



# Сведения о документе - Assessment of empirical mode decomposition implementation in cardiovascular signals

1 из 1

[Экспорт](#) [Скачать](#) [Еще... >](#)

17th Symposium IMEKO TC4 - Measurement of Electrical Quantities, 15th International Workshop on ADC Modelling and Testing, and 3rd Symposium IMEKO TC19 - Environmental Measurements

2010, Pages 99-104

17th Symposium IMEKO TC4 - Measurement of Electrical Quantities, 15th International Workshop on ADC Modelling and Testing, and 3rd Symposium IMEKO TC19 - Environmental Measurements; Kosice; Slovakia; 8 September 2010 до 10 September 2010; Код 94998

## Assessment of empirical mode decomposition implementation in cardiovascular signals(Conference Paper)

Pinheiro, E., Postolache, O., Girão, P.

[Просмотр дополнительных авторов](#)

[Сохранить всех в список авторов](#)

Instituto de Telecomunicações, Instituto Superior Técnico, Av. Rovisco Pais 1, 1049-001, Lisboa, Portugal

[Просмотр дополнительных организаций](#)

### Краткое описание

Biomedical signals are relentlessly superimposed with interferences and noise. The nonlinear processes which generate the signals, and the interferences, regularly exclude or limit the usage of classical linear techniques, and even wavelet transforms, to decompose the signal. Empirical Mode Decomposition (EMD) is a recently proposed method for analyzing signals from a nonlinear viewpoint. EMD is not defined by a formal mathematical analysis, instead the decomposition is obtained by following an algorithm, requiring experimental investigation, thus being a fully data-driven technique. Hence, this work evaluates the impact of EMD implementation in the processing of biomedical signals, namely on electrocardiogram, impedance and photoplethysmogram, and ballistocardiogram. All these signals are very sensible to motion artefacts, and therefore mode decomposition is important to separate the representative component from the pure noise. EMD was never applied to most of these signals, which are very physiologically meaningful, so the implementation's impact is assessed.

### Актуальность темы SciVal

Тема: [Ballistocardiography](#) | [Breathing Rate](#) | [Cardiograms](#)

Процентиль актуальности: 93.692

Включенные в указатель ключевые слова

Engineering  
uncontrolled terms

[Biomedical signal](#) [Cardiovascular signals](#) [Empirical Mode Decomposition](#)  
[Experimental investigations](#) [Linear techniques](#) [Mathematical analysis](#) [Mode decomposition](#)  
[Motion artefacts](#) [Nonlinear process](#) [Photoplethysmogram](#)

Engineering controlled  
terms:

[Bioelectric phenomena](#)

Engineering main  
heading:

[Signal processing](#)

### Цитирования в 4 документах

Nasr, M.C.B. , Jebara, S.B. , Otis, S.  
Article a spectral-based approach for bcg signal content classification

(2021) *Sensors (Switzerland)*

Postolache, O. , Girão, P. ,  
Postolache, G.

Seismocardiogram and  
ballistocardiogram sensing

(2013) *Advanced Instrument  
Engineering: Measurement,  
Calibration, and Design*

Pinheiro, E. , Postolache, O. ,  
Girão, P.

Empirical Mode Decomposition  
and Principal Component Analysis  
implementation in processing  
non-invasive cardiovascular  
signals

(2012) *Measurement: Journal of  
the International Measurement  
Confederation*

[Просмотреть подробные  
сведения обо всех 4  
цитированиях](#)

Сообщайте мне, когда этот  
документ будет цитироваться в  
Scopus:

[Задать  
оповещение о  
цитировании >](#) [Настроить  
канал  
цитирования  
>](#)

### Связанные документы

Найти дополнительные  
связанные документы в Scopus  
исходя из следующего  
параметра:

[Авторы  
>](#) [Ключевые слова  
>](#)

ISBN: 978-161782338-1

Тип источника: Conference Proceeding

Язык оригинала: English

Тип документа: Conference Paper

Pinheiro, E.; Instituto de Telecomunicações, Instituto Superior Técnico, Av. Rovisco Pais 1, Portugal;

© Copyright 2013 Elsevier B.V., All rights reserved.

