Erratum

Thermalization through unitary evolution of pure states

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There has been an error in the numerical computation in the last paragraph in my paper [1]. The section entitled Entanglement induction should be disregarded. The results of this section do not actually refer to the case of a disconnected spin chain, but simply to one with a different interaction. In the computation a program which includes the extension of the Ising model, the so-called XY model with nearest-neighbour interaction

\[ H_\text{I} = \frac{1 + \gamma}{2} \sigma^x \otimes \sigma^x + \frac{1 - \gamma}{2} \sigma^y \otimes \sigma^y, \]  

(1)

is used. The case \( \gamma = 1 \) refers to the Ising chain, which is used in the rest of the article, while the results of the last section refer to the case \( \gamma = 0 \), i.e. a symmetric XY interaction rather than an Ising interaction. Hence there is also no surprise in the result that the thermalization is almost identical to the Ising case. It should be noted that changing this interaction alone does not introduce enough symmetry breaking to make the chain thermalize; the magnetic impurity is still necessary.

The results of the remainder of the article are not impaired by this error.

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REFERENCES

[1] Skrøvseth S. O., Europhys. Lett., 76 (2006) 1179.
[2] Bonanca Marcus V. S., de Oliveira Thiago R. and Rigolin Gustavo, private communication.

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