Erratum: Coupling-induced oscillations in overdamped bistable systems [Phys. Rev. E 68, 045102 (2003)]

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We incorrectly stated that the basin of attraction of the limit cycle oscillation spans almost the entire phase space when the coupling coefficient is tuned past the critical point λ_c. Using the same system parameters as our paper for $c=3$ and $\epsilon=0$, there is an interval of coupling strength where both the nontrivial steady state solutions and limit cycle exist, see the inset in Fig. 1. This interval is bounded to the left by local branch of Hopf bifurcations that emerges from the branch of nontrivial equilibria around $\lambda=-0.5018$ and to the right by the birth point of the heteroclinic cycle at $\lambda_c=-0.4345$. In Fig. 3 of the original paper, this region is located between the dashed and solid lines in the two-parameter continuation diagram, given again in Fig. 2 for consistency, which represents the Hopf bifurcation points and heteroclinic connections (i.e., λ_c), respectively. For $\lambda=-0.44 \in (-0.5018,-0.4345)$, i.e., between the Hopf bifurcation and heteroclinic connection, the surfaces bounding the gray regions in Fig. 3 represent the coexisting basins of attraction of limit cycle oscillations and synchronous steady-state solutions of the form $(\pm x*, \pm x*, \pm x*)$. The points inside the surfaces are attracted to the synchronous equilibria and those outside are attracted to the large-amplitude oscillations of the limit cycles.

Note that for $\lambda<-0.5018$, the branch of nontrivial equilibria becomes unstable as stated in the paper. In this region, the statement: "even a slight variation in the initial conditions away from $x_1=x_2=x_3$ will push the system into the oscillatory solution" holds true. The changes do not appear to be significant.

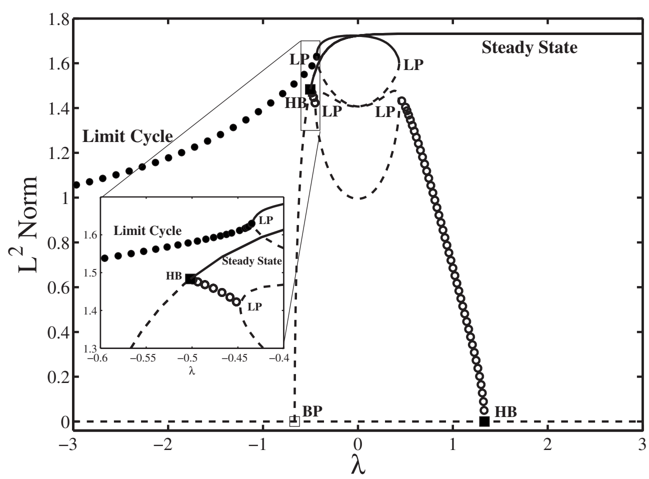

FIG. 1. Bifurcation diagram similar to Fig. 1 of the original paper. The inset shows where both the nontrivial steady-state solution and limit cycle exist. Parameters are $c=3$ and $\epsilon=0$.

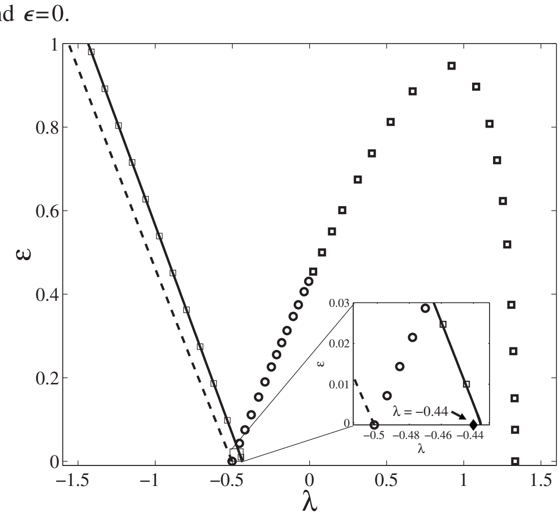

FIG. 2. Two-parameter continuation similar to Fig. 3 of the original paper. The inset shows that for $\lambda=-0.44$ (solid diamond), it is in the region between the Hopf bifurcation point (dashed line) and the heteroclinic connections (black line). $c=3$.

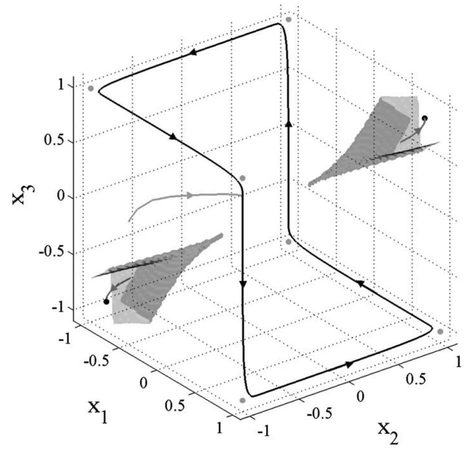

FIG. 3. Basins of attraction of limit cycle oscillations and synchronous steady-state solutions. Initial conditions outside the cone-shaped regions are attracted to the limit cycle solutions while those inside are attracted to the synchronous steady-state solutions of the form $(\pm x*, \pm x*, \pm x*)$. Points inside the upper cone are attracted to $(+x*, +x*, +x*)$. Points inside the lower cone are attracted to $(-x*, -x*, -x*)$. Parameters are $c=3$, $\epsilon=0$, and $\lambda=-0.44$.