

Synchronization of Optically Coupled NeuralLike Oscillators

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Abstract.

An optoelectronic model of synaptically coupled neural oscillators interacting through a fiber optic communication channel simulating synaptic transmission of pulse signals between brain neurons is proposed. The receiving oscillator is affected by a photodiode controlled by the signal from an optical fiber. It is found that the fiberoptic communication channel can ensure forced synchronization. Synchronization modes with different frequency ratios are experimentally obtained.