C.5 Laplace Transforms

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

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

Laplace transform $\mathcal{L}$:

$$\mathcal{L}(y(t)) = Y(s) = \int_0^\infty y(t) e^{-st} \, dt. \tag{C.17}$$

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

$$\mathcal{L}^{-1}(Y(s)) = y(t) = \frac{1}{2\pi j} \int_{\sigma - j\infty}^{\sigma + j\infty} Y(s) e^{st} \, ds. \tag{C.18}$$

See table B.1 for a list of properties and common transforms.

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