

SIGNAL AVERAGING AND VARIABILITY ESTIMATION IN HIGH RESOLUTION ECG

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Abstract

The ECG signal digitised with a high resolution level (HR ECG) is a non invasive way more and more used in clinical centres to analyze heart electrical activity. The Signal Averaging technique is commonly used to eliminate the noisy part of the recordings. A synthesis of some of our published works is presented with the aim to take into account both the repetitivity and the variability of cardiac signals coming from HR ECG. Signal averaging is analysed specially when the ideal case of equal shape and equal width signals cannot be assumed. The measure of shape or shape and width differences is applied both to the natural variability to improve averaging and to variations induced by external agents such as the action of a drug.

Keywords: high resolution electrocardiography, signal averaging, shape variation, width variation, normalized integral, distribution function method