

Choice of The Analyzing Wavelet in The Phonocardiogram Signal Analysis Using the Continuous Wavelet Transform Based on The Fast Fourier Transform

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The conventional continuous wavelet transform (CWT) requires considerable power and time when analyzing long signals. In order to increase the speed of computation we used CWT analysis based on Fast Fourier Transform (CWTFT), this method provides results for long recordings of phonocardiogram signals (PCG) in a short time. The analysis of the CWT depends on the mother wavelet function, in this paper we apply a different analyzing wavelet (Morlet, Dog, Paul and Bump wavelets) and each time the value of the mean difference (in absolute value) between the original signal and the synthesis signal obtained by the Fast Fourier Transform (FFT) is measured. In this study, we indicate the possibility of parametric analysis of PCG signals using the CWTFT which is the new solution, and we evaluate her performance. The results obtained show the clinical utility of our extraction methods for the recognition of heart sounds, and also for the estimation of pulmonary arterial hypertension.

Topics

Session D. Biomedical optics and sensors technology

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