

Wiener Deconvolution Filter

f_11-18.mcd

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i := 0..127 j := 0..64 s := 0..64 f_{max} ≡ 64 A ≡ 30 N0 ≡ 1 C ≡ 1 σ₁ ≡ 20 τ₁ ≡ 0 σ₂ ≡ 21 τ₂ ≡ 0

Define signal and noise spectra and the MTF:

$$P_{s_j} := A \cdot \exp\left[\frac{-(j - \tau_1)^2}{2 \cdot \sigma_1^2}\right] \qquad P_{n_j} := N0 \qquad F_s := \left(\frac{1}{.571}\right) \cdot \left(\operatorname{acos}\left(\frac{s}{65}\right) - \sin\left(\operatorname{acos}\left(\frac{s}{65}\right)\right)\right)$$

And the Wiener filter transfer function is:

$$H_j := \frac{F_j \cdot P_{s_j}}{(F_j)^2 \cdot P_{s_j} + P_{n_j}}$$

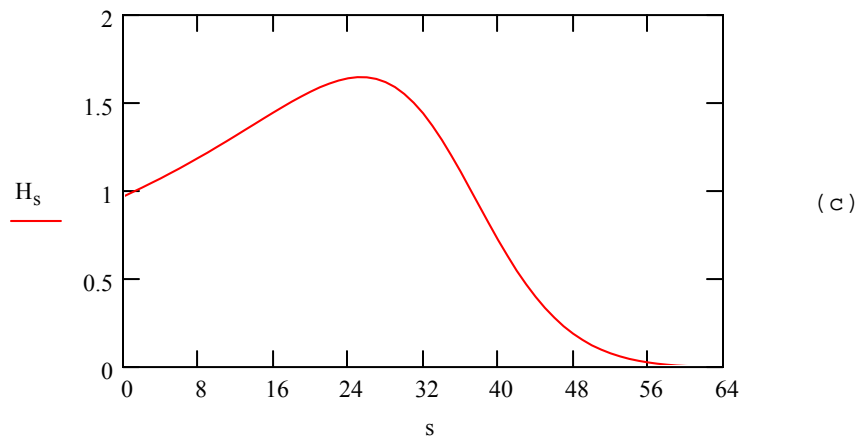
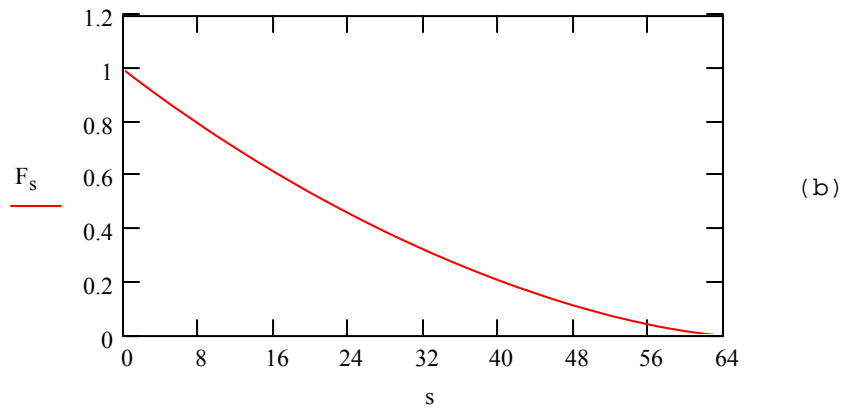
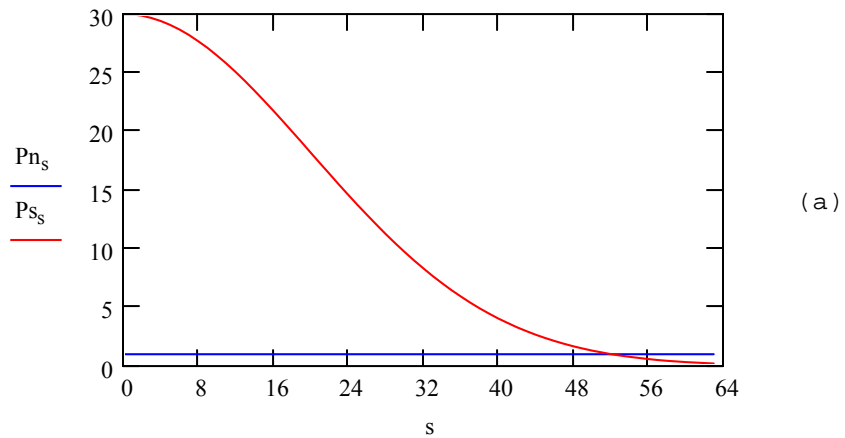


Figure 11-18 Wiener deconvolution