

Local Models for Parabolic Bursting

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Different models have been proposed on the parabolic bursting. After the conductance-based model of the Aplysia R15 Neuron known as the Plant model and the reduction of this biophysical parabolic bursting to 3 variables, including one phase variable, namely the Baer-Rinzel-Carillo phase model, we propose here a local model (normal form) which displays the spike-adding phenomenon. In contrast, it is possible here to achieve completely the mathematical analysis and discuss the spike-adding in terms of the solutions of a Bessel equation.

This is a joint work with M. Desroches and M. Krupa.