LEMBAR
HASIL PENILAIAN SEJAWAT SEBIDANG ATAU *PEER REVIEW*
KARYA ILMIAH : JURNAL ILMIAH

Judul Jurnal Ilmiah (Artikel)	:	Hysteris Loops for Magnetoelectric Multiferroics Using Landau-Khalatnikov Theory		
Nama/ Jumlah Penulis	:	2 Orang		
Status Pengusul	:	penulis ke-1		
Identitas Jurnal Ilmiah	:	a. Nama Jurnal	:	International Journal of Electrical and Computer Engineering (IJECE)
		b. Nomor ISSN	:	2088-8708
		c. Vol, No., Bln Thn	:	Vol 8, No.6, Desember 2018
		d. Penerbit	:	Institute of Advanced Engineering and Science
		e. DOI artikel (jika ada)	:	10.11591/ijece.v8i6
		f. Alamat web jurnal	:	http://ijece.iaescore.com/index.php/IJECE/index
		Alamat Artikel	:	http://ijece.iaescore.com/index.php/IJECE/article/view/12218/11223
		g. Terindex	:	Scopus(Scimagojr, Q2 SJR = 0.32 H-index = 19)

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		Jurnal Ilmiah Nasional Terakreditasi
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a. Kelengkapan unsur isi jurnal (10%)	4	4	4,0
b. Ruang lingkup dan kedalaman pembahasan (30%)	11	10	10,5
c. Kecukupan dan kemutahiran data/informasi dan metodologi (30%)	11	11	11
d. Kelengkapan unsur dan kualitas penerbit (30%)	11,5	11	11,25
Total = (100%)			36,75
Nilai untuk Pengusul : 60% x 36,75 = 22,05			

Semarang, 17 Januari 2022

Reviewer 1

Prof. Dr. Heri Sutanto, S.Si., M.Si.
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Unit Kerja : Universitas Diponegoro
Bidang Ilmu: Fisika Material

Reviewer 2

Prof. Dr. Kusworo Adi, M.T.
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Unit Kerja : Universitas Diponegoro
Bidang Ilmu: Fisika Instrumentasi

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a. Kelengkapan unsur isi jurnal (10%)	4			4
b. Ruang lingkup dan kedalaman pembahasan (30%)	12			11
c. Kecukupan dan kemutahiran data/informasi dan metodologi (30%)	12			11
d. Kelengkapan unsur dan kualitas terbitan/jurnal (30%)	12			11,5
Total = (100%)	**40**			**37,5**
Nilai Pengusul = 60% x 37,5 = 22,5				

Catatan Penilaian artikel oleh Reviewer :

1. **Kesesuaian dan kelengkapan unsur isi jurnal:**
   Artikel telah ditulis sesuai dengan petunjuk jurnal IJECE atau Guide of Author (meliputi Introduction, Research Methods, Result and Analysis, Conclussion, Acknowledgement, References). Substansi publikasi sesuai dengan bidang ilmu penulis yaitu fisika material.
2. **Ruang lingkup dan kedalaman pembahasan:**
   Lingkup artikel masih relevan dengan ruang lingkup jurnal IJECE (electrical & power engineering, computer science & information technology, dll). Pembahasan terkait perhitungan histerisis multiferoik magnetoelektrik telah diungkapkan dengan jelas dan komprehensif serta sudah membandingkan dengan 3 hasil penelitian lain.
3. **Kecukupan dan kemutakhiran data/informasi dan metodologi:**
   Hasil penelitian disajikan dalam 2 gambar dan cukup memberikan informasi terkait sifat magnetoelektrik pada bidang fisika material secara teoritis. Tidak ada informasi terkait validasi hasil penelitian yang dilakukan. Referensi yang digunakan dalam penyusunan paten sejumlah 22 referensi dengan 7 referensi kategori mutakhir (kurang dari 10 tahun) dan referensi yang digunakan relevan dengan artikel yang ditulis. Uji similaritas menunjukkan angka 15% yang mengindikasikan bahwa hasil penelitian yang dipublikasi memberikan kontribusi keilmuwan dibidang simulasi material dengan baik.
4. **Kelengkapan unsur dan kualitas terbitan:**
   Jurnal IJECE kategori Jurnal Internasional Bereputasi, terindeks Scopus dengan SJR=0,322 (2019)/Q2. Editorial board lebih dari empat negara dan kontributor lebih dari 4 negara. Unsur, tata tulis dan kulaitas terbitan jurnal baik.

Semarang, 8 Maret 2021
Reviewer 1

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Unit Kerja : Universitas Diponegoro
Bidang Ilmu: Fisika Material

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b. Ruang lingkup dan kedalaman pembahasan (30%)	12			10
c. Kecukupan dan kemutahiran data/informasi dan metodologi (30%)	12			11
d. Kelengkapan unsur dan kualitas terbitan/jurnal (30%)	12			11
Total = (100%)	**40**			**36**
Nilai Pengusul = 60% x 36 = 21,6				

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1. **<u>Kesesuaian dan kelengkapan unsur isi jurnal:</u>**
   Kelengkapan unsur jurnal sudah sesuai dengan petunjuk yang diberikan oleh jurnal atau Guide of Author (Introduction, Research Methods, Result and Analysis, Conclussion, Acknowledgement, References). Substansi publikasi sesuai dengan bidang ilmu penulis yaitu fisika material. Ada keterkaitan terhadap struktur penulisannya (skor=4,00).
2. **<u>Ruang lingkup dan kedalaman pembahasan:</u>**
   Publikasi sudah sesuai dengan ruang lingkup jurnal (electrical & power engineering, circuits & electronics, power electronics & drives, automation, instrumentation & control engineering, digital Signal, image & video processing, telecommunication system & technology, computer science & information technology, internet of things, big data & cloud computing, and artificial intelligence & soft computing). Pembahsaan sudah membandingkajn dengan penelitian lain (3 dari 22 referensi) sehingga pembahasan dilakukan secara komoprehensif (skor=10,00).
3. **<u>Kecukupan dan kemutakhiran data/informasi dan metodologi:</u>**
   Hasil penelitian cukup memberikan informasi pada bidang material yang disertai metodologi secara teoritis, namun belum ditampilkan bagaimana membuktikan secara komputasi. Referensi sejumlah 22 sebanyak 7 referensi diatas 10 tahun dan 15 referensi 10 tahun kebawah akan tetapi semua referensi medukung topik yang dibahas (skor = 11)
4. **<u>Kelengkapan unsur dan kualitas terbitan:</u>**
   Jurnal tersebut termasuk dalam kategori Jurnal Internasional Bereputasi dengan editorial board lebih dari empat negara dan kontributor lebih dari 4 negara, ISSN 2088-8708, e-ISSN 2722-2578, terindeks scopus dengan SJR=0,322 (2019)/Q2 (skor=11,00).

Semarang, 7 Oktober 2020
Reviewer 2

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Bidang Ilmu: Fisika Instrumentasi

Document details

International Journal of Electrical and Computer Engineering
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Hysteresis loops for magnetoelectric multiferroics using landau-khalatnikov theory (Article)

Gunawan, V., Umiati, N.A.K.

Physics Department, Faculty of Sciences and Mathematics, Diponegoro University, Jl. Prof Soedarto, Tembalang, Semarang, Indonesia

Abstract

View references (22)

We present a theoretical discussion of the hysteresis in magnetoelectric multiferroics with bi-quadratic magnetoelectric coupling. The calculations were performed by employing Landau-Khalatnikov equation of motion for both the ferroelectric and ferromagnetic phase, then solve it simultaneously. In magnetoelectric, we obtain four types of hysteresis: ferroelectric hysteresis, ferromagnetic hysteresis and two types of cross hysteresis (electric field versus magnetization and magnetic field versus electric polarization). The cross hysteresis has butterfly shape which agree with the result from the previous research. It can also be seen from that hysteresis, that magnetization / electric polarization can not be flipped into the opposite direction using external electric / magnetic field when the magnetoelectric coupling is bi-quadratic type. Overall, the result shows that Landau-Khalatnikov equation is able to approximate hysteresis loops in multiferroics system. Copyright © 2018 Institute of Advanced Engineering and Science. All rights reserved.

SciVal Topic Prominence

Topic: Magnetic Anisotropy | Tunnel Junctions | Lead Titanates

Prominence percentile: 97.877

Author keywords

Cross interaction | Histeresis loops | Landau-Khalatnikov theory | Magnetoelectric multiferroics | Material response

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A Detail Study of Wavelet Families for EMG Pattern Recognition

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ABSTRACT

Wavelet transform (WT) has recently drawn the attention of the researchers due to its potential in electromyography (EMG) recognition system. However, the optimal mother wavelet selection remains a challenge to the application of WT in EMG signal processing. This paper presents a detail study for different mother wavelet function in discrete wavelet transform (DWT) and continuous wavelet transform (CWT). Additionally, the performance of different mother wavelet in DWT and CWT at different decomposition level and scale are also investigated. The mean absolute value (MAV) and wavelength (WL) features are extracted from each CWT and reconstructed DWT wavelet coefficient. A popular machine learning method, support vector machine (SVM) is employed to classify the different types of hand movements. The results showed that the most suitable mother wavelet in CWT are Mexican hat and Symlet 6 at scale 16 and 32, respectively. On the other hand, Symlet 4 and Daubechies 4 at the second decomposition level are found to be the optimal wavelet in DWT. From the analysis, we deduced that Symlet 4 at the second decomposition level in DWT is the most suitable mother wavelet for accurate classification of EMG signals of different hand movements.

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1. INTRODUCTION

Electromyography (EMG) signal contains rich muscle information that can be used in clinical and rehabilitation application. The potential of EMG signal in myoelectric control has been widespread since last two decades [1]. EMG signal recorded from a contracting muscle not only measures the time detection of muscle activation but also provides electrical signs of muscular behavior [2]. Recently, the analysis of EMG signal using a powerful signal processing technique has become the attention of the researchers.

In biomedical signal processing, short time Fourier Transform (STFT), wavelet transform (WT) and empirical decomposition mode (EMD) are frequently used [3]-[5]. In the previous research, it has been found that WT outperformed other time-frequency methods in discriminating EMG patterns [3],[6]. WT exhibits good time resolution at high frequency and good frequency resolution at low frequency components [7]. In general, WT can be categorized into discrete and continuous form. In continuous wavelet transform (CWT), the wavelet transformation changes continuously. On one side, discrete wavelet transform (DWT) decomposes the signal into multiresolution coefficients using high pass and low pass filters.

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Forecasting Short-term Wholesale Prices on the Irish Single Electricity Market

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ABSTRACT

Electricity markets are different from other markets as electricity generation cannot be easily stored in substantial amounts and to avoid blackouts, the generation of electricity must be balanced with customer demand for it on a second-by-second basis. Customers tend to rely on electricity for day-to-day living and cannot replace it easily so when electricity prices increase, customer demand generally does not reduce significantly in the short-term. As electricity generation and customer demand must be matched perfectly second-by-second, and because generation cannot be stored to a considerable extent, cost bids from generators must be balanced with demand estimates in advance of real-time. This paper outlines a a forecasting algorithm built on artificial neural networks to predict short-term wholesale prices on the Irish Single Electricity Market so that market participants can make more informed trading decisions. Research studies have demonstrated that an adaptive or self-adaptive approach to forecasting would appear more suited to the task of predicting energy demands in territory such as Ireland. We have identified the features that such a model demands and outline it here.

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1. INTRODUCTION

The increasing percentage of electricity generated through renewable sources tends to invalidate the assumption of correlation between electricity spot prices and the price of the mix of commodities utilized to supply generators (e.g. gas, coal, oil-depending on the generating asset composition on the specific grid). The variable nature of production of renewable energy sources also increases the volatility of system marginal prices (SMPs) on markets based on a mandatory central pool model. European countries have undertaken substantial investments to boost the amount of energy produced through renewable generation. Ireland in particular is aiming at 40% of its power needs being met by renewable sources by 2020. In this environment, we can expect the wholesale, fine granularity (e.g. half hourly) wholesale price of electricity to become more volatile over time.

The ability to operate effectively on electricity spot markets relies on the capability to devise appropriate bidding strategies. These in turn can benefit from the inclusion of a reliable forecast of short term system marginal prices (SMPs). In a market with an increasing percentage of renewable generators, reliable forecasts must necessarily take into account additional factors such as meteorological forecasts, forecasted demand and constraints imposed by network topology [1], [2]. Traditional time series forecasting algorithms (e.g. based on AutoRegressive Integrated Moving Average models) can perform reasonably well in this context but rely on assumptions being made on behavior over different temporal windows to yield consistent results [3], [4].