QUANTUM EXCITATION OF WATER MOLECULES IN NEURON BY EEG AS AN INFORMATION TRANSFER MECHANISM

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Abstract

Quantum transitions between collective rotational states of water molecules in a neuron are proposed as a fundamental feature of brain activity. The theory predicts surprising results. The transitions, induced by the electroencephalogram (EEG) signal, transfer information rather than energy, because the transition probability depends on frequency and does not depend on the amplitude, which is very unstable. The number of water molecules in a neuron can be estimated by the efficiency of interaction of the EEG signal with the neuron. At a typical EEG frequency of about 10 Hz, this number is obtained to be very close to the actual number of water molecules in the neuron. The frequency interval, where such transitions are effective, coincides with the actual diapason of EEG 1 ÷ 50 Hz (δ-, θ-, α-, β- and γ -bands).