

C.04 Laplace transforms

The definition of the one-side Laplace and inverse Laplace transforms follow.

Definition C.1: Laplace transforms (one-sided)

Laplace transform \mathcal{L} :

$$\mathcal{L}(y(t)) = Y(s) = \int_0^{\infty} y(t)e^{-st} dt. \quad (1)$$

Inverse Laplace transform \mathcal{L}^{-1} :

$$\mathcal{L}^{-1}(Y(s)) = y(t) = \frac{1}{2\pi j} \int_{\sigma-j\infty}^{\sigma+j\infty} Y(s)e^{st} ds. \quad (2)$$

See [Table lap.1](#) for a list of properties and common transforms.

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Complex analysis