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Correction to: On the achievable rate of bandlimited continuous-time AWGN channels with 1-bit output quantization

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The original article can be found online at https://doi. org/10.1186/s13638-021-01892-9.

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Following publication of the original article [1], it was brought to our attention that the article had published with incorrect versions of figures (for Figs. 3, 4, 5, 6) and with a number of incorrectly formatted equations.

The figures and the formatting of the equations has since been corrected in the original article, and the updated figures can be found in this correction for reference.

The publisher apologizes for any inconvenience caused.



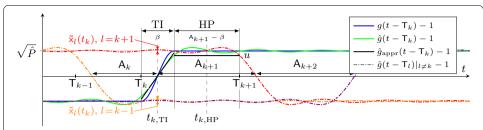


Fig. 3 ISI model: original $g(t-\mathbf{T}_k)-1$, filtered $\hat{g}(t-\mathbf{T}_k)-1$, and interfering pulses $\hat{g}(t-\mathbf{T}_l)-1|_{l\neq k}$. The ISI at a time t_k is the superposition of the contribution of all pulses $\hat{g}(t-\mathbf{T}_l)-1$, where $l\neq k$

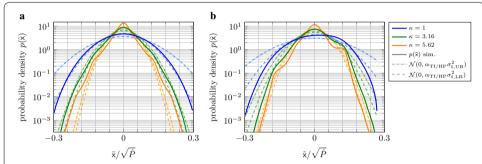


Fig. 4 Numerically obtained distribution of $\tilde{\mathbf{x}}(t_k)$ for \mathbf{a} $t_k = t_{k,\Pi}$ and \mathbf{b} $t_k = t_{k,HP}$ (solid lines) and bounds on the distribution (dashed and dashdotted lines) for different κ . For lower-bounding the mutual information rate, a Gaussian distribution with the obtained upper bound on the variance of $\tilde{\mathbf{x}}(t_k)$ is suitable for $\kappa \lesssim 3$

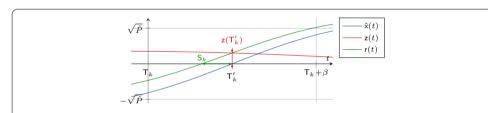


Fig. 5 Transformation from amplitude noise $\mathbf{z}(\mathsf{T}'_k)$ to shift error S_k for an SNR of 10 dB. In the transition interval $[\mathsf{T}_k,\mathsf{T}_k+\beta]$, the transmitted signal is represented by the filtered transmit waveform $\hat{f}(t)$

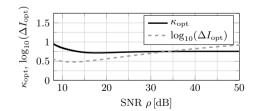


Fig. 6 Optimal ratio $\kappa = W \lambda^{-1}$ over the SNR and corresponding ratio $C_{\text{AWGN}}/I'_{\text{LB}}(\mathbf{A}; \mathbf{D})$, valid for $\rho \gtrsim 10$ dB. The value of κ that minimizes the loss w.r.t. the AWGN-capacity is approximately 0.75 for most of the mid-to-high SNR regime

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References

1. S. Bender, M. Dörpinghaus, G.P. Fettweis, On the achievable rate of bandlimited continuous-time AWGN channels with 1-bit output quantization. J. Wireless Com. Network **2021**, 54 (2021). https://doi.org/10.1186/ s13638-021-01892-9

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