

Erratum: Mode locking and Arnold tongues in integrate-and-fire neural oscillators
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In this erratum we include the effects of nonsmooth bifurcations on the structure of Arnold tongues in periodically forced integrate-and-fire (IF) neural oscillators.

The first type of nonsmooth bifurcation occurs when there is a tangential intersection of the trajectory with the threshold value such that upon variation of the bifurcation parameter, the local maxima of the IF trajectory passes through threshold from above. In this case, there is loss of a solution in a nonsmooth fashion. A mode-locked solution undergoing such a bifurcation satisfies $A(T^n) = \tau^{-1}$, or equivalently $F'(T^n) = 0$. In the second scenario, a subthreshold local maximum increases through threshold leading to the creation of a new firing event at some earlier time than usual. For mode-locked solutions, these nonsmooth bifurcations are defined by $F(T^*) = F(T^n) + e^{T^n/\tau}$ and $F'(T^*) = 0$. These nonsmooth bifurcations alter Figs. 3 and 4 so that tongues no longer overlap. Figure 1 of this erratum shows revised figures 3 and 4 of the original paper.

We would like to thank Leon Glass for pointing out an inconsistency in our previous construction of Arnold tongues. His various insightful comments directly stimulated this current work. We would also like to thank Khashayar Pakdaman for helpful comments.

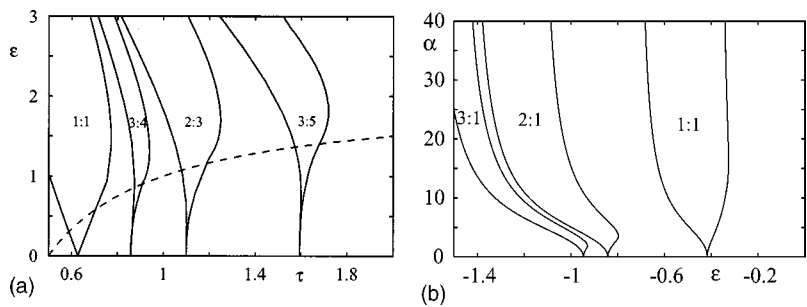


FIG. 1. Left: Revised Fig. 3. Right: Revised Fig. 4.