

CATEGORIZATION OF NEURONS ACCORDING TO IN VIVO SPIKING STATISTICS

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ABSTRACT

By analyzing the spike sequences recorded from the cortical neurons of awake behaving monkeys, inter-spike-interval characteristics measured through some dimensionless statistical coefficients were found to be largely dependent on the recording site [1, 2]. Even for the data recorded from different monkeys performing different tasks in different laboratories, the distributions of some dimensionless statistical coefficients derived from the same area exhibited strong similarities, in comparison with the inter-area differences derived from the same monkey. In addition, neurons in each cortical area were found to be categorized into several types [3]. We are presently interested in how many groups the recorded neurons can be categorized into, and how the groups of neurons categorized according to the spiking characteristics correspond to the known neuroanatomical categories. We will propose the on-line categorization scheme, with which we can infer the origin of the spike sequence, and the spiking conditions of the recorded neuron.

Keywords: Spiking statistics, Cortical areas, Neuronal types.

References

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