Original publications

Errata

Publication I

- Equation (4) should read:

\[
D_{ij}(k) = F_N^H \tilde{H}_{ij}(k) F_N = \text{diag} \left\{ \sum_{r=0}^{L_h-1} h_{i,j,r}(k) \exp \left( -j \frac{2\pi n r}{N} \right) \right\}_{n=0,...,N-1}. \tag{4}
\]

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:

\[
r_r(k) = e^{j2\pi \epsilon k P / N} R_{cp} H(k) \tilde{C}_\epsilon T_{cp} \tilde{x}(k) + w(k), \tag{2}
\]

where the \( P \times P \) matrix \( \tilde{C}_\epsilon \) is defined as \( \tilde{C}_\epsilon = \text{diag} \{ 1, e^{j2\pi \epsilon / N}, ..., e^{j2\pi (P-1)\epsilon / N} \} \) and matrices \( T_{cp} \) and \( R_{cp} \) 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:

\[
r_r(k) = e^{j2\pi \epsilon (kP+L_{cp}) / N} C_\epsilon H(k) \tilde{x}(k) + w(k). \tag{19}
\]

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:

\[
D(k) = \text{diag} \left\{ \sum_{l=0}^{L_h-1} h_l(k) \exp \left( -j \frac{2\pi n l}{N} \right) \right\}_{n=0,...,N-1}. \tag{4}
\]

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

\[
r_r(k) = \sum_{t=1}^{T} e^{j2\pi (kP+L_{cp}) \epsilon_{tr}(k) / N} R_{cp} C_{tr}(k) H_{tr}(k) \tilde{x}_r(k) + w_r(k), \quad r = 1, \ldots, R \tag{6}
\]
\( r_r(k) = \sum_{t=1}^{T} e^{j2\pi(kP+L_{CP})\epsilon_t(k)/N} R_{CP} C_{tr}(k) \tilde{X}_t(k) h_{tr}(k) + w_r(k), \quad r = 1, \ldots, R. \) (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 \( \tilde{X}^r(k) \) instead of \( \tilde{x}^r(k) \).
- Page 187, equation (23) should read:
  \[
  U_{\text{MMSE}}(k) = \sigma_0^2 \left[ M^H(k) M(k) + \sigma^2 I \right]^{-1} M^H(k).
  \] (23)
- Page 188, lines 35-36: \( R_w \) and \( R_{w'} \) should both read \( R_w \).

**Publication V**

- A phase term which depends on both the block index and the CFO needs to be added to equation (2) which becomes:
  \[
  r(k) = e^{j2\pi(kP+L_{CP})\epsilon/N} C_v u(k) + w(k). \] (2)

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

**Publication VI**

- Equation (11) should read:
  \[
  x \odot x = \left( \sum_{k_1=1}^{N} x_{k_1} a_{k_1} \right) \odot \left( \sum_{k_2=1}^{N} x_{k_2} a_{k_2} \right). \] (11)