

Corrections on “Cooperative Communications Using Reliability-Forwarding Relays”

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In the paper above [1], from (12) and (13), the variance of z given \mathbf{g} and $s = -\sqrt{P_s}$ is obtained as

$$\begin{aligned} \mathbf{Var}_{x,w}[z | s = -\sqrt{P_s}, \mathbf{g}] \\ = \sum_{i=1}^M |\alpha_i|^2 \left(|g_i|^2 P_r \left(\frac{4p(1-p-q) + q(1-q)}{1-q} \right) + \sigma_w^2 \right) \end{aligned}$$

instead of (14). This correction affects (15), (16), (17) and finally the optimal combining coefficient $\alpha_{\text{MDC},i}$ given in (18) which should be modified as

$$\alpha_{\text{MDC},i} = \frac{2cg_i^* (2p + q - 1) \sqrt{\frac{P_r}{1-q}}}{|g_i|^2 P_r \left(\frac{4p(1-p-q) + q(1-q)}{1-q} \right) + \sigma_w^2}, \quad 1 \leq i \leq M$$

Note that, the approximated maximum deflection coefficient given in Lemma 2 should be similarly corrected and (32) should be modified as follows

$$d_{\text{def,max}}^2 = \frac{4P_r (2p + q - 1)^2}{P_r [4p(1-p-q) + q(1-q)] + \sigma_w^2 (1-q)}$$

REFERENCES

- [1] T.-Y. Wang and J.-Y. Wu, “Cooperative communications using reliability-forwarding relays,” *IEEE Trans. Commun.*, vol. 61, no. 5, pp. 1776–1785, May 2013.

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