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Noisy activation kinetics induces bursting in the Huber-Braun neuron model

Finke C., Postnova S., Rosa E., Freund J.A., Huber M.T., Voigt K., Moss F.E., Braun H.A., 'Noisy Activation Kinetics induces Bursting in the Huber-Braun Neuron Model', The European Physical Journal-Special Topics, 2010, 187 (1), 199-203

Abstract

We study a physiologically realistic implementation of internal stochasticity in a four-dimensional Hodgkin-Huxley type model of mammalian cold receptors. We show that in a deterministically tonic firing regime, this stochasticity can drive the neuron into a state of complex bursting behaviour. An explanation of the mechanism behind this effect is given in terms of phase space dynamics. © 2010 EDP Sciences and Springer.

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