Erratum: Detection of Macroscopic Entanglement by Correlation of Local Observables [Phys. Rev. Lett. 95, 090401 (2005)]

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Although the index q was proposed for mixed states, it is also applicable to pure states, on which we correct the following statements.

Page 2, left column, 4th last line: “ $q = 1$ ” should read “ $q < 2$.”

Page 3, left column, paragraph just after Eq. (6): “Since addition of ... entanglement [5,6], $p = 1$ for $|\phi\rangle$ if $p = 1$ for $|\psi\rangle$.”

Thus, from inequality (6), we find that *if* $p = 1$ *then* $q = 1$. In particular, $q = 1$ *for any product state* $|\psi\rangle = \bigotimes_{l=1}^N |\psi_l\rangle$ because $p = 1$. To sum up, we have found that $p = 1 \Leftrightarrow q = 1$ and that ...”
should read

“For any product state $|\psi\rangle = \bigotimes_{l=1}^N |\psi_l\rangle$, addition of ... entanglement [5,6]. Thus, from inequality (6), we find that $q = 1$ *for any product state*. To sum up, we have found that $q = 1 \Rightarrow p = 1$, $p = 1 \Rightarrow q \leq 1.5$ and that”

Page 4, right column, line 3: “which has $q = 1$ ” should read “which has $q = 1.5$.”

Furthermore, for clarity, we also make the following improvements:

Page 2, left column, 2nd paragraph: Insert “with nonvanishing errors” after “if one looks only at such expectation values”.

Page 3, left column, three lines after Eq. (6): Insert “and that if $p = 1$ then $q \leq 1.5$ ” after “if $q = 2$ then $p = 2$ ”.

We remark that the conclusions of the present work remain unchanged.

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