Corrections

T. R. Shannon, F. Wang, J. Puglisi, C. Weber, and D. M. Bers*

*Correspondence: dmbers@ucdavis.edu

2004. A mathematical treatment of integrated Ca dynamics within the ventricular myocyte. *Biophys J.* 87:3351–3371.

Because of a typographical error, the maximal conductances of the slow and fast components of the transient outward K^+ current I_{to}, $G_{to,s}$, and $G_{to,f}$ were erroneously set to 0.02 and 0.06 mS/μF, respectively. These values should be reversed. The model should be adjusted to correctly describe the ratio between slow and fast components in rabbit ventricular myocytes by setting $G_{to,s}$ and $G_{to,f}$ to 0.06 and 0.02 mS/μF, respectively, as shown by Grandi et al. (1).

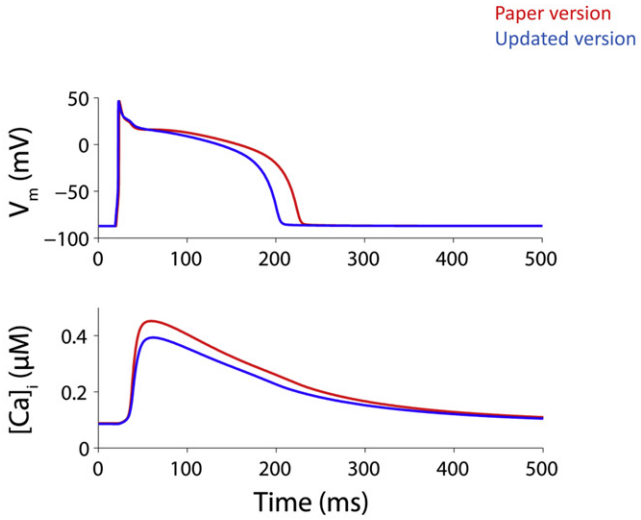
We thank Stefano Morotti for performing the simulations shown in the updated model below to verify the impact of such changes on the results presented in our paper. Although action potential duration (APD) and its rate-dependence are altered somewhat (e.g., ADP is slightly shorter and APD rate dependence is biphasic (1)), we show here that the updated model leads to similar quantitative results obtained with the original model with respect to the description of Ca^{2+} dynamics and excitation-contraction coupling in rabbit ventricular myocytes. Figure numbers correspond to the original publication. Ionic concentrations used are as follows (in mM): $[Cl]_i$ 5, $[Cl]_o$ 146, $[K]_i$ 140, $[K]_o$ 5.4, $[Mg]_i$ 5, $[Na]_o$ 135, $[Ca]_o$ 2. The MATLAB (The MathWorks, Natick, MA) code can be found at https://somapp.ucdmc.ucdavis.edu/Pharmacology/bers/.

REFERENCE

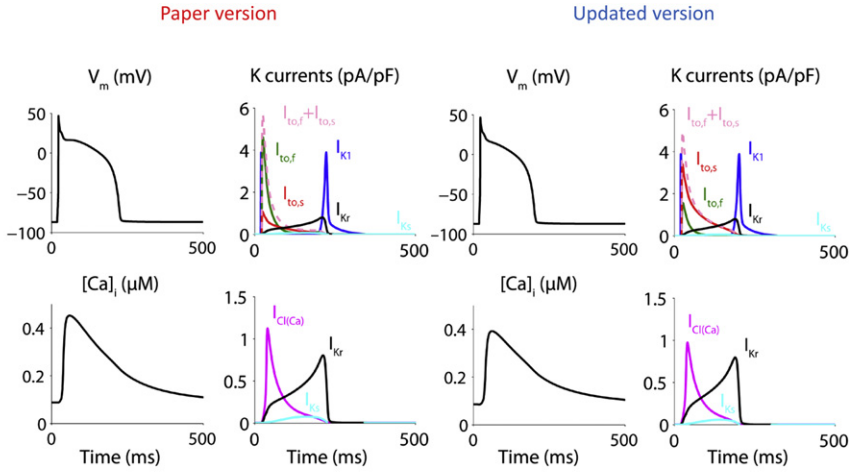
1. Grandi, E., J. L. Puglisi, …, D. M. Bers. 2007. Simulation of Ca-calmodulin-dependent protein kinase II on rabbit ventricular myocyte ion currents and action potentials. *Biophys. J.* 93:3835–3847.

doi: 10.1016/j.bpj.2012.03.034

Figure 1C

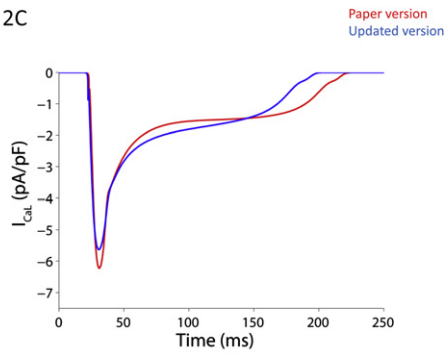


An action potential (*top panel*) and the accompanying bulk cytosolic Ca transient (*bottom panel*).



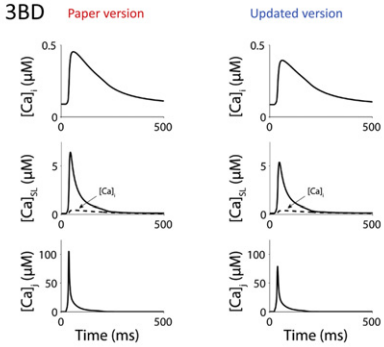
Left panels: bulk cytosolic Ca transient (*bottom panel*) during an action potential (*top*).
Right panels: relevant K and Cl currents during an action potential.

Figure 2C



L-type Ca current generated during an action potential.

Figure 3BD

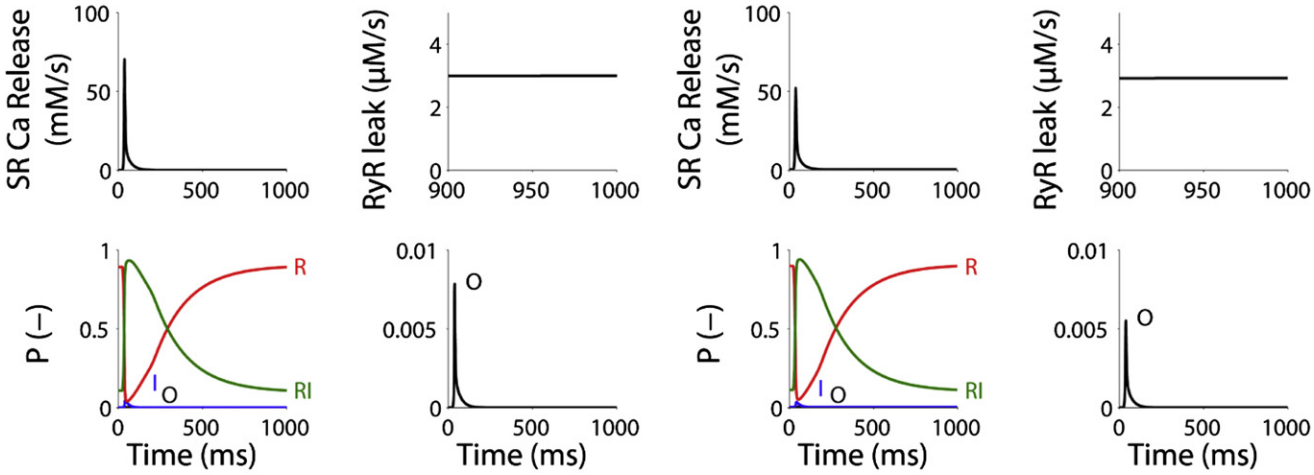


Ca transients in each of the three non-SR compartments (from the *top* to the *bottom*, bulk cytosol, sub-sarcolemma and cleft).

Figure 4

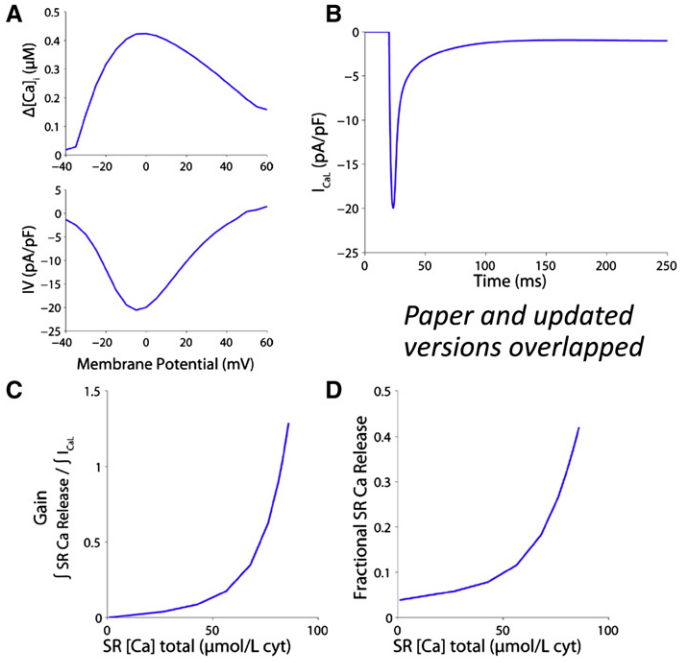
Paper version

Updated version



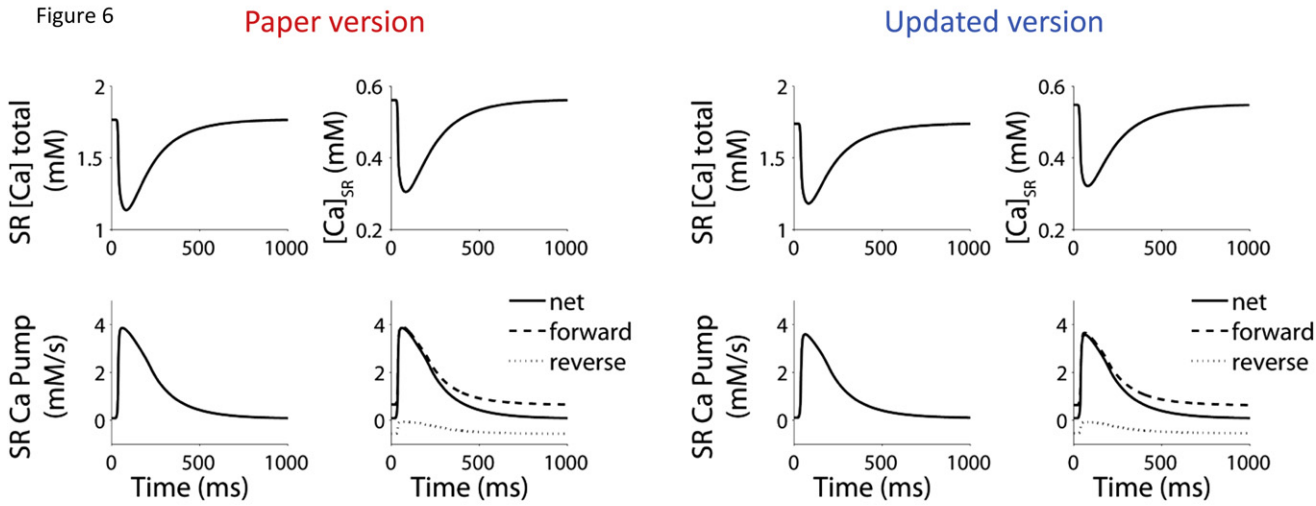
Top panels: SR Ca release flux (*left*) with RyR-dependent SR Ca leak (*right*). Bottom panels: profile of the four channel states over the course of an action potential.

Figure 5



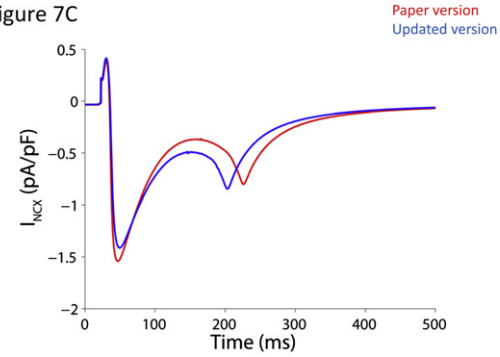
(*A*) Change in the bulk Ca during the transients (*top panel*) and peak L-type Ca currents (*bottom*) in response to a square pulse from a holding potential of −80 mV. (*B*) L-type Ca current in response to a square pulse to 0 mV from a holding potential of −80 mV. SR Ca load dependence of the gain (*C*) and fractional release (*D*).

Figure 6



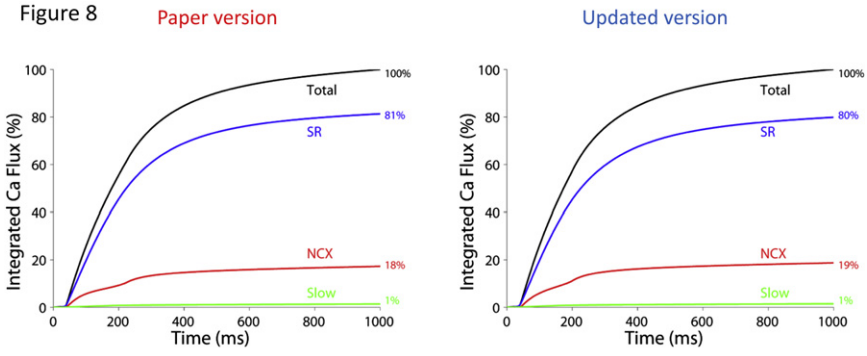
Top panels: changes in $[Ca]_{SRT}$ (*left*) and $[Ca]_{SR}$ (*right*) over the time course of the Ca transient. Bottom panels: net SR Ca pump flux (*left*) into the SR, which is the difference between the forward and reverse unidirectional fluxes (*right*)

Figure 7C



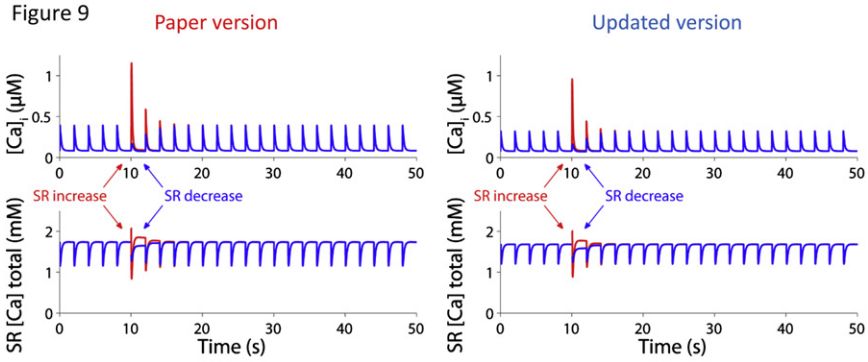
Na-Ca exchanger current generated during an action potential.

Figure 8



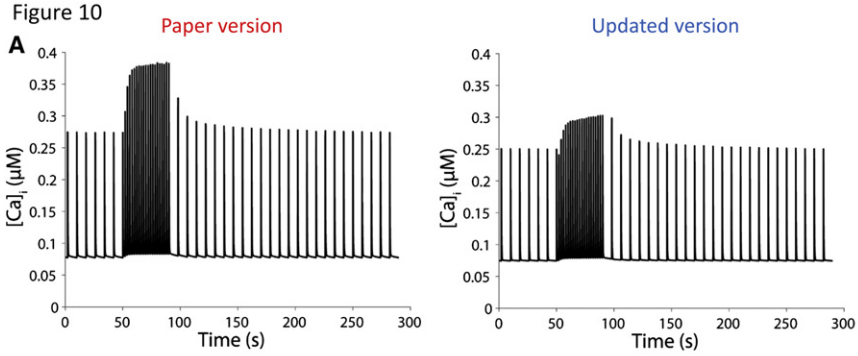
Integrated Ca fluxes that transport Ca from the cytosol. Each transporter competes for Ca resulting in a defined percentage of the total Ca translocated by each.

Figure 9

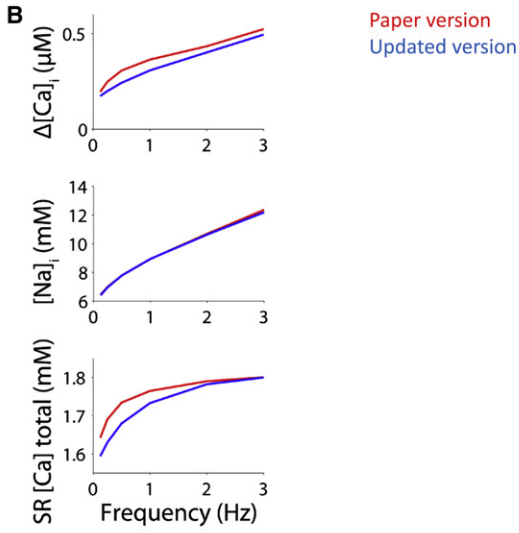


Response to a sudden increase (*red*) or decrease (*blue*) in $[Ca]_{SRT}$ (*bottom panel*). Bulk Ca transient in the top panel.

Figure 10

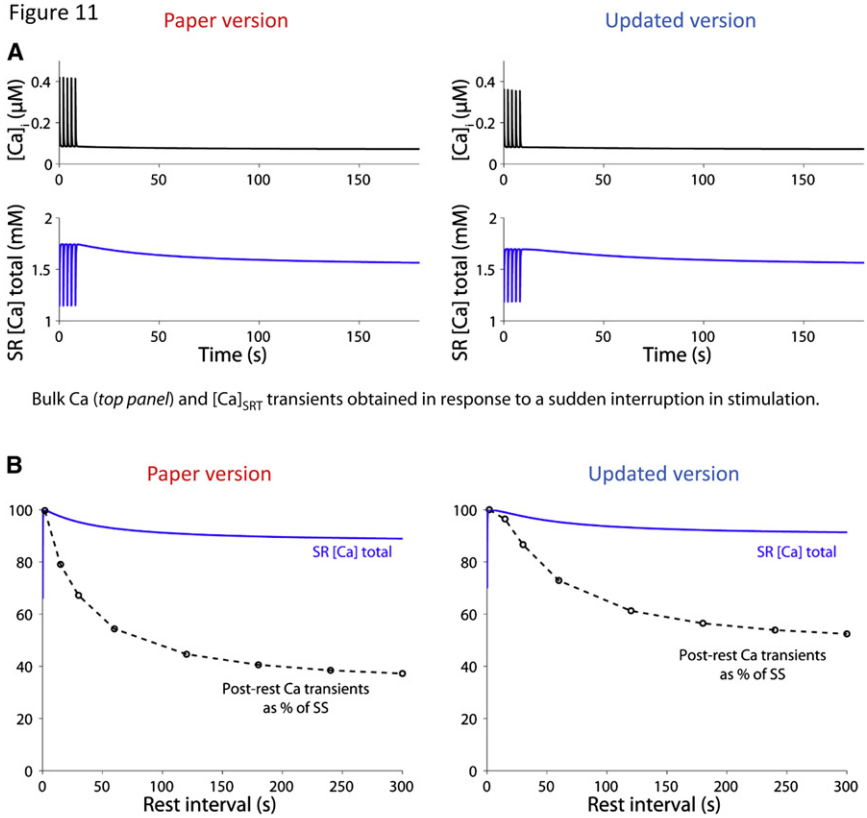


Bulk Ca transient obtained in response to a sudden increase in stimulation frequency from 0.125 to 0.5 Hz.



Frequency dependence of bulk Ca transient amplitude (*top panel*), diastolic bulk [Na], and diastolic $[Ca]_{SRT}$ (*bottom*).

Figure 11



Bulk Ca (*top panel*) and $[Ca]_{SRT}$ transients obtained in response to a sudden interruption in stimulation.

Post-rest bulk Ca transient amplitude (as % of steady-state, *dashed line*) and normalized $[Ca]_{SRT}$ transient (*solid blue line*).

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Ryan M. B. Hoffman,* Anat Berger, Patricio O. Craig, Elizabeth A. Komives, Nicholas P. Schafer, and Peter G. Wolynes

*Correspondence: rmhoffman@ucsd.edu

2012. Predicting Folding Rates from Umbrella Sampled Data. *Biophys. J.* 457a.

The second author's name is incorrect. It should be Anat Burger.

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