Optimal Neural Spike Classification

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Abstract:

Being able to record the electrical activities of a number of neurons simultaneously is likely to be important in the study of the functional organization of networks of real neurons. Using one extracellular microelectrode to record from several neurons is one approach to studying the response properties of sets of adjacent and therefore likely related neurons. However, to do this, it is necessary to correctly classify the signals generated by these different neurons. This paper considers this problem of classifying the signals in such an extracellular recording, based upon their shapes, and specifically considers the classification of signals in the case when spikes overlap temporally.