SCIENTIFIC REPORTS

OPEN

Corrigendum: Energy dissipation and error probability in fault-tolerant binary switching

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Scientific Reports 3:3204; doi: 10.1038/srep03204; published online 13 November 2013; updated on 22 February 2016

In the original paper our stochastic simulations had a systematic error that lead to an incorrect error probability in Figure 4 (b). The corrected version of this figure is Fig. 1 of this corrigendum. The actual error probability turns out to be smaller than what we had reported earlier. However, the new plots convey the same physics and overall message; hence, the key message of this paper and our conclusions remain unchanged.

We plot the simulation results for the switching error probability vs. dipole energy for the 4.2, 77 and 300 K cases up to the point where the dipole coupling (tilt in profile) is still low enough that the error probability exceeds $\sim 10^{-6}$ and 10 million simulations suffice to capture the statistics accurately. (NOTE: Errors of 10^{-5} and 10^{-6} approximately correspond to 11.5 and 13.8 respectively on the y-axis). The leveling off of switching error probability with increasing dipole energy at 300 K is still observed, albeit at a much smaller switching error probability value. The error probabilities up to which we perform simulations are too high for the leveling off behavior to set in at 4.2 and 77 K.

Figure 1. Energy dissipated vs. the natural logarithm of the inverse dynamic switching error probability at various temperatures. The analytical bound is compared with estimates from stochastic Landau-Lifshitz-Gilbert simulations of switching trajectories. The approximate slope of the analytical line for the 4.2 K case is mentioned to clarify it is not completely vertical.

Acknowledgements

We thank Mr. Mamun Al Rashid for benchmarking the results plotted in Figure 1 of this corrigendum.

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