Original publications

Errata

Publication I

- Equation (4) should read:

$$\mathbf{D}_{ij}(k) = \mathbf{F}_N^H \widetilde{\mathbf{H}}_{ij}(k)\mathbf{F}_N = \mathrm{diag}\left\{\left\{\sum_{r=0}^{L_h-1} h_{i,j,r}(k)\exp\left(-j\frac{2\pi nr}{N}\right)\right\}_{n=0,\ldots,N-1}\right\}. \quad (4)$$

Publication II

- In order to match better the physical reality, a block dependent phase term needs to be added in equations (2) and (19). Consequently, the $N \times 1$ received signal vector with carrier frequency offset modeled at the transmitter side should be rewritten as:

$$\mathbf{r}_\epsilon(k) = e^{j2\pi\epsilon kP/N}\mathbf{R}_{\mathrm{CP}}\mathbf{H}(k)\tilde{\mathbf{C}}_\epsilon\mathbf{T}_{\mathrm{CP}}\tilde{\mathbf{x}}(k) + \mathbf{w}(k), \quad (2)$$

  where the $P \times P$ matrix $\tilde{\mathbf{C}}_\epsilon$ is defined as $\tilde{\mathbf{C}}_\epsilon = \mathrm{diag}\{[1, e^{j2\pi\epsilon/N}, \ldots, e^{j2\pi(P-1)\epsilon/N}]\}$ and matrices $\mathbf{T}_{\mathrm{CP}}$ and $\mathbf{R}_{\mathrm{CP}}$ perform cyclic prefix insertion and removal, respectively. Then, the $N \times 1$ received signal vector after CP removal with carrier frequency offset modeled at the receiver side should be rewritten as:

$$\mathbf{r}_\epsilon(k) = e^{j2\pi\epsilon(kP+L_{CP})/N}\mathbf{C}_\epsilon\widetilde{\mathbf{H}}(k)\tilde{\mathbf{x}}(k) + \mathbf{w}(k). \quad (19)$$

  As a consequence, the system model is modified to account for this phase term. Other equations need to be updated accordingly, as done in Chapter 5 of this thesis.

- Equation (4) should read:

$$\mathbf{D}(k) = \mathrm{diag}\left\{\left\{\sum_{l=0}^{L_h-1} h_l(k)\exp\left(-j\frac{2\pi nl}{N}\right)\right\}_{n=0,\ldots,N-1}\right\}. \quad (4)$$

Publication III

- As described above for Publication II, the received signal impaired by carrier frequency offset should include a block and CFO dependent phase term. Consequently, equations (6) and (7) should be replaced respectively by

$$\mathbf{r}_r(k) = \sum_{t=1}^{T} e^{j2\pi(kP+L_{\mathrm{CP}})\epsilon_{tr}(k)/N}\mathbf{R}_{\mathrm{CP}}\mathbf{C}_{tr}^{\epsilon}(k)\mathbf{H}_{tr}(k)\tilde{\mathbf{x}}_t(k) + \mathbf{w}_r(k), \quad r = 1, \ldots, R \quad (6)$$

$$\mathbf{r}_r(k) = \sum_{t=1}^{T} e^{j2\pi(kP+L_{\mathrm{CP}})\epsilon_{tr}(k)/N} \mathbf{R}_{\mathrm{CP}} \mathbf{C}_{tr}^{\epsilon}(k) \widetilde{\mathbf{X}}_t(k) \mathbf{h}_{tr}(k) + \mathbf{w}_r(k), \quad r = 1, \ldots, R. \quad (7)$$

The other equations need to be updated accordingly, as done in Chapter 5 of this thesis.

- The left-hand side of equation (12) should read $\tilde{\mathbf{X}}^{\epsilon}(k)$ instead of $\tilde{\mathbf{x}}^{\epsilon}(k)$.
- Page 187, equation (23) should read:

$$\mathbf{U}_{\mathrm{MMSE}}(k) = \sigma_a^2 \left[\mathbf{M}^H(k)\mathbf{M}(k) + \sigma^2 \mathbf{I}\right]^{-1} \mathbf{M}^H(k). \quad (23)$$

- Page 188, lines 35-36: $\mathbf{Rw}$ and $\mathbf{R}_w$ should both read $\mathbf{R}_{\mathbf{w}}$.

Publication V

- A phase term which depends on both the block index and the CFO needs to be added to equation (2) which becomes:

$$\mathbf{r}(k) = e^{j2\pi(kP+L_{\mathrm{CP}})\epsilon/N} \mathbf{C}_{\epsilon} \mathbf{u}(k) + \mathbf{w}(k). \quad (2)$$

Other equations need to be updated accordingly, as done in Chapter 6 of this thesis.

Publication VI

- Equation (11) should read:

$$\mathbf{x} \odot \mathbf{x} = \left(\sum_{k_1=1}^{N} x_{k_1} \mathbf{a}_{k_1} \right) \odot \left(\sum_{k_2=1}^{N} x_{k_2} \mathbf{a}_{k_2} \right). \quad (11)$$