Trasformate di Laplace.

$f(t)$ *causale*	$F(s) = \mathcal{L}(f)(s) = \int_0^{+\infty} f(t)e^{-st}\,dt$	
$H(t)$	$\frac{1}{s}$	
$H(t)t^n$	$\frac{n!}{s^{n+1}}$	$n \in \mathbb{N}$
$H(t)e^{\lambda t}\frac{t^{\alpha-1}}{\Gamma(\alpha)}$	$\frac{1}{(s-\lambda)^\alpha}$	$\operatorname{Re}\alpha > 0, \lambda \in \mathbb{C}$
$H(t)\frac{e^{\alpha t} - e^{\beta t}}{\alpha - \beta}$	$\frac{1}{(s-\alpha)(s-\beta)}$	$\alpha, \beta \in \mathbb{C},\ \alpha \neq \beta$
$H(t)\sin\omega t$	$\frac{\omega}{s^2+\omega^2}$	$\omega \neq 0$
$H(t)\cos\omega t$	$\frac{s}{s^2+\omega^2}$	$\omega \neq 0$
$H(t)\sinh\omega t$	$\frac{\omega}{s^2-\omega^2}$	$\omega \neq 0$
$H(t)\cosh\omega t$	$\frac{s}{s^2-\omega^2}$	$\omega \neq 0$
$H(t)\log t$	$\frac{\Gamma'(1) - \log s}{s}$	
$H(t)e^{-t^2}$	$\frac{\sqrt{\pi}}{2}e^{s^2/4}\operatorname{erfc}(s/2)$	
$H(t)\operatorname{erf}(t)$	$\frac{1}{s}e^{s^2/4}\operatorname{erfc}(s/2)$	
$H(t)\operatorname{erf}(\sqrt{t})$	$\frac{1}{s\sqrt{s+1}}$	
$H(t)J_0(at)$	$\frac{1}{\sqrt{s^2+a^2}}$	$a > 0$
$H(t)J_0(2\sqrt{at})$	$\frac{e^{-s/a}}{s}$	$a > 0$

La funzione Γ di Eulero.

$$\Gamma(\lambda) := \int_0^{+\infty} t^{\lambda-1} e^{-t}\, dt, \quad \operatorname{Re}\lambda > 0;$$

$$\Gamma(\lambda+1) = \lambda\Gamma(\lambda), \quad \lambda \in \mathbb{C} \setminus \{0, -1, -2, \dots, -n, \dots, \}$$

$$\Gamma(n) = (n-1)! \quad n = 1, 2, \dots$$

$$\Gamma(\tfrac{1}{2}) = \sqrt{\pi}, \quad \Gamma(n+1/2) = \frac{1 \cdot 3 \cdot 5 \dots (2n-1)}{2^n}\sqrt{\pi} = \frac{(2n)!}{2^{2n}\, n!}\sqrt{\pi}$$

$$\Gamma(\lambda)\Gamma(1-\lambda) = \frac{\pi}{\sin \pi\lambda}$$

$$\Gamma'(1) = -\gamma = \lim_{n \uparrow +\infty} \Big(\log n - \sum_{k=1}^{n} \frac{1}{k} \Big)$$

Error functions

$$\operatorname{erf} t = \tfrac{2}{\sqrt{\pi}} \int_0^t e^{-s^2}\, ds, \quad \operatorname{erfc} t = 1 - \operatorname{erf} t = \tfrac{2}{\sqrt{\pi}} \int_t^{=\infty} e^{-s^2}\, ds$$

Funzioni di Bessel.

$$J_\nu(t) := \sum_{n=0}^{+\infty} (x/2)^\nu \frac{(-1)^n (x/2)^{2n}}{n!\Gamma(n+\nu+1)}$$

$$J_\nu'' + \tfrac{1}{t} J_\nu' + (1 - \tfrac{\nu^2}{t^2}) J_\nu = 0$$