Detection of muscle fatigue, from statistical methods to software applications

Authors

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Description

Background: Muscle fatigue has become increasingly present in our daily lives. This is related to lifestyle difficulties. Several methods were proposed in order to detect the muscle fatigue. This report proposes a short review of statistical methods and processing tools extracted from MATLAB software dedicated to detection of fatigue.

Methods: The first part in this study is an application of a useful electronic card named â€œarduinoâ€ for acquiring the electromyography signal (EMG). This latter is the perfect signal to describe fatigue in muscles. The acquisition of data is done in two steps; the first is a simple acquisition representing rest (the subject is relaxed). Then, in the next step, the subject does a series of physical exercises representing moving continuously a handlebar (in order to simulate the work of the tramâ€™ s conductor). After obtaining raw data from the acquired signals, we apply statistical methods and …