

Correction to Quantifying Short-Lived Events in Multistate Ionic Channel Measurements

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An inconsistent boundary condition in eq 2 was corrected. This change does not in any way alter the results or the conclusions of the paper.

Page 1549, column 1, line 11. The text reads as follows:

“In Laplace space, each transition is modeled with a Heaviside step function, $R_p(s) = \Delta R_p/s$, where ΔR_p is the instantaneous change in pore resistance, per unit time. We can obtain an expression for the nanopore current response of a single transition by substituting eq 1 into $I(s) = V_a/Z(s)$ and simplifying

$$I(s) = \frac{\alpha s}{1 + \tau s} \quad (2)$$

where $\alpha = (1/\Delta R_p + C_m)V_a$ and $\tau = (R_{cis} + R_{trans})(1/\Delta R_p + C_m)$. The inverse Laplace transform of eq 2, yields an exponentially decaying time-domain current response

$$i(t) = -\frac{\alpha}{\tau^2}e^{-t/\tau} + i_0, t > 0 \quad (3)$$

where i_0 is the open channel current offset.”

It should be replaced with the following:

“The circuit response for each transition (with characteristic pore resistance R_p) is modeled with a voltage step, $V_a(s) = V_a/s$. From eq 1 and Ohm's law, the ionic current is then $I(s) = V_a(s)/Z(s)$. Upon simplification

$$I(s) = \frac{a(s + b)}{s(s + 1/\tau)} \quad (2)$$

where $a = V_a/(R_{cis} + R_{trans})$, $b = 1/(R_p C_m)$, and $\tau = R_p C_m (R_{cis} + R_{trans}) / (R_p + R_{cis} + R_{trans})$. The inverse Laplace transform of eq 2 yields an exponentially decaying time-domain current response

$$i(t) = \alpha e^{-t/\tau} + i_0, t > 0 \quad (3)$$

where $\alpha = a(1 - b\tau)$ and $i_0 = ab\tau$ is the open channel current offset.”

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