Corrections to Theoretical Analysis and Performance of OFDM Signals in Nonlinear AWGN Channels

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Due to the huge amount of equations, the original paper contains some typos, which were partially introduced by the authors and mostly by the editorial assistant formatting. Indeed, the editorial staff at that time was manually rewriting all the equations in LaTeX for papers submitted in different electronic formats.. Unfortunately we did not realize it, and consequently these typos were not identified during the final proof reading of the paper, which was actually based on a fax transmission. Thus, after being contacted from several readers, which were questioning the correctness of some results, we found necessary to report these typos to make the paper more accessible and useful. The most important typo, which could cause many problems in practical utilization of the results for the soft-limiter scenario, is related to the computation of the coefficients c_n in the power series expansion of equation (6). Indeed, all the coefficients $\{c_1,....,c_n\}$ (for the soft-limiter) in the original paper must be multiplied by the input signal power $2\sigma^2$. Consequently equations (28), (C.2) and (C.3) become

$$c_1=\frac{2\sigma^2}{2}\left[\frac{1}{2}\gamma\cdot e^{-\gamma}+\frac{1}{4}\sqrt{\pi\cdot\gamma}\cdot erfc\left(\sqrt{\gamma}\right)\right]^2$$

$$c_n=\frac{2\sigma^2}{n\;!\;(n+1)\;!}\left[\left(\frac{(2n)\;!}{2^{2n}\;n!}-\sum_{i=0}^{n-2}d_{i,n}\;\gamma^{i+1}\right)\gamma\,e^{-\gamma}+\right.$$
$$\left.+\;\frac{(2n)\;!}{2^{2n+1}\;n!}\sqrt{\pi\,\gamma}\;erfc\;\left(\sqrt{\gamma}\right)\right]^2 \quad ,n=2,\ldots,\infty \qquad (28)$$

$$c_n=\frac{2\sigma^2}{n+1}\cdot\left\{\int_0^{A/2\sigma^2}y\cdot e^{-y}\cdot L_n^{(1)}(y)\,dy+\frac{A}{\sqrt{2}\sigma}\cdot\right.$$
$$\left.\cdot\left[\int_0^{\infty}\sqrt{y}\cdot e^{-y}\cdot L_n^{(1)}(y)\,dy-\int_0^{A/2\sigma^2}\sqrt{y}\cdot e^{-y}\cdot L_n^{(1)}(y)dy\right]\right\}^2 \qquad \text{(C.2)}$$

$$c_n=\frac{2\sigma^2}{n!(n+1)!}\left[\frac{(2n)!}{n!}\frac{\sqrt{\pi\cdot\gamma}}{2^{n+1}}+\sum_{k=0}^{\infty}\frac{(n+k+1)!}{k!(k+2)!}\frac{(-1)^{k+1}}{(2k+3)}\cdot\gamma^{k+2}\right]^2 \qquad \text{(C.3)}\cdot$$

Moreover, the coefficients $d_{i,n}$ in (28) are expressed by (29), where the first sum starts from $p=i$, as correctly reported in (C.9) in the Appendix of the original paper.

Another typo is in eq. (7) where the exponent should be negative, as for a Rayleigh pdf, and as correctly reported in Appendix A (and not in Appendix I as stated two lines before eq.(7)). Moreover in Appendix A, for some weird reason $R_{s_d s_d}(\tau)$, become $R_{zz}(\tau)$ in the RHS of eq. (A.10)-(A.15).

A minor typo is in the second row of equations (9) where, accordingly to equation (3), the coefficient α^2 must be replaced by $|\alpha|^2$.

Another typo is in (31) where the quantity into brackets must be raised to the power of (-1), that is

$$obo=\gamma\left(1-e^{-\gamma}\right)^{-1} \qquad (31).$$

This typo should be evident because the output back off obo for a unitary clipping device is always greater than its input back off γ.

Minor typos are also in the first and second line of eq. (4) where $R_{ss_d}(0)$ and $E\left\{s_d(t)s(t)^*\right\}$ should replace $R_{s_d s}(0)$ and $E\left\{s_d^*(t)s(t)\right\}$, respectively.

Two other evident typos are before eq. (12) where the angular frequency should be $w_k=2\pi k/T_b$, and in the second line of eq.(14) where the imaginary unit j is missing in the exponent and mT_s should replace m_s.

A minor error is that in eq. (15), (16) and (D.3) L_{act} should be replaced by L_{act}/T_b^2. Anyway this error has no effect in the final results (e.g. eqs. (17)-(19)) because it cancels out in the ratios.

It is also clear from eq. (9) that c_o should replace c_o^2 in eq. (17).

Some other evident typos, which are clear from the context, are as following:

- k^{-i} should replace k^i in RHS of eq. (C.5).
- E should replace e as the expectation operator in (D.3)
- $(p-k)$ should replace $p(-k)$ in (D.3)
- the imaginary unit j is missing in many exponents of equation (D.3).