formulaire Signaal verwerking

$$f(t) = a_0 + \sum (a_n \cos n\omega t + b_n \sin n\omega t)$$

$$\begin{cases} f(t) = \sum_{-\infty}^{+\infty} C_n e^{jn\omega t} \\ C_n = \frac{1}{T} \int_{-T/2}^{+T/2} f(t) e^{-jn\omega t} dt \end{cases}$$

$$\begin{cases} f(t) = \frac{1}{2\pi} \int_{-\infty}^{+\infty} F(j\omega) e^{+j\omega t} d\omega \\ F(j\omega) = \int_{-\infty}^{+\infty} f(t) e^{-j\omega t} dt \end{cases}$$

$$\begin{cases} \int_{-\infty}^{+\infty} f(t) g(t) dt = \frac{1}{2\pi} \int_{-\infty}^{+\infty} F(j\omega) G^*(j\omega) d\omega \\ \mathcal{F}\{R_{ff}\} = \| F(j\omega) \|^2 \end{cases}$$

$$\begin{cases} \delta(t-\tau) \leftrightarrow e^{-j\omega\tau} \\ e^{j\omega_0 t} \leftrightarrow 2\pi \delta(\omega - \omega_0) \\ u(t) \leftrightarrow \frac{1}{j\omega} + \pi \delta(\omega) \end{cases}$$

$$\begin{cases} f(t) = \sum_{-\infty}^{+\infty} F[n] e^{jn\omega_0 t} \\ F[n] = \frac{1}{T} \int_{-T/2}^{+T/2} f(t) e^{-jn\omega_0 t} dt \end{cases}$$

$$\begin{cases} X[n] = \sum_{k=0}^{N-1} x[k] W_N^{kn} \quad n = 0, \dots, N-1 \\ x[k] = \frac{1}{N} \sum_{n=0}^{N-1} X[n] W_N^{-kn} \quad k = 0, 1, \dots, N-1 \end{cases}$$

$$\begin{cases} t \leftrightarrow \frac{zT}{(z-1)^2} \\ t^2/2 \leftrightarrow \frac{z(z+1)T^2}{2(z-1)^3} \\ e^{-at} \leftrightarrow \frac{z}{z - e^{-aT}} \\ te^{-at} \leftrightarrow \frac{zTe^{-aT}}{(z-e^{-aT})^2} \end{cases}$$

$$\text{uit}(t) = \frac{T(z)}{N(z)} \text{ in}(t).$$