



العلم من وجدته ساد و من لم يجدته سيد عليه علم اقتدار است هر کس اين قدرت را به دست آورد مي تواند غلبه پيدا کند و هر کس آن را پيدا نکند بر آن غلبه خواهد شد. (علی ۲)

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1- SENSORLESS SPEED MEASUREMENT FOR UNIVERSAL MOTOR

7th International Conference on

“Technical and Physical Problems of Power Engineering”

7-9 July 2011

Near East University

Lefkosa, TR Northern Cyprus

Rahim Ildarabadi

Abstract- This paper presents a new method for measurement speed of universal motors without using any speed sensor (such as speedometer, tachometer, encoders, and so on). This method uses the effects of brushes in the current motor. The wavelet transform is used for detecting effects of the brushes on current motor. The case study has been done and result of simulation shows that the presented method is able to precision measurement of speed of Universal motor.

Keywords: Speed Measurement, Sensorless Speed Measurement, Wavelet Transform, Universal Motor.

2- Recursive Algebraic Method of Computing Power System Harmonics

Ali Peiravi, Rahim Ildarabadi

Abstract- Ensuring power quality in power systems demands fast calculation of harmonics. In this paper, a recursive algebraic approach to the calculation of current transformer (CT)-derived current signal frequency and harmonics is proposed that is based on a fast but accurate recursive algorithm whereby in any stage of sampling in a given cycle the variables are calculated on the basis of their values in the previous stage. Comparison with the discrete Fourier transform (DFT) approach shows the superiority of the proposed approach. It is shown that when the number of samples used in the DFT approach is increased, the results obtained

approach those of the proposed recursive algebraic method. 2011 Institute of Electrical Engineers of Japan. Published by John

Wiley & Sons, Inc.

Keywords: power quality, discrete Fourier transform, monitoring, steady-state analysis, harmonics

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3- Improved Multilevel Bipartitioning for Controlled Power System Islanding

Rahim Ildarabadi, Ali Peiravi

IEEJ TRANSACTIONS ON ELECTRICAL AND ELECTRONIC ENGINEERING

IEEJ Trans 2011; **6**: 547–557

Published online in Wiley Online Library (wileyonlinelibrary.com).

Abstract- Nowadays interconnected power systems work close to their limits because of increased economic benefits. If a severe disturbance occurs in any part of the interconnected power system, it can be propagated through it. If no intelligent supervisory action is taken, a power system may be driven into an emergency state which could either cause system collapse by natural islanding or total system blackout. One possible measure to be put in effect in an emergency state is controlled power system islanding. In this paper, our previously proposed multilevel approach for controlled islanding is improved by using slow coherency grouping of generators in the aggregation phase. The approach has been applied to the IEEE 118 bus power system. The results indicate that the best partitioning of the power system is obtained with minimum generation/load imbalance in the islands, and with the coherent groups of generators maintained in each island making the restoration easy. A comparison of the computational

complexities involved in the spectral, multilevel kernel k -means and the improved multilevel approaches is made by applying these methods to the IEEE 9 bus, the IEEE 30 bus, the IEEE 39 bus, the IEEE 57 bus, the IEEE 118 bus, the IEEE 300 bus, the 2383 bus Polish and the 2746 bus Polish power systems to show the suitability of the proposed approach for controlled islanding of large-scale power systems. Ó 2011 Institute of Electrical Engineers of Japan. Published by John Wiley & Sons, Inc.

Keywords: controlled power system islanding, slow coherency, spectral partitioning, multilevel approach
Received 19 May 2010; Revised 10 September 2010

4- Title : (Graph Partitioning Applications in Electrical Engineering with an Emphasis on Power System Intentional Islanding)

RAHIM ILDARABADI , Ali Peiravi ,

Abstract- Graph partitioning techniques have been widely applied in many fields in Electrical Engineering such as VLSI design, parallel processing, circuit and layout design, power system transient stability studies, intentional islanding, optimal load flow, fault estimation, dynamic security assessment, etc. The approach to the solution of each problem may be different. The objective functions in the various potential applications of graph partitioning in electrical engineering applications are also different requiring slightly different approaches to their solution. In this paper, a review of the applications of graph partitioning to electrical engineering is presented. A new approach to power system islanding is proposed using Gaussian surfaces for aggregating groups of slow coherency generators in the multilevel kernel k -means approach to partitioning in order to further speed up the calculations. Results of the application of this approach to the IEEE 30 bus power system are illustrated as a case study example.

Keywords: Multilevel islanding, Spectral partitioning, Slow coherency

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5- Complexities of Using Graph Partitioning in Modern Scientific Problems and Application to Power System Islanding

Ali Peiravi, Rahim Ildarabadi
Ferdowsi University of Mashhad

Abstract: The application of graph partitioning to modern scientific problems with various objectives has been attempted by many researchers in a variety of fields. Such applications are many and the following may be mentioned only to name a few examples. Applications such as vulnerability assessment of large power systems, power system islanding, design of VLSI circuits, dynamic system modeling and simulation, innovation graph state estimation, internet-like network partitioning, task mapping of parallel computation, database management, archaeological dating, power system transient studies, load balancing of parallel computing, molecular dynamics, DNA sequencing, categorizing amino acids, circuit netlists partitioning, etc. have been reported in the literature. In this paper, the complexities of the application of graph partitioning in modern scientific applications are thoroughly investigated in order to shed some light on this issue with such a diverse domain of applications. Fundamental graph theoretical and matrix algebraic concepts are discussed with sufficient examples. Application of these concepts to the problem of power system islanding is presented with suggestions to improve the speed and the objective function being used. [Journal of American Science 2009;5(5):1-12]. (ISSN: 1545-1003).

Key words: Graph partitioning, Fiedler vector, eigenvalues, Laplacian, Scientific applications, Power system islanding

Marsland Press Journal of American Science 2009; 5(5):1-12

6- A Fast Algorithm for Intentional Islanding of Power Systems Using the Multilevel Kernel k-Means Approach

A. Peiravi and R. Ildarabadi

Abstract: In this study, an algorithm using Multilevel Kernel k-Means approach for fast islanding of large power systems is proposed. Intentional islanding using both the spectral and the Multilevel Kernel k-Means methods have been applied on several test systems to show the efficiency of the proposed approach. The results show that the proposed method is much faster than existing methods.

Journal of Applied Sciences Year: 2009 Volume: 9 Issue: 12 Page No.: 2247-2255

7- NOVEL CALCULATION HARMONIC METHOD IN ELECTRICAL POWER SYSTEM AND COMPARE WITH FFT METHOD

Rahim Ildarabadi

TPE-Conference, 4th International Conference on Technical and Physical Problems of Power Engineering, ICTPE-2008, *University of Pitesti, 4-6 September 2008, Pitesti, Romania*

8- A New Method for Simulation of Electrical Tree Growth in Solid Insulating Using Cellular Automata

R. Ildarabadi, J. Sadeh, H. R. Mashhadi, S. Torabi Iran

TPE-Conference, 3rd International Conference on, Technical and Physical Problems of Power Engineering, ICTPE-2006, *Gazi University, 29-31 May 2006, Ankara, Turkey*

9- رحيم ايلدرآبادى، رضا قاضى "ارائه روش جديد جهت محاسبه فليكر ولتاژ به منظور بهبود كيفيت توان" سيزدهمين كنفرانس مهندسى برق ايران **ICEE-2005**

10- Sensorless Speed Measurement for Universal Motor

Rahim Ildarabadi

7th International Conference on "Technical and Physical Problems of Power Engineering" 7-9 July 2011, Near East University, Lefkosa, TR Northern Cyprus

Abstract

This paper presents a new method for measurement speed of universal motors without using any speed sensor (such as speedometer, tachometer, encoders, and so on). This method uses of the affects brushes in the current motor. The wavelet transform is used for detecting affects of the brushes on current motor. The case study has been done and result of simulation shows that the presented method is able to precision measurement of speed of Universal motor.

Keywords

Speed Measurement, Sensor less Speed Measurement, Wavelet Transform, Universal Motor

11- Sensorless DC Motor Speed Measurement

Rahim Ildarabadi

8th International Conference on "Technical and Physical Problems of Power Engineering" 5-7 September 2012 Ostfold University College Fredrikstad, Norway

This paper presents a new method for measurement speed of DC motors without using any speed sensor (such as speedometer, tachometer, encoders, and so on). This method uses of the affects brushes on the current motor. A new approach is presented for determine speed of DC motor too. The presented approach has been done on a case study and results of simulation show that the presented method is able to get the precision measurement speed of DC motor instantaneously.

Keywords: Speed Measurement; Sensorless Speed Measurement; DC Motor..

a- طرح پژوهشی خارج از دانشگاه انجام شده
با عنوان : طراحی و ساخت توزین و بسته بندی زعفران (اتمام طرح)

b- طرح پژوهشی خارج از دانشگاه انجام شده
با عنوان : طراحی و ساخت توزین و بسته بندی زعفران (در حال اجرا)