Corrections to "A 0.02 mm^2 59.2 dB SFDR 4th-Order SC LPF With 0.5-to-10 MHz Bandwidth Scalability Exploiting a Recycling SC-Buffer Biquad"

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In the above paper [1], the authors found that the z-domain transfer function in (3) should be corrected as

$$\frac{V_{outa,b}(z)}{V_{in}(z)} = \pm\frac{(1-\alpha_1)(1-\alpha_2)z^{-2}}{\alpha_1 z^{-2} - (2\alpha_1+\alpha_2-\alpha_1\alpha_2)z^{-1}+1}$$

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where $V_{outa}(z)$ goes with negative sign and $V_{outb}(z)$ goes with positive sign. As a result, the s-domain transfer function in (4) should be modified as

$$\frac{V_{outa,b}(s)}{V_{in}(s)} = \pm\frac{1}{s^2 T_c^2 \frac{c_{i1}}{c_{s1}}\left(\frac{c_{i2}+c_{s2}}{c_{s2}}\right) + sT_c\frac{c_{i2}}{c_{s2}} + 1}$$

with

$$\omega_{\rm n} = \frac{f_{clk}}{\sqrt{\frac{c_{i1}}{c_{s1}}\left(\frac{c_{i2}+c_{s2}}{c_{s2}}\right)}} \quad \text{and} \quad Q = \sqrt{\frac{c_{i1}}{c_{s1}}\frac{c_{s2}(c_{i2}+c_{s2})}{c_{i2}^2}}.$$

References

[1] Y. Zhao, P.-I. Mak, R. P. Martins, and F. Maloberti, "A 0.02 mm^2 59.2 dB SFDR 4th-order SC LPF with 0.5-to-10 MHz bandwidth scalability exploiting a recycling SC-buffer biquad," *IEEE J. Solid-State Circuits*, vol. 50, no. 9, pp. 1988–2001, Sep. 2015.