5.3 (b)

Sonntag, 14. November 2021 17:05

(i) $\frac{1}{3}\left(\tilde{y}_{n-1} + \tilde{y}_n + \tilde{y}_{n+1}\right)$

$n=1: \frac{1}{3}(\tilde{y}_0 + \tilde{y}_1 + \tilde{y}_2)$

$n=2: \frac{1}{3}(\tilde{y}_1 + \tilde{y}_2 + \tilde{y}_3) \Rightarrow$

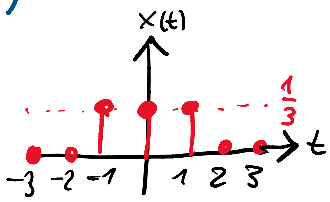
$n=3: \frac{1}{3}(\tilde{y}_2 + \tilde{y}_3 + \tilde{y}_4)$

$n=1: \frac{1}{3}(y_3 + y_1 + y_2)$

$n=2: \frac{1}{3}(y_1 + y_2 + y_3)$

$n=3: \frac{1}{3}(y_2 + y_3 + y_1)$

$x(t) := \frac{1}{3} \cdot \mathbb{1}_{\{-1,0,1\}}(t)$



$, t \in \mathbb{Z}$

$x \in \mathbb{R}^e \Rightarrow x = \begin{pmatrix} x_1 \\ \vdots \\ x_e \end{pmatrix}$ $x(-1)$ not defined.

additionally: $(x \circledast y)(n) = \sum_{k=1}^{e} x(k)\tilde{y}(n+1-k) \to x(-1)$ does not appear.

(ii) The zero padding must be infinite $\not$

$\tilde{y}$ would not be periodic