

COOPERATIVE OPERATION MODE
OF A SYNAPTIC CHANNEL

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S u m m a r y

The work considers the problem of the signal (nervous pulse) transmission through a synaptic cleft (synaptic channel). For this purpose, we propose a nonlinear dynamic model that describes the kinetics of biochemical reactions taking place in a synapse during the pulse propagation. In the framework of this model, the arrival of a signal at a synaptic cleft is considered as a perturbation that disturbs the system from the stationary state, whereas the mechanism of signal transmission is realized through the evolution of the system to the initial stationary state. We have found the conditions, under which it is possible to transfer periodic pulses through a synaptic channel, and present the results of corresponding numerical calculations.