Correction to
Weak Flip Codes and their Optimality
on the Binary Erasure Channel

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In [1, Sec. V.C], we claim that the optimal codes for the BSC for $\mathsf{M} = 3$ and $\mathsf{M} = 4$ have been derived in [2] and are weak flip codes of type

$$\mathbf{t}^*_{\text{weak}} = \begin{cases} [k+1, k, k-1] & \text{if } n \bmod 3 = 0 \\ [k+1, k, k] & \text{if } n \bmod 3 = 1 \\ [k+1, k+1, k] & \text{if } n \bmod 3 = 2. \end{cases} \quad (1)$$

Unfortunately, this is not completely correct. The codes (1) are only proven to be globally optimal for $\mathsf{M} = 3$. In the case of $\mathsf{M} = 4$, they are only conjectured to be globally optimal. We do prove, however, that (1) is locally optimal when constructing the codes recursively, and that (1) is optimal among all *linear* codes.

We apologize for the wrong claim.

References

[1] H.-Y. Lin, S. M. Moser, and P.-N. Chen, "Weak flip codes and their optimality on the binary erasure channel," *IEEE Trans. Inf. Theory*, vol. 64, no. 7, pp. 5191–5218, Jul. 2018.

[2] P.-N. Chen, H.-Y. Lin, and S. M. Moser, "Optimal ultrasmall block-codes for binary discrete memoryless channels," *IEEE Trans. Inf. Theory*, vol. 59, no. 11, pp. 7346–7378, Nov. 2013.