

ABSTRACT

Title: Effect of surface electrode type on quality of decomposition of surface EMG signal

Objectives: The aim of this thesis is to evaluate the effect of surface electrode type, which was used for EMG record, on the quality of decomposition of surface EMG signal using decomposition software EMGlab.

Methods: The form of the thesis is an experimental essay. It was detected an EMG signal from one healthy volunteer during mild cyclic contraction. It was used three different types of electrodes (standard surface electrode, tetrode, tetrode with saw-off spikes) for EMG signal detection. These signals were decomposed in program EMGlab. The results were processed in program MS Excel, compared with each other and graphically displayed.

Results: The measurement verified a hypothesis which claimed that the used type of electrode affects the quality of automatic decomposition. The best results of automatic decomposition provide the signal gained from the standard surface electrode.

Key words: action potential, decomposition, surface electrodes, EMG signal, tetrode, electromyography