm{s} \le t < 10\,\mathrm{s} \\ \cos(2\pi 50 t/\mathrm{s}) & 10\,\mathrm{s} \le t < 15\,\mathrm{s} \\ \cos(2\pi 100 t/\mathrm{s}) & 15\,\mathrm{s} \le t < 20\,\mathrm{s} \end{cases}$$

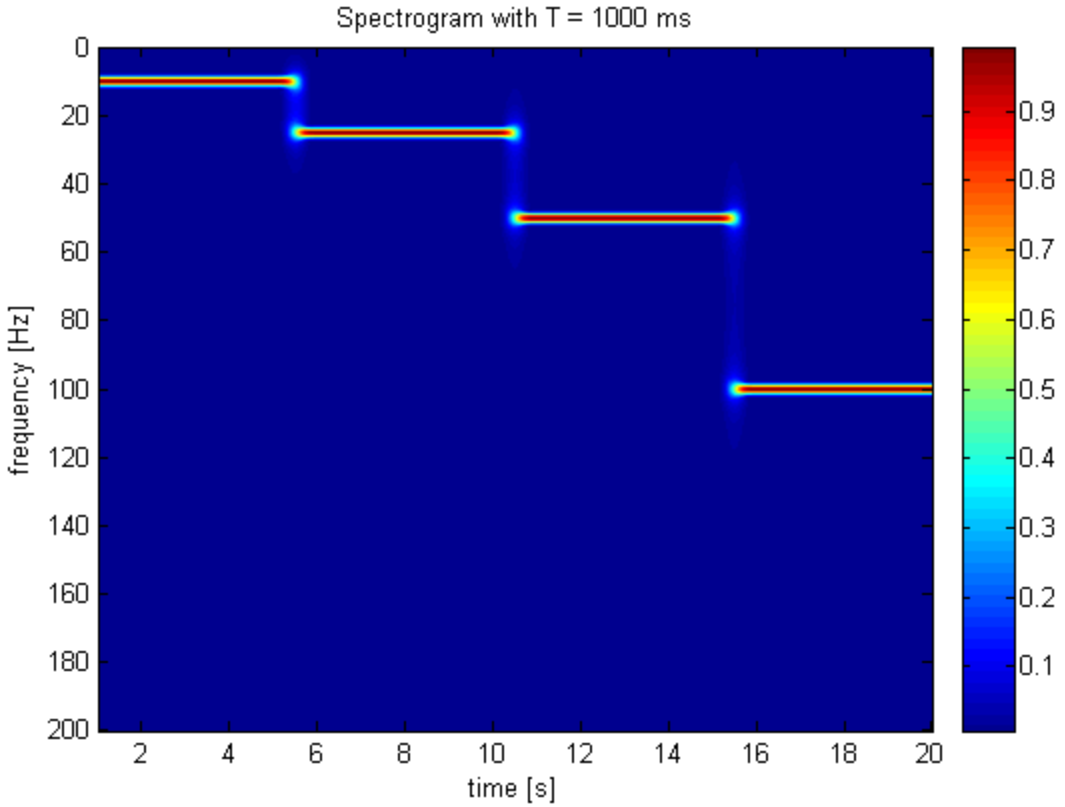
sampled at 400 Hz



6.7 Short Time Fourier Transform

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sampled at 400 Hz

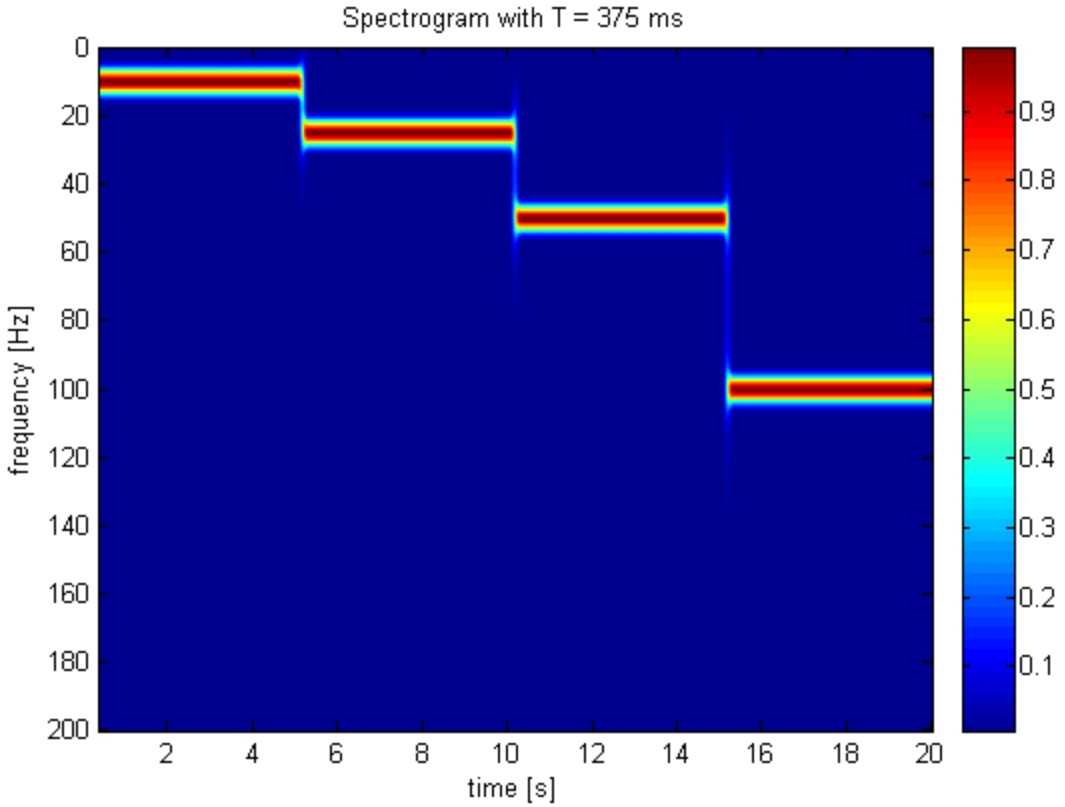


Wikipedia

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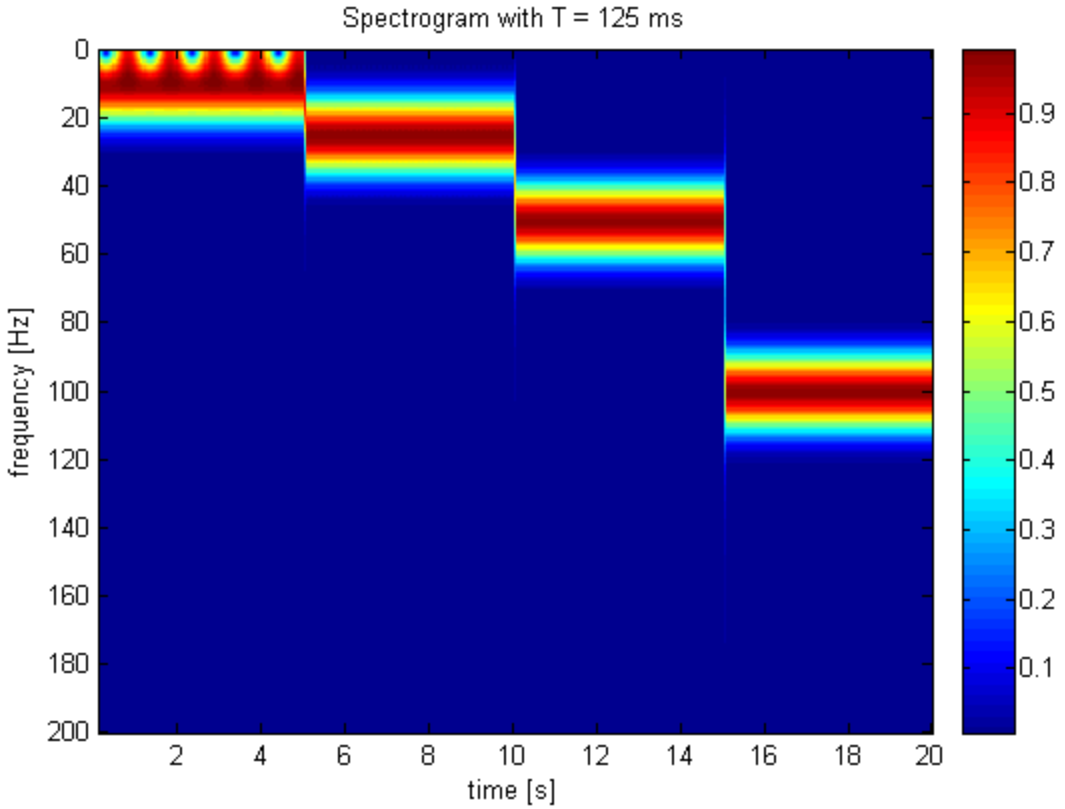


Wikipedia

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sampled at 400 Hz

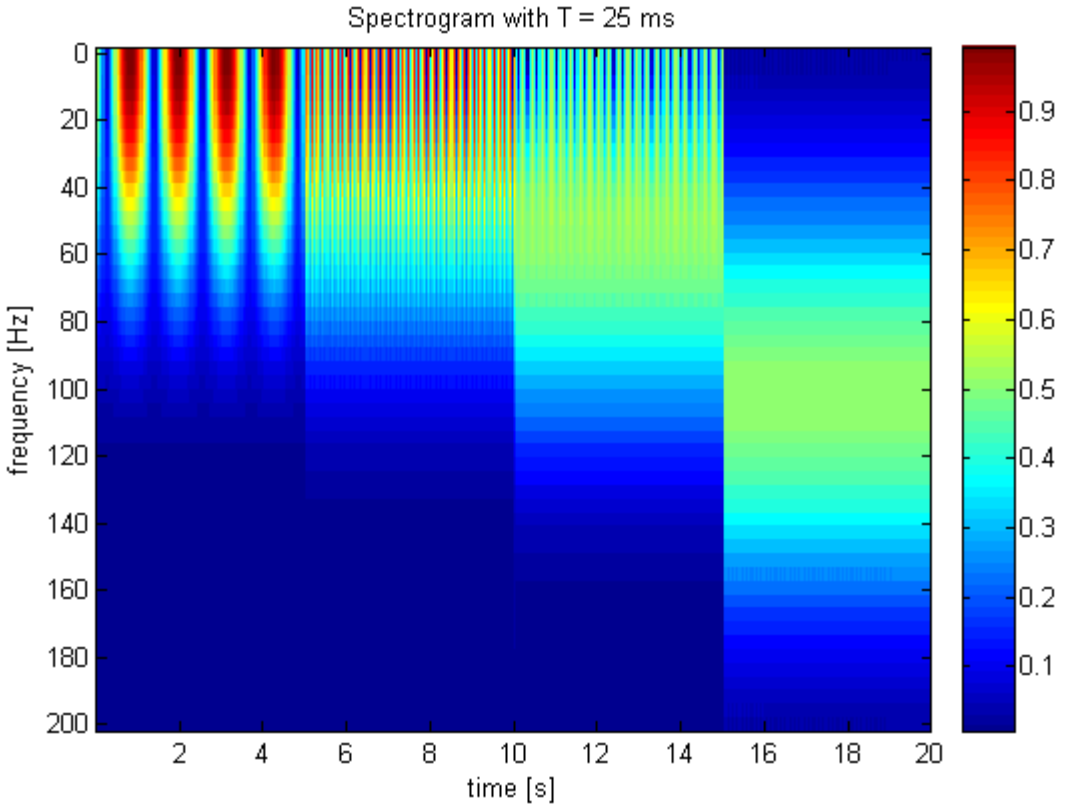


Wikipedia

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Wikipedia