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# Correction to “Analytical Thermal Model for Self-Heating in Advanced FinFET Devices With Implications for Design and Reliability”

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In our paper [1], there was an error in (50), which is rewritten here as

$$T_{3g}(y) = T_{3g0} \frac{\cosh(m_{3g} \cdot (W_{SD}/2 - y))}{\cosh(m_{3g} \cdot (W_{SD}/2 - W_{fin}/2))}. \quad (1)$$

The correct expression should be

$$T_{3g}(y) = T_0 + (T_{3g0} - T_0) \frac{\cosh(m_{3g} \cdot (W_{SD}/2 - y))}{\cosh(m_{3g} \cdot (W_{SD}/2 - W_{fin}/2))} \quad (2)$$

where  $T_0$  is the reference constant temperature defined at the bottom of the buried oxide (BOX), and all other terms were defined in [1].

This error does not affect the results in [1, Fig. 21], as the actual source code does not contain the error.

It is also worthwhile to note that, as stated in [1, Fig. 9], all equations in [1] were derived with the assumption of the following

boundary conditions: constant temperature of  $T_0$  at the bottom of the BOX and adiabatic boundary condition (or symmetry boundary condition) at the four sidewalls and the top. For transient analysis, temperature of  $T_0$  was assumed to be everywhere at time zero.

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## REFERENCES

- [1] C. Xu, S. K. Kolluri, K. Endo, and K. Banerjee, “Analytical thermal model for self-heating in advanced FinFET devices with implications for design and reliability,” *IEEE Trans. Comput.-Aided Design Integr. Circuits Syst.*, vol. 32, no. 7, pp. 1045–1058, Jul. 2013.

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