

Joint Carrier Frequency Offset and Channel Estimation for OFDM Systems via the EM Algorithm in the presence of very high mobility

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There are two typos in Eq. (23) and Eq. (24). The corrections are made in red color.

Forward recursion: Measurement Update Equations (MUE): Eq. (23) should read:

$$\begin{aligned} \mathbf{K}_k &= \mathbf{S}_{k|k-1}^{(i)} \mathcal{K}_k^H(\hat{\nu}^{(i)}) \left(\mathcal{K}_k(\hat{\nu}^{(i)}) \mathbf{S}_{k|k-1}^{(i)} \mathcal{K}_k^H(\hat{\nu}^{(i)}) + \sigma^2 \mathbf{I}_N \right)^{-1} \\ \hat{\mathbf{c}}_{k|k}^{(i)} &= \hat{\mathbf{c}}_{k|k-1}^{(i)} + \mathbf{K}_k \left(\mathbf{y}_k - \mathcal{K}_k(\hat{\nu}^{(i)}) \hat{\mathbf{c}}_{k|k-1}^{(i)} \right) \\ \mathbf{S}_{k|k}^{(i)} &= \mathbf{S}_{k|k-1}^{(i)} - \mathbf{K}_k \mathcal{K}_k(\hat{\nu}^{(i)}) \mathbf{S}_{k|k-1}^{(i)} \end{aligned}$$

Backward recursion: Eq. (24) should read:

$$\begin{aligned} \mathbf{J}_k &= \mathbf{S}_{k-1|k-1}^{(i)} \mathcal{A}^H \mathbf{S}_{k|k-1}^{(i)} - \mathbf{1} \\ \hat{\mathbf{c}}_{k-1|K}^{(i)} &= \hat{\mathbf{c}}_{k-1|k-1}^{(i)} + \mathbf{J}_k \left(\hat{\mathbf{c}}_{k|K}^{(i)} - \hat{\mathbf{c}}_{k|k-1}^{(i)} \right) \\ \mathbf{S}_{k-1|K}^{(i)} &= \mathbf{S}_{k-1|k-1}^{(i)} + \mathbf{J}_k \left(\mathbf{S}_{k|K}^{(i)} - \mathbf{S}_{k|k-1}^{(i)} \right) \mathbf{J}_k^H \end{aligned}$$