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3.3.3 Number of books and chapters in edited volumes/books published and papers published in national/ international conference proceedings per teacher during last five

Year	2018-19	2017-18	2016-17	2015-16	2014-15
No.	59	37	92	62	26

Conference

2014-15

Sl. No.	Name of the teacher	Title of the book/chapters published	Title of the paper	Title of the proceedings of the conference	Name of the conference	National / International	Year of publication	ISBN/IS SN number of the proceeding	Affiliating Institute at the time of publication	Name of the publisher
1	Ch.Kranthi Rekha,K.Manjunathachari,V.Subba Rao	NA	"Speckle Noise Reduction In 3d Ultrasound Images A Review"	IEEE-2015	2015 International Conference on Signal Processing and Communication Engineering Systems	International	2014-2015	7058260	Bharat Institute of Engineering and Technology	IEEE

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2	Dr. P. Udaya Bhaskar	NA	Implementation of Predictive Control Scheme for improving power Quality in Distributed Generation	National Conference on Fast Emerging Trends in Engineering and Technology (NCOFEE T-2K15)	National Conference on Fast Emerging Trends in Engineering and Technology (NCOFEE T-2K15)	National	2014-2015	978-93-82829-43-0	Bharat Institute of Engineering and Technology	NA
3	Bolli Sridhar, Mohammad Zafar Ali Khan	NA	"Rmse Comparison Of Path Loss Models For Uhf/Vhf Bands In India"	IEEE REGION 10 SYMPOSIUM	2014 IEEE REGION 10 SYMPOSIUM	International	2014-2015	978-1-4799-2027-3	Bharat Institute of Engineering and Technology	IEEE
4	Bolli Sridhar, Mohammad Zafar Ali Khan	NA	A Novel Lmmse Based Optimised Perez-Vega Zamanillo Propagation Path Loss Model In Uhf/Vhf Bands For India"	Electromagnetics Research	Progress In Electromagnetics Research B DOI: 10.2528/PIERB15041901	International	2014-2015	1937-6472	Bharat Institute of Engineering and Technology	NA

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5	Vikas Maheshwari ,Rahul Singh Bhadauria,D.Mandal,A.K Bhattacharjee	NA	Delay Modelling Of On-Chip Rc Global Vlsi Interconne ct For Step Input	2012 World Congress on Information and Communica tion Technologie s	2012 World Congress on Information and Communication Technologies	Internati onal	2014- 2015	978-1- 4673- 4805-8	Bharat Institut e of Enginee ring and Technol ogy	NA
6	Soma Sekhar Malipatil	NA	Design And Analysis Of 10 Port Router For Network On Chip	Internation al Conference on Pervasive Computing (ICPC)	International Conference on Pervasive Computing (ICPC)	Internati onal	2014- 2015	978-1- 4799- 6272-3	Bharat Institut e of Enginee ring and Technol ogy	IEEE
7	Nirupama	NA	Security Issues and Challenge s for Wireless Sensor Network Survey	National Conference on Fast Emerging Trends in Engineering and Technology (NCOFEE T- 2K15)	National Conference on Fast Emerging Trends in Engineering and Technology (NCOFEE T-2K15)	National	2014- 2015	978- 93- 82829- 43-0	Bharat Institut e of Enginee ring and Technol ogy	NA

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8	P Udaya Bhaskar, MD Jani Pasha, G Kamalaker	NA	improving Harmonics Immunity during AC- DC Interaction in VSC HVDC Transmissi on	National Conference on Fast Emerging Trends in Engineering and Technology (NCOFEE T- 2K15)	National Conference on Fast Emerging Trends in Engineering and Technology (NCOFEE T-2K15)	National	2014- 2015	978- 93- 82829- 43-0	Bharat Institut e of Enginee ring and Technol ogy	NA
9	P. Shambu Prasad, S. Srinivasa, P. Uday Bhaskar	NA	Matrix Converters	Proceedings of National Conference on Fast Emerging Trends in Engineering and Technology	National Conference on Fast Emerging Trends in Engineering and Technology	National	2014- 2015	978-93- 82829- 43-0	Bharat Institut e of Enginee ring and Technol ogy	NA
10	D. Bala gangi Reddy	NA	Solar powered Hybrid Vehical	Proceedings of National Conference on Fast Emerging Trends in Engineering and Technology	National Conference on Fast Emerging Trends in Engineering and Technology	National	2014- 2015	978-93- 82829- 43-0	Bharat Institut e of Enginee ring and Technol ogy	NA

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11	Ch. Srinivas reddy, D. Bala gangi Reddy	NA	Brushless DC Motor Operation Using Terminal Voltage Strategy without a speed sensor	Proceedings of National Conference on Fast Emerging Trends in Engineering and Technology	National Conference on Fast Emerging Trends in Engineering and Technology	National	2014-2015	978-93-82829-43-0	Bharat Institute of Engineering and Technology	NA
12	B. Navya Sree	NA	Power quality improvement by compensating voltage sag using fault current limiter in single phase and three phase lines	Proceedings of National Conference on Fast Emerging Trends in Engineering and Technology	National Conference on Fast Emerging Trends in Engineering and Technology	National	2014-2015	978-93-82829-43-0	Bharat Institute of Engineering and Technology	NA

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13	B. Navya Sree, Uday Bhaskar, G. Kamalaker	NA	Optimized Design of dual mode electric vehicle fed by an integrated converter	Proceedings of National Conference on Fast Emerging Trends in Engineering and Technology	National Conference on Fast Emerging Trends in Engineering and Technology	National	2014-2015	978-93-82829-43-0	Bharat Institute of Engineering and Technology	NA
14	D. V. Rama Raju, nazia banu	NA	Cloud based data automation techniques for university size engineering college in india	Proceedings of National Conference on Fast Emerging Trends in Engineering and Technology	National Conference on Fast Emerging Trends in Engineering and Technology	National	2014-2015	978-93-82829-43-0	Bharat Institute of Engineering and Technology	NA
15	Ch. M. H. Sai baba, M. shiva Prasad	NA	Proposal for the application of data pruning in the code optimization	Proceedings of National Conference on Fast Emerging Trends in Engineering and Technology	National Conference on Fast Emerging Trends in Engineering and Technology	National	2014-2015	978-93-82829-43-0	Bharat Institute of Engineering and Technology	NA

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17	Chillara Somashekar, H. P. Srichnd	NA	Hydromagnetic Sverdrup Relation	Proceedings of National Conference on Fast Emerging Trends in Engineering and Technology	National Conference on Fast Emerging Trends in Engineering and Technology	National	2014-2015	978-93-82829-43-0	Bharat Institute of Engineering and Technology	NA
18	Bhagwan Reddy	NA	Design, Performance and cost benefit analysis of PV systems- A case study	Proceedings of National Conference on Fast Emerging Trends in Engineering and Technology	National Conference on Fast Emerging Trends in Engineering and Technology	National	2014-2015	978-93-82829-43-0	Bharat Institute of Engineering and Technology	NA

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20	SaiCharanDhatrika	NA	A new approach for image encryption using modified AES algorithm	National Conference on Fast Emerging Trends in Engineering and Technology (NCOFEE T-2K15)	National Conference on Fast Emerging Trends in Engineering and Technology (NCOFEE T-2K15)	National	2014-2015	978-93-82829-43-0	Bharat Institute of Engineering and Technology	NA
21	Mohammed AhsanSiddiqui&Dr. K. V. Naganjaneyulu	NA	Application of Iterative Heuristic Genetic Algorithm to solve Non-recurring Irregular Problems	National Conference on Fast Emerging Trends in Engineering and Technology (NCOFEE T-2K15)	National Conference on Fast Emerging Trends in Engineering and Technology (NCOFEE T-2K15)	National	2014-2015	978-93-82829-43-0	Bharat Institute of Engineering and Technology	NA

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22	Rao, K.P., Sao, S.	NA	Dynamic performance and control of a fuel cell power conditioning system with multilevel converter	International Conference on Smart Electric Grid	International Conference on Smart Electric Grid	International	2014-2015	978-1-4799-4103-2	Bharat Institute of Engineering and Technology	IEEE
23	Lalitha Surya Kumari, P., Damodaram, A.	NA	An Alternative Methodology for Authentication and Confidentiality Based on Zero Knowledge Protocols Using Diffie-Hellman Key Exchange	International Conference on Information Technology	International Conference on Information Technology	International	2014-2015	14918306	Bharat Institute of Engineering and Technology	IEEE

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24	HemaLatha, M., Padmanabham, P., Govarhan, A	NA	Network Quality Estimation - Error Protection and Fault Localizatio n in Router Based Network	Advances in Intelligent Systems and Computing	Advances in Intelligent Systems and Computing	Internati onal	2014- 2015	978-3- 319- 13731- 5_40	Bharat Institut e of Enginee ring and Technol ogy	Spring er
25	Siraj, A.H., Sao, S., Anjaneyulu, K.S.R.	NA	Simulation study of torque ripple of an induction motor drive under thermal variations	Proceedings of 2014 IEEE Internation al Conference on Advanced Communica tion, Controland Computing Technologie s, ICACCCT 2014	Proceedings of 2014 IEEE International Conference on Advanced Communication, Controland Computing Technologies, ICACCCT 2014	Internati onal	2014- 2015	INSPEC 148703 41	Bharat Institut e of Enginee ring and Technol ogy	IEEE

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26	Bhaskar, P.U., Nethala, D.M., Mulpuri, V.	NA	Analysis of high performance multilevel converter fed Permanent Magnet Synchronous Motor drive	International Conference on Electrical, Electronics, Signals, Communication and Optimization	International Conference on Electrical, Electronics, Signals, Communication and Optimization	International	2014-2015	INSPEC 15438838	Bharat Institute of Engineering and Technology	IEEE
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- Title:** Speckle noise reduction in 3D ultrasound images — A review
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- Author(s):** 3 Author(s) Ch. Kranthi Rekha ; K. Manjunathachari ; G. V. Subba Rao View All Authors
- Views:** 423 Full Text Views
- Abstract:** In image processing noise removal is the strenuous tasks. Noise removal forms one of the applications of segmentation. It is also the basic tool for the medical diagnosis. It helps the medical practitioner to extract the defected organ easily and give a proper diagnosis. The present scenario is to concentrate on extracting the desired tissue from the noisy image obtained through ultrasound scanning methods. Ultrasound images are the predominantly used scanning approaches because of their low-cost and non-invasive nature. Elimination of the speckle from ultrasound is the demanding aspect. This paper focuses on various researches on speckle removal in ultrasound images. Emphasis is made on which method best removes
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Implementation of Predictive Control Scheme for Improving Power Quality in Distributed Generation

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ABSTRACT

Renewable energy resources (RES) are being increasingly connected in distribution systems utilizing power electronic converters. This paper presents a novel control strategy for achieving maximum benefits from these grid-interfacing inverters when installed in 3-phase 4-wire distribution systems. The inverter is controlled to perform as a multi-function device by incorporating active power filter functionality. The inverter can thus be utilized as: 1) power converter to inject power generated from RES to the grid, and 2) shunt APF to compensate current unbalance, load current harmonics, load reactive power demand and load neutral current. All of these functions may be accomplished either individually or simultaneously. With such a control, the combination of grid-interfacing inverter and the 3-phase 4-wire linear/non-linear unbalanced load at point of common coupling appears as balanced linear load to the grid. This new control concept is demonstrated with extensive MATLAB/Simulink simulation studies. In extension we use Renewable Energy sources such as PV/Wind as the input to the four leg inverter which is used to improve power quality. The controller used in the base paper is conventional PI controller and this can be replaced with intelligent controller like Fuzzy controller.

Keywords: Fuzzy, Active power filter, current control, four-leg converters, predictive control

INTRODUCTION

Electric utilities and end users of electric power are becoming increasingly concerned about meeting the growing energy demand. Seventy five percent of total global energy demand is supplied by the burning of fossil fuels. But increasing air pollution, global warming concerns, diminishing fossil fuels and their increasing cost have made it necessary to look towards renewable sources as a future energy solution. Since the past decade, there has been an enormous interest in many countries on renewable energy for power generation. The market liberalization and government's incentives have further accelerated the renewable energy sector growth.

Renewable energy source (RES) integrated at distribution level is termed as distributed generation (DG). The utility is concerned due to the high penetration level of intermittent RES in distribution systems as it may pose a threat to network in terms of stability, voltage regulation

and power-quality (PQ) issues. Therefore, the DG systems are required to comply with strict technical and regulatory frameworks to ensure safe, reliable and efficient operation of overall network. With the advancement in power electronics and digital control technology, the DG systems can now be actively controlled to enhance the system operation with improved PQ at PCC.

However, the extensive use of power electronics based equipment and non-linear loads at PCC generate harmonic currents, which may deteriorate the quality of power [1], [2]. Generally, current controlled voltage source inverters are used to interface the intermittent RES in distributed system. Recently, a few control strategies for grid connected inverters incorporating PQ solution have been proposed. In [3] an inverter operates as active inductor at a certain frequency to absorb the harmonic current. But the exact calculation of network inductance in real-time is difficult and may deteriorate the control performance. A similar approach in which a shunt active

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RMSE comparison of path loss models for UHF/VHF bands in India

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2 Author(s) Bolli Sridhar; Mohammed Zafar Ali Khan [View All Authors](#)

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Abstract

Abstract: This paper describes a study on path loss variation in UHF/VHF bands in India from a root mean square error perspective. The aim of this study is to compare existing propagation path loss models in various parts of India. We calculate average root mean square error (RMSE) between measured path loss and those predicted by the existing path loss models. It is found that Perez-Vega and Zamanillo model is best among the 9 compared path loss models with an average RMSE of 16.93 dB. We conclude that Perez-Vega and Zamanillo model is better suited for predicting path loss in UHF/VHF bands for India.

Document Sections

- I. Introduction
- II. Radio Propagation Path Loss Models
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12:18 PM 2/16/2020

A Novel LMMSE Based Optimized Perez-Vega Zamanillo Propagation Path Loss Model in UHF/VHF Bands for India

Sridhar Bolli* and Mohammed Z. A. Khan

Abstract—Cognitive radio is the enabling technology for license-exempt access to the TV White Spaces (TVWS). There is ever increasing demand of users in the broadcasting and communication services. Large portions of unused spectrum in the UHF/VHF bands exist in India which can be used on geographical basis. This paper describes a study on path loss variation in UHF/VHF bands in India. The aim of this study is to develop and optimize a path loss model based on Linear minimum mean square error estimation (LMMSE) for India. We propose the LMMSE based Optimized Perez-Vega Zamanillo propagation path loss model. The measured path loss values, collected across India, are compared with proposed Optimized Perez-Vega Zamanillo path loss model and other existing path loss models. It is found that Optimized Perez-Vega Zamanillo propagation path loss model has the least root mean square Error (RMSE) of 13.98 dB. Other existing path loss models have root mean square Error (RMSE) value greater than 24 dB. Therefore, Optimized Perez-Vega Zamanillo propagation path loss model is best suited for predicting coverage area, interference analysis in India for TVWS.

1. INTRODUCTION

Cognitive radio identifies other radios in the environments that might use the same spectral resources and then designs a transmission methodology that minimises interference to and from other radios. It is necessary to understand the propagation channel for the identification, design, implementation and analysis of transmission methodologies. Propagation channel determines how much power emitted by transmitter is received at the receiver and also the amount of interference created at the receiver. All communication services seek frequency bands below 3.5 GHz because these frequency bands have lower propagation loss. Therefore UHF/VHF bands are ideal candidates for setting up cognitive radios. Today most of the UHF/VHF bands are used by broadcast television. The U.S. regulatory body, the Federal Communications Commission, has recently adopted rules to allow unlicensed radio transmitters to operate in the broadcast television spectrum at locations where the spectrum is not being used by the licensed services [1]. The unused TV spectrum is often termed “white spaces”. In order to utilise these “white spaces”, we need accurate channel models.

Path loss measurements and model comparison have been done in different parts of India [2–8]. In [2] field strength measurements were conducted for VHF and UHF bands at different base station antenna heights in the Coastal South India. These measured values were compared with different prediction methods of Hata, ITU-R, Blomquist and Ladell, Egli, Ibrahim and Parsons. It was found that in sub-urban and urban regions Hata’s method gave moderate agreement with the observed values. Mobile train radio measurements for UHF band in Northern India were presented in [3]. Comparison of three path loss models with measured data was presented in [3]. It was found that uniform theory of diffraction (UTD) gives good agreement in the urban zone, and over all Hata’s model shows reasonable agreement in all the environmental zones. However, the study was restricted only to Northern India.

Received 19 April 2015, Accepted 25 May 2015, Scheduled 31 May 2015

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The screenshot shows a web browser window with the URL ieeexplore.ieee.org/document/6409121. The page title is "Delay modelling of on-chip RC global VLSI interconnect for step input". The publisher is IEEE, and there is a "Cite This" button. The authors listed are V. Maheshwari, R. S. Bhadauna, Samir Kumar Jha, R. Kar, D. Mandai, and A. K. Bhattacharjee. There are 476 full-text views. The abstract states: "This paper presents an accurate and efficient model to compute the delay metric of on chip high speed VLSI interconnects. The proposed delay metric assumption is based on RC interconnect model. Interconnect has become a dominant factor in deep sub micrometer (DSM) integrated circuit (IC) technology. The Elmore delay has been the metric of choice for the performance driven design applications. But the accuracy of the Elmore delay is insufficient. For optimization like physical synthesis and static timing analysis, efficient interconnect delay computation is critical. In this paper, a delay metric using RC-int and RC-out has been formulated which computes the delay at any arbitrary point on the waveform and at any point along the interconnect line. The proposed model is based on the first three". A sidebar on the right promotes "Need Full-Text access to IEEE Xplore for your organization?" with a "CONTACT IEEE TO SUBSCRIBE" button. Below the abstract, there is a "More Like This" section with two related articles. At the bottom, a cookie consent banner reads: "IEEE websites place cookies on your device to give you the best user experience. By using our websites, you agree to the placement of these cookies. To learn more, read our [Privacy Policy](#)." with an "Accept & Close" button. The browser's taskbar at the bottom shows several open files named "naac-2020 (1).php" through "naac-2020 (5).php" and the system clock shows 12:19 PM on 2/16/2020.

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Abstract

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Abstract: Network on chip is an emerging technology which provides data reliability and high speed with less power consumption. With the technological advancements a large number of devices can be integrated into a single chip. So the communication between these devices becomes vital. The network on chip (NoC) router

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Abstract

Document Sections

I. Introduction

II. Proposed 10 Port Router

III. Result Analysis

IV. Simulation Results

V. Conclusion

Abstract: Network on chip is an emerging technology which provides data reliability and high speed with less power consumption. With the technological advancements a large number of devices can be integrated into a single chip. So the communication between these devices becomes vital. The network on chip (NoC) router is used for such communication. This paper focuses on the design analysis of 10 port router. The delay (2.571ns) and power (80.98mW) is minimized by using crossbar switch. The proposed architecture of 10 port router is simulated and synthesized in Xilinx ISE 14.4 software.

Published in: 2015 International Conference on Pervasive Computing (ICPC)

Date of Conference: 8-10 Jan. 2015 **INSPEC Accession Number:** 15058405

Date Added to IEEE Xplore: 16 April 2015 **DOI:** 10.1109/PERVASIVE.2015.7087013

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Security Issues and Challenges for Wireless Sensor Network Survey

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ABSTRACT

The intent of this paper is to investigate the security related issues, the challenges and to propose some solutions to secure the WSN against these security threats. While the set of challenges in sensor networks are diverse, this paper focus only on the challenges related to the security of Wireless Sensor Network. This paper begins by introducing the concept of Wireless Sensor Network (WSN). The introductory section gives brief information on the WSN components and its architecture. Then it deals with some of the major security issues over wireless sensor networks (WSNs). This survey paper provides the network, different types of attacks, security loop holes, their consequences and discuss the counter measures which will be beneficial for students and researchers in this area.

Keywords: Wireless sensor network, applications, protocol stack, security class, security challenges, security attacks, miscellaneous attacks.

Introduction

The emergence of sensor network as one of the dominant technology in current and coming decade [1] has posed various unique challenges to their researchers. WSN comes to spot light because of its low cost solution for a variety of practical application and real time need. One of fundamental goals for Wireless Sensor Networks (WSNs) is to collect information from the physical world. Comparing to existing infrastructure – based networks, wireless sensor networks can virtually work in any environment, especially those where wired connections are not possible. WSNs are often deployed to sense, process and disseminate information of targeted physical environments. In general, WSNs consist of battery-operated sensor devices with computing, data processing, and communicating components. The ways the sensors are deployed can either be in a controlled environment where monitoring and surveillance are critical or in an uncontrolled environment. In the uncontrolled environments, security for sensor networks becomes extremely important.

The basic networked sensor devices in WSN are a radio, a power unit, sensor, embedded processor, memory etc. The ultimate aim of each sensors in WSN is

to route collected data to high power sink/base station for user access through internet. The communication architecture and structure of an individual sensor node in WSN is shown in Figure 1. Sometimes, several WSN applications require only an aggregate value to be reported to the observer. In this case, sensors in different regions of the field can collaborate to aggregate their data and provide more accurate reports about their local regions. For example, in a habitat monitoring application [15].

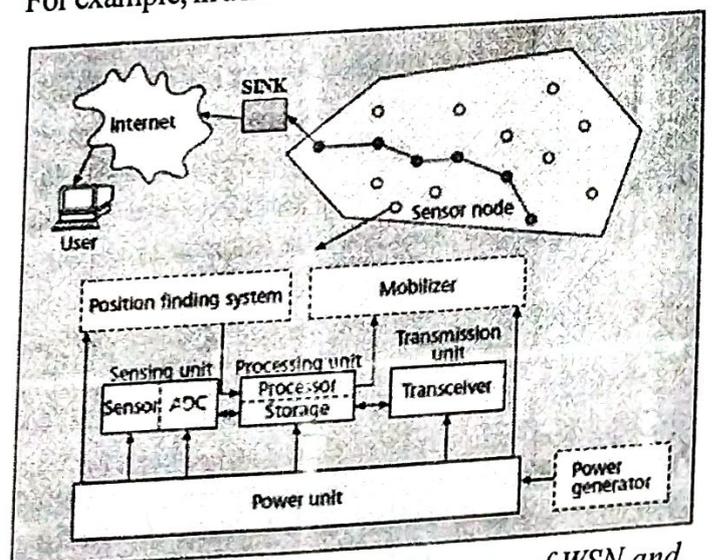


Figure 1: communication architecture of WSN and structure of a individual sensor node

Improving Harmonic Immunity during AC-DC Interaction in VSC HVDC Transmission

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ABSTRACT

Voltage Source Converter (VSC) based HVDC transmission technology has been selected as the basis for several recent papers due to its controllability, compact modular design, ease of system interface, and low environmental impact. This feature also results in the lowest possible level of converter switching losses. For this reason, they are very attractive techniques for the voltage-source-converter-(VSC) based High-Voltage DC (HVDC) power transmission systems. The application focuses on the conventional two-level converter when its dc-link voltage contains a mix of low-frequency harmonic components.

Control methods based on selective harmonic elimination pulse-width modulation (SHE-PWM) techniques offer the lowest possible number of switching transitions. Amplitude modulation (AM) is a method of impressing data onto an alternating-current (AC) carrier waveform. The highest frequency of the modulating data is normally less than 10 percent of the carrier frequency. The instantaneous amplitude (overall signal power) varies depending on the instantaneous amplitude of the modulating data. The conventional Regular Sampled PWM technique can be simply extended to allow Harmonic Minimization and also Harmonic Elimination PWM to be closely reproduced using simple algebraic equations.

FIS (Fuzzy Interference System) technique, a new controlling technique for control of harmonic immunity produce by external frequency is incorporated in this paper along with the filter.

Key Words: VSC, SHE-PWM, FIS.

Introduction

Electric power transmission was originally developed with direct current. D.C. transmission now became practical when long distances were to be covered or where cables were required. In 1950, a 116 km experimental transmission line was commissioned from Moscow to Kasira at 200 kV. The first commercial HVDC line built in 1954 was a 98 km submarine cable with ground return between the island of Gotland and the Swedish mainland.

Thyristors were applied to D.C. transmission in the late 1960's and solid state valves became a reality. In 1969, a contract for the Eel River D.C. link in Canada was awarded as the first application of solid state valves for HVDC transmission. Today, the highest functional D.C. voltage for D.C. transmission is +/- 600 kV for the 785 km transmission line of the Itaipu scheme in Brazil. D.C.

transmission is now an integral part of the delivery of electricity in many countries throughout the world. Advanced technologies, such as voltage-source converter (VSC)-based high-voltage dc (HVDC) power transmission systems [8] and [9], are essential for the restructuring of the power systems into more automated, electronically controlled smart grids. Efficient control of unbalanced compensator currents can be achieved by a control algorithm based on the D-STATCOM model [22]. D-STATCOM [25] allows separate control of positive & negative sequences currents and decoupled current control of the - frame. With the invention of fully controlled power semiconductors, such as insulated-gate bipolar transistors (IGBTs) and integrated gate-commutated thyristors (IGCTs), the VSC topologies are more attractive due to their four-quadrant power-flow characteristics.

Matrix Converters

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ABSTRACT

A carrier based modulation of matrix converter is efficient modulation scheme as compared to space vector modulation. It also eliminates harmonics and unbalanced input voltages. It is a general pulse width modulation method using carrier based modulator for an easier matrix converter control. Simulation results are presented to validate its equality with SVM.

Keywords: carrier based modulation; matrix converter; pulse width modulation;

Introduction

A Matrix converter is a direct three phase to three phase power converter with variable frequency and amplitude output voltage mainly used for induction motor speed drive. The matrix converter, shown in Fig. 1, is a direct three-phase to three-phase forced-commuted power converter which directly connects the mains power supply (r,s,t) to the motor (u,v,w) through nine fully controlled bidirectional switches. The input network (r-in, s-in, t-in) is connected to the matrix converter through an LC input filter as shown in Fig. 1. This converter, which can be decomposed in three "cells" as shown in Fig. 1, generates variable frequency and amplitude output voltages (limited to 86% of the input voltage amplitude with over-voltage modulation) with any three-phase electrical network.

This converter is able to produce sinusoidal input currents, which limits the volume of the LC input filter. This converter has a high power density and a potentially high reliability since electrolytic storage capacitors are not

required. Thus, it could become a compact industrial solution for adjustable speed drive applications feeding induction motors. The more useful and interesting modulations are the space vector modulation (SVM) and the rectifier and inverter vector (RIV) modulation. These modulations are based on graphical representation methods, duty cycle calculations, and sequenced states application to create the pulse width modulation (PWM). An 86% voltage ratio (rms fundamental output voltage divided by the rms input voltage) is obtained with these methods[1].

In fact, both modulations are equivalent and able to produce sinusoidal output voltages, even when there is unbalance or harmonics in the mains voltages. Since current references of the mains are chosen proportional to the input voltages, input currents are balanced and sinusoidal as long as the mains power supply is a perfect sinusoidal source.

Solar Powered Hybrid Vehicle

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ABSTRACT

This paper proposes a Solar Electric Powered Hybrid Vehicle (SEPHV) system which solves the major problems of fuel and pollution. An electric vehicle usually uses a battery which has been charged by external electrical power supply. All recent electric vehicles present a drive on AC power supplied motor. An inverter set is required to be connected with the battery through which AC power is converted to DC power. During this conversion many losses take place and also the maintenance cost of the AC System is very high. The proposed topology has the most feasible solar/electric power generation system mounted on the vehicle to charge the battery during all durations. With a view of providing ignited us to develop this "Solar/Electric Powered Hybrid Vehicle" [SEPHV].

Introduction

In the last years, increasing attention is being spent towards the applications of solar energy to electric and also to hybrid cars. But, while cars only fed by sun do not represent a practical alternative to cars for normal use, the concept of a hybrid electric car assisted by solar panels appears more realistic. The reasons for studying and developing a Hybrid Solar Vehicle can be summarized as follows: Fossil fuels, largely used for car propulsion, are doomed to depletion and their price tends to increase, and is subjected to large and unpredictable fluctuations. The CO₂ generated by the combustion processes occurring in conventional thermal engines contributes to greenhouse effects, with dangerous and maybe dramatic effects on global warming and climatic changes.

The worldwide demand for personal mobility is rapidly growing, especially in China and India as a consequence, energy consumption and CO₂ emissions related to cars and transportation are increasing. Solar energy is renewable, free and largely diffused, and Photovoltaic Panels are subject to continuous technological advances in terms of cell efficiency. Solar cars, powered only by the sun, in spite of some spectacular outcomes in competitions as World Solar Challenge, do not represent a practical alternative to conventional cars, due to limitations on maximum power, range, dimensions and costs. Solar vehicle: Energy is one of the most vital needs

for human survival on earth. We are dependent on one form of energy or the other for fulfilling our needs. One such form of energy is the energy from FOSSIL FUELS. We use energy from these sources for generating electricity, running automobiles etc. But the main disadvantages of these FOSSIL FUELS are that they are not environmental friendly and they are exhaustible.

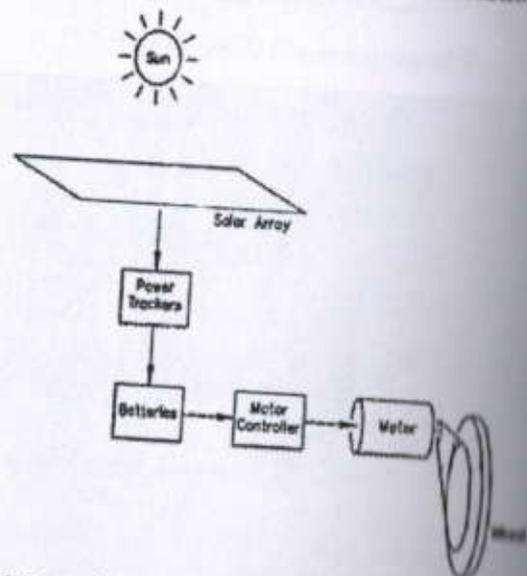


Fig. 1 Basic block Diagram Representation of Solar vehicle

To deal with these problems of FOSSIL FUELS, we need to look at the NON-CONVENTIONAL SOURCES of energy. With regard to this idea we have

Brushless DC Motor Operation Using Terminal Voltage Strategy without a Speed Sensor

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ABSTRACT

This paper presents the simulation of sensorless operation of permanent magnet brushless direct current (BLDC) motor. The position sensorless BLDC drive proposed, in this paper, is based on a difference of line voltages measured at the terminals of the motor. The proposed method relies on this difference of line voltages provides an amplified version of an appropriate back EMF at its zero crossings. The commutation signals are obtained without the motor neutral voltage. The effectiveness of the proposed method is demonstrated through simulation.

Keywords: BLDC motor, simulation, sensorless operation, zero crossing

Introduction

In the literature there are several simulation models available for BLDC motor drives. These models employ state-space equations, Fourier series or d-q axis model. Even though these models have made a great contribution in the BLDC motor drives, there is no comprehensive model for the analysis of motor used in sensorless operation [1]. The machine models are often transformed to a rotating reference frame to simplify and to improve the computational efficiency. But, this approach will not improve the computational efficiency because the d-q transformations are suitable only for machines with sinusoidal voltage as discussed in [2]. The BLDC motors are normally powered by conventional three phase voltage source inverters (VSI) or current source inverters (CSI) which are controlled based on the rotor position information obtained from hall sensors, resolvers or absolute position sensors. But these position sensors have numerous drawbacks like increase in cost, complexity in control, temperature sensitivity requiring special arrangements. These sensors reduce the system reliability and acceptability. Therefore, sensorless techniques have become a subject of great interest in recent times. A number of sensorless techniques have been developed for BLDC motor. Some of the techniques presented [3] in the literature are based on position sensing using back emf zero detection crossing, terminal voltage sensing, sensing third harmonics of the motional emf, integration of the back emf, position sensing using inductance variation, position sensing based on flux linkage variation, Extended Kalman

filter estimation or detecting the freewheeling diode conduction in open phase proposed in [4, 5].

In BLDC motors, only two out of three phases are excited at any time leaving the third winding floating. The back emf in the floating winding can be measured to determine the switching sequence for commutation of power switching devices in the 3 phase inverter. The terminal voltage of the floating winding with respect to the neutral point of motor is needed to get the zero crossing time of the back emf. The sensorless control technique based on Zero Cross Point (ZCP) of the back emf has been widely used for low cost application proposed by J. Shao [6]. In the ZCP method the back emf cannot be obtained when the BLDC motor is at standstill or operating nearly zero speed as discussed by Yen-Shin Lai and Yongkai Lin [7]. Therefore, a special control is needed for smooth and reliable sensorless control operation of BLDC motor [8].

In this paper a Matlab/Simulink Sensorless operation is developed. This paper proposes a simple and reliable method for the detection of back EMF zero-crossings for sensorless operation. In this paper, the zero crossings of the back EMF are estimated indirectly from the terminal voltages measured with respect to dc negative terminal. The method does not involve any integrations. Further, since line voltages are used, the requirement of neutral potential has been eliminated. This also eliminates the common mode noise. Device drops and their variations would also not play a part since line voltages are used. Using this model of BLDC motor suitable for the dynamic

Power Quality Improvement By Compensating Voltage Sag Using Fault Current Limiter in Single Phase and Three Phase Lines

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ABSTRACT

Potential fault current levels in power grids is approaching, and may eventually exceed the short-circuit-current limits of existing protection devices. Alternative to expensive system upgrades of protection devices, Fault Current Limiters (FCL's) provide more cost-effective solutions to prevent old protection devices and other equipment on the system from being damaged by excessive fault currents. Short circuit faults are often the origin of voltage sag at a point of common coupling (PCC) in a power network, the extent of the voltage sag is proportional to the short circuit current level, reducing the fault current level within the network can reduce voltage sags during faults and protect sensitive loads that are connected to the PCC. The proposed structure prevents voltage sag and phase-angle jump of the substation PCC after fault occurrence. As a result, other feeders, which are connected to the substation PCC, will have good power quality. In this paper a three phase fault current limiter is proposed. A Matlab/Simulink model is developed and simulation results are presented. Finally the simulation results are validated through experimentation.

Keywords: Fault current limiter (FCL), point of common coupling (PCC), power quality (PQ), semiconductor switch, total harmonic distortion (THD), voltage sag.

Introduction

Power quality variations are classified as either disturbances or steady state variations. Disturbances pertain to abnormalities in the system voltages or currents due to fault or some abnormal operations. Steady state variations refer to rms deviations from the nominal quantities or harmonics. In general these are monitored by disturbance analyzers, voltage recorders, harmonic analyzers etc. However with the advancement in the computer technology, better, faster and more accurate instruments can now be designed for power quality monitoring and analysis.

The input data for any power quality monitoring device is obtained through transducers. These include current transformers, voltage transformers, Hall-effect current and voltage transducers etc. Disturbance analyzers and disturbance monitors are instruments that are specifically designed for power quality measurements. There are two categories of these devices - conventional analyzers and graphics-based analyzers.

Conventional analyzers provide information like magnitude and duration of sag/swells, under/over voltages etc. Graphic-based analyzers are equipped with memory such that the real-time data can be saved. The advantage of this device is that the saved data can be analyzed later to determine the source and cause of the power quality problems.

Voltage sag is an important PQ problem because of sensitive loads growth. Worldwide experience has shown that short-circuit faults are the main origin of voltage sag and, therefore, there is a loss of voltage quality. This problem appears especially in buses which are connected to radial feeders [1]-[6]. Faults at either the transmission or distribution level may cause transient voltage sag or swell in the entire system or a large part of it. Also, under heavy load conditions, a significant voltage drop may occur in the system. Voltage sags can occur at any instant of time, with amplitudes ranging from 10-90% and a duration lasting for half a cycle to one minute. Further, they could be either balanced or unbalanced, depending on the type of fault and they could have unpredictable magnitudes, depending on factors such as distance from the fault and the transformer connections. Voltage swell, on the other

Optimized Design of Dual Mode Electric Vehicle Fed by an Integrated Converter

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ABSTRACT

A new integrated circuit for motor drives with dual mode control for EV/HEV applications is proposed. The proposed integrated circuit allows the permanent magnet synchronous motor to operate in motor mode or acts as boost inductors of the boost converter, and thereby boosting the output torque coupled to the same transmission system or dc-link voltage of the inverter connected to the output of the integrated circuit. Moreover, a new control technique for the proposed integrated circuit under boost converter mode is proposed to increase the efficiency. The proposed control technique is to use interleaved control to significantly reduce the current ripple and thereby reducing the losses and thermal stress under heavy-load condition. In contrast, single phase control is used for not invoking additional switching and conduction losses under light load condition.

In this paper we can connect more number of batteries. Which are bi directional and these are used for different types of applications by reducing the switches which are used for the required operation. In this paper we may get the output voltage is increased up to 3 times (90v to 270v), only 9 switches are used for the operation of inverting, bidirectional power flow for three sources, when used a conventional existing converter it may use 12 switches for the same operations and efficiency will improve high compared to other methods.

Key Words: EV/HEV, ICE, SMPS, DCM, CCM, PWM

INTRODUCTION

A hybrid electric vehicle (HEV) is a type of hybrid vehicle and electric vehicle which combines a conventional internal combustion engine (ICE) propulsion system with an electric propulsion system. The most common form of HEV is the hybrid electric car, although hybrid electric trucks (pickups and tractors) and buses also exist.

Modern HEVs make use of efficiency-improving technologies such as regenerative braking, which converts the vehicle's kinetic energy into electric energy to charge the battery, rather than wasting it as heat energy as conventional brakes do. Many HEVs reduce idle emissions by shutting down the ICE at idle and restarting it when needed; this is known as a start-stop system.

With the advancement of power electronics, micro processors and digital electronics, typical electric drive systems now a day are becoming more compact, efficient, cheaper and versatile. The voltage and current applied to

the motor can be changed at will by employing power electronic converters. AC motor is no longer limited to application where only AC source is available, however, it can also be used when the power source available.

A new integrated circuit for motor drives with dual mode control for EV/HEV applications is proposed. The proposed integrated circuit allows the permanent magnet synchronous motor to operate in motor mode or acts as boost inductors of the boost converter, and thereby boosting the output torque coupled to the same transmission system or dc-link voltage of the inverter connected to the output of the integrated circuit. In motor mode, the proposed integrated circuit acts as an inverter and it becomes a boost-type boost converter, while using the motor windings as the boost inductors to boost the converter output voltage. Moreover, a new control technique for the proposed integrated circuit under boost converter mode is proposed to increase the efficiency. The proposed control technique is to use interleaved

Cloud Based Data Automation Techniques for University Size Engineering Colleges in India

(A case study of attendance automation using PHP and MySQL is elucidated)

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ABSTRACT

Paperless office is the slogan adopted by organizations big and small nowadays. The transformation from paper files, register books, and written documentation to digital world adaptation is a prerequisite for any modern organization to succeed. The emergence of Internet, Cloud based ICT services, the maturity of RDBMS, web technologies, the low cost availability of smart phones, tablets and server systems, the widespread 2G, 3G, infrastructure coupled with WIFI and broadband connectivity have all contributed for organizations to go digital to manage their day-to-day activities. This is not just the reduction of paper labor, it puts your information at your finger tips. It gives the flexibility of data input from anywhere, any time. It reduces the worker tension. Most of all it provides the required report instantaneously to the management or customer. This paper describes the case study of how the above technologies are used for BIET's attendance automation project, one of the modules that are part of a broader initiative in the direction of the college data automation and treading towards a paperless office, as it aims towards a deemed university status.

The Organization is BIET(Bharat Institute of Engineering and Technology). Department involved is CSE. The module worked out is attendance automation. The tools used are MySQL, PHP, on the server, hosted at GODADDY.COM. The web site is bieta.ac.in.

Entity Identification and Table Design

The motive is to make Bharat Institute of Engineering and Technology, to run its attendance reports automated. During the brain storming session, a list of entities were identified that can play their roles in the application development. The entities include 1) departments, 2) student sections, 3) currently conducted subjects with assigned teachers for each section. Data tables were designed in MySQL database of version 5.5 as the list given in Fig 1.

Identical table names have identical structures. For example the structure of table 2_cse_a is as in Fig. 2. This table stores student list of that section as well as the current attendance report details, generated at any instance. The same structure follows for the remaining tables like 2_cse_b, 2_cse_c, 3_cse_a, 3_cse_b, 3_cse_c, 3_it_a, 4_cse_a, 4_cse_b, 4_it_a, 4_it_b. as well.

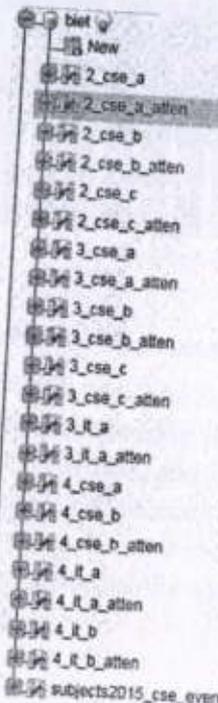


Fig 1: Data tables in MySQL that were used in this application.

Proposal for the Application of Data Pruning in the Code Optimization

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ABSTRACT

In the Compiler Construction, code optimization is the process of tuning the code or output of a compiler in a fine behaviour in the aspect of program execution. Optimization is commonly implemented by some optimizing transformations and algorithms which inputs a semantic analyser and transforms it to an equivalent output. The proposal is to apply the data mining concept in order to optimize the code by eliminating the dead code by applying the pruning algorithms for code optimization. The pruning algorithm will decide the optimized size code of the given code. For this, reduced error pruning may work in better terms by minimizing the error and improving the efficiency of the code.

Keywords: Optimization, semantic analyser, dead code, pruning, reduced error pruning.

I. Introduction

Generally, in the design of compilers a program optimization involves applying of algorithms and finite rules^[1] to some program code in order to execute it with less memory storage and rapidly too. The process of optimization is not done in a single step, instead it has to undergo the multiple steps like intermediate code generation, target machine code etc. The basic idea to complete the step of optimization is to produce and carry on with the transformation chains. Intermediate code is made simpler and explicit by decomposing the problem of code generation into simpler nodes.

The code when it is reached to the stage of optimization from the previous step of semantic analysing, it is pre located for the pruning techniques^[2]. Since data mining can be used to extract the useful pattern from the large sets, here also it is proceeded. The code which is really redundant and unnecessary is pruned by the different pruning operations. The code is formed into a decision tree where it has no incoming edges. Each part of the node of the decision tree is checked for the duplicate and redundant data of the code. This is easily done by the pruning technique called Reduced Error Pruning which

starts with the leaves and the code is trimmed without losing its original functionality.

II. Code Optimization

Code optimization is an important and complex phases of a compiler design. The technique is generally considered in terms of different code transformations to make the program run faster. The size of the code, cost measure and the execution time are the constraints to be dealt with, in the phase of optimization of the code. The intermediate code allows certain other optimizations to be carried out in some representations like 1) Post fix notation 2) Syntax tree 3) Three address code. The last representation as mentioned has an equivalent three address representations for each arithmetic expressions For example, consider the expression.

$$x=y+z$$

$$\text{Temp}=x+y$$

$$C=\text{Temp}$$

Where, x, y, z are the names of the variables.

Moreover, pseudo Intermediate Representation termed as three address codes uses the virtual registers to carry out the TAC form of representation.

A Step by Step Process of Nurturing Ethical Values in Professionals

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ABSTRACT

There is a wrong perception that 'ethical values have no place in today's world. Unethical practices have crept into politics, government, business and educational sectors. Today, media glorifies a person who got rich by any means, people appreciate and follow the one who is visiting the courts/jail for illegal activities and advertisements are teaching bad ethics. An important concern is regarding today's youth who speak bad language, do not respect teachers/elders, influenced by different media are getting into bad habits. In spite of adverse conditions there are few individuals and organizations that are following 'ethical practices' and showing the international community that India still preserves values. This paper offers a Step-by-Step process of nurturing ethical values.

Introduction

A learned group of people were asked "What values they teach their children"? They were quite. When they were pursued to give an answer, they responded that they do not teach values to their children, because they feel that it is impractical to live in today's world with values. Then the group was asked to tell the story of Sri Satya Harishchandra. They replied that he had some values in life but had to face many problems. Again they were asked 'what happened at the end of all the hardships?'. The group was remembering the painful part of following values but were not remembering the good part, that Satya Harishchandra was blessed with all the riches, his son was brought back to life and his name is remembered even today. *The focus was more on the hardships than on the benefits of virtuous life.*

What are ethical values?

- "That which is selfish is immoral, and that which is unselfish is moral" - Swami Vivekananda
- "The process through which individuals apply their personal values, beliefs, and attitudes to new, dynamic situations in the workforce in order to make, implement, and evaluate optimal decisions" - Anonymous
- "Ethics means trying to achieve a trade-off between economic objectives and social obligations" - Anonymous

- "Ethics are moral principles derived from the Divine consciousness, which are expressed in holy scriptures, and are tested over time to give success if followed and failure if neglected" - Author

Examples of ethical values are

- A prosperous life
- Selling quality product to the customer at right price
- Fair workload and salary to the workers
- Equal opportunity for all
- Security for the loved ones
- A sense of accomplishment
- Inner peace and harmony
- Respect and admiration from others

Reasons & Consequences of Unethical Living

Once upon a time there was a Milkman, in a village, who used to sell milk adulterated with lot of water. With time, he got rich and wanted to expand his business. So, he was on his way to a nearby town to purchase new cows. On his way he saw a river and he wanted to take bath. He kept his moneybag on the riverbank, and was enjoying his bath. A hungry monkey caught hold of the moneybag, assuming it to be food bag, climbed the tree, and to its disappointment only found rupees. We all know that monkey can't eat rupees, so in the process of searching

Hydromagnetic Sverdrup Relation

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ABSTRACT

Resting ocean of horizontally uniform stratification is subject to spatially uniform buoyancy loss at the sea surface, and then gravitational instability ensues in which buoyancy is drawn from depth by upright convection. But if spatial inhomogeneities in the ambient stratification or the forcing are present (as always exist in nature), then horizontal density gradients will be induced and, within a rotation period, horizontal currents in thermal-wind balance with those gradients will be set up within the mixed layer. There are two important consequences on the convective process: (1) Upright convection will become modified by the presence of the thermal wind shear; fluid parcels are exchanged not along vertical paths but, rather, along slanting paths in symmetric instability. Theoretical considerations suggest that this slantwise convection sets the potential vorticity of the mixed layer fluid to zero but, in general, will leave it stably stratified in the vertical. (2) The convective process ultimately gives way to a baroclinic instability of the horizontal mixed layer density gradients. The resulting baroclinic waves are important agents of buoyancy transport through the mixed layer and can be so efficient that the convective process all but ceases.

In mid-latitudes the large scale currents system may be understood using the planetary geostrophic equations of motion. Applying these allows us to understand formation of the great wind-driven gyres, with Sverdrup balance providing a solid foundation on which to build. As we approach lower latitudes the Coriolis parameter, f decreases and the Rossby number increases and one might expect that dynamics based on geostrophic balance will ultimately fail.

The main aim of this paper is to present a Sverdrup relation in a stress driven conducting ocean model under the assumption of baroclinic model.

Keywords: coriolis force, pressure gradient, magnetic interaction parameter, Ekman number, Vortex tubes.

1. Introduction

Winds blowing along the ocean's surface exert forces that set the oceans in motion, producing both currents and waves. Ocean currents are computed from the observed distribution of density on the assumptions (i) that the horizontal pressure gradient is balanced by the coriolis force and (ii) that the horizontal velocities and the horizontal pressure gradient vanish at a moderate depth. In order to maintain the permanent ocean current, energy must be supplied to the ocean. This energy can be supplied by the effects of heating and cooling or by the stress which the prevailing winds exert on the sea surface.

The main aim of this paper is to present a Sverdrup relation in a stress driven conducting ocean model. The preliminary aspects of the problem and the mathematical interpretation of Hydrodynamic Sverdrup relation and the Hydro magnetic Sverdrup relation are presented.

2. Preliminary aspects of the problem

In deriving the relationship, we assumed that the flow is baroclinic and that the wind-driven circulation vanished at some depth of no motion. In addition, a uniform vertical magnetic field is applied.

The hydromagnetic β -plane momentum equation i.e

$$\rho(\bar{q} \cdot \bar{V})\bar{q} + \rho f \bar{k} \times \bar{q} = -\bar{v} \cdot \bar{p} + \bar{J} \times \bar{B} + \rho \nu \nabla^2 \bar{q}$$

The equations governing the steady flow of an incompressible electrically conducting fluid in the presence of a magnetic field, and referred to a frame rotating with an angular velocity Ω is given by,

$$-f v = -\frac{1}{\rho} \frac{\partial p}{\partial x} + \alpha^2 j_y + E \nabla^2 u \quad (1)$$

$$f u = -\frac{1}{\rho} \frac{\partial p}{\partial y} - \alpha^2 j_x + E \nabla^2 v \quad (2)$$

Design, Performance and Cost Benefit Analysis of PV System- A Case Study

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Abstract

Rapid technological progress, combined with falling costs, a better understanding of financial risk and a growing appreciation of wider benefits, means that renewable energy is increasingly seen as the best solution. Today's world needs uninterrupted qualitative electrical power supply with high reliability which plays a prominent role in the evolution of industry, agriculture sector e.t.c. The electricity sector in India had an installed capacity of 258.701 GW as of end January 2015. Renewable Power plants constituted 28.43% of total installed capacity and Non-Renewable Power Plants constituted the remaining 71.57%. Electrical power that derived from fossil fuels is producing high pollution one side. On the other hand electrical power demand is continuously escalating day to day. Power generation from photo-voltaic cells can solve the above mentioned twin problem

This paper presents a case study of 1MW solar photo-voltaic plant at Jurala, Mahabubnagar district, Telangana state, India. The methodology for design, performance, cost benefit analysis and peak load sharing during day time is narrated. It also improves power quality. A Realistic cost benefit analysis requires evaluation models that can recognize the erratic nature of solar/ PV system and its inter dependence of random variables inherent in them. For the proposed analysis a period of three years (2012,2013,2014) is considered. The annual average energy generated during the three years is 16,82433. The eco-friendly nature of Solar photo-voltaic system and its per unit cost benefit analysis are described. This study gives number of re-commendations to improve power output of solar photo-voltaic system.

Keywords- PV, Insolation, Cost benefit analysis, Peak load sharing, Inverter e.t.c

Empower Different Levels of Confide Concealment in Preventive Data Mining

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ABSTRACT

Many organizations are accepted perturbation techniques for privacy data maintenance. Previous techniques have not provided the accurate solution. In real time applications widely introduces the single level trust perturbation approach of data miners. Those data miners are have limited scope in privacy protection. In existing system another way of protection environment is available that is random perturbation. Random perturbation approach analyze the individual perturb values and publish the data. Different users access the data with different patterns. It may chance leakage of internal copies then to get the data loss problems. It has less number of perturb copies and show the results are lower trust. Here we expand the scope to increase the privacy protection with Multi level trust privacy preserving data mining. Malicious user access the different number of perturb copies combine the verification procedure with original perturb data. This is called reconstruction procedure. After verification there is no data release. Most of the attackers are detected here using MLT-PPDM. Here in different number of perturb copies maintain the correlation process and increase the trust levels. MLT-PPDM proposed solution is the robust design and derive the good privacy goal. Our approach prevents all the number of attackers with on-demand perturb approach environment. This is good and accurate model in detection and prevention of data leakage malicious users.

Keywords: Perturbation approach, Privacy data maintenance, Reconstruction procedure, on-demand perturbation.

Introduction

Here we create third parties for verification and release the data. Previous single level third party trust and individual perturb copies based evolution is provides the unpredictability solution in data leakage detection users. Single level trust assumption is the risky process. It is the limited trust value identification by third parties. Present mining department people receives here less number of perturb copies information. Here there is no reconstruction procedure. It does not give the desirable solution. Sometimes internal copies it may chance to leakage here we get the problem like data loss here.

Now here in this implementation we prefer multiple number of perturb copies data miners for increasing the trust levels. High trust levels based environment control the attackers without any data leakage and data loss here. Reconstruction procedure also it may chance to eliminate or prevent the attacker's information in implementation.

In implementation we prefer additive perturbation approach. In original data we add the noisy data create the perturb copy information. We maintain the communication with correlation as a one-one mapping process. This is completely one systematic procedure for detection and prevention of data leakage users. This is great solution with high trust levels.

Related Work

In many number of real time applications researchers are observe the problems. Control the problems with different solutions are available previously. Solutions are available related to different number of categories. First category approach is secure multi party computation environment. We forward the own input to process the data without any inferences. This kind of mutual communication is not trustful. Different users enter the different number of patterns inputs information. This approach is very complex and expensive also.

Secure multi party computations prefer generic algorithms in analysis part environment. These algorithms are mine the data of own inputs information this approach is extraordinary complex and expensive in mining. Secure multi party computations provides the impractical solutions information.

Next secure multi party computations we prefer to implement the horizontal approach for reducing the cost. New algorithms are introduced here. Those algorithms are decision trees, association rule mining, frequent pattern mining and k-means clustering algorithm. These algorithms for mining purpose we use the less amount cost utilization only. This data mining algorithms gives the distrustful results only.

A New Approach for Image Encryption using Modified AES Algorithm

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ABSTRACT

Today with the tremendous development of various technologies like multimedia, research on security is becoming more important. In providing security Cryptography places a very crucial role. Even though there are many cryptographic algorithms to provide security, they are not up to the satisfactory level of the users. So there was a need for research on inventing new algorithms or modifying existing algorithms. In this paper we proposed an enhanced AES algorithm for image encryption which can be used to encrypt using AES-128 bit key. The proposed modifications in this paper are: repositioning the image pixels to break the correlation between them, randomization of key and hiding the key value into the encrypted digital image. So the proposed method provides more security.

Key words: Advanced Encryption Standard, Image Encryption, Key hide

Introduction

With the rapid development of multimedia technology multimedia data like images, videos, audios are used in various applications like entertainments, education, advertisements, and politics. There are different types of encryption algorithms available like AES, DES and Blowfish etc. These algorithms are very good at encrypting text data but coming to multimedia data these data is large in volumes and also there is high redundancy. For example, the image shown in Fig:1(a) below is encrypted by AES algorithm directly(ECB mode) and the resultant image is shown in Fig1(b). We can say that Fig1(b) is still intelligible. Hence the security is low. This is happened because the correlation between the adjacent pixels in an image cannot be break by AES algorithm. In real time applications we need better encryption algorithm so we go for new encryption algorithms or modification to existing algorithms.

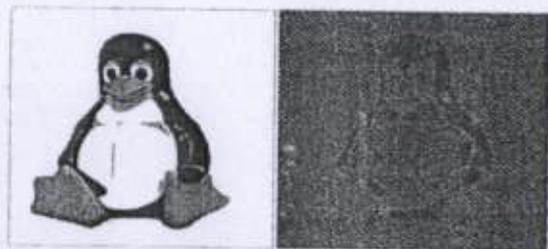


Fig 1: (a) Original image (b) Cipher image

In this paper we introduced a new encryption algorithm as a modification to AES algorithm. The modification is mainly focused on breaking the correlation between the image pixels by shifting pixel position, randomization of key and hiding the key into the encrypted digital image. For multimedia data the correlation between the image pixels is too high, AES cannot break this relation between pixels. In our enhanced AES algorithm we break the correlation between the pixels by shifting the pixel position row wise and column wise. In our proposed method we randomize the key values also.

Application of Iterative Heuristic Genetic Algorithm to Solve Non-recurring Irregular Problems

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ABSTRACT

One way of solving irregular, non-iterative and non-concurrent problems, efficiently, is to map them to an array of processors (a.k.a. processor array). These irregular problems are usually represented in the form of a Data Flow Graph (DFG). Mapping DFGs to a processor array is an NP-Complete combinatorial optimization problem. In this paper we discuss implementation issues related to finding a sub-optimal solution to such problems using Genetic Algorithms. Goodness of solution is measured with respect to the number of processors used, processor utilization, and through-put. Experimental results are presented. This paper is an attempt to bring forth practical aspects of much proposed theoretical solutions in the field

Introduction

Many regular problems such as digital signal processing, image processing, pattern recognition, etc., can be implemented efficiently using array processors such as Systolic Arrays and Wavefront Arrays [10][11]. But when these processors are used for computations which are not highly regular, their performance degrades.

Regular expressions are those expressions which contain some kind of repetition, homogeneity or regularity in them. For example, multiplication of matrices is regular in the sense that if an efficient method is developed to compute the product of a 2×3 matrix with a 3×5 matrix then the same method can easily be extended to multiply a 100×152 matrix with a 152×1076 matrix, or any other multipliable matrices. On the other hand, if an efficient method of computation is found to evaluate the expression $x^2 + 2xy - 32x^4$ then it cannot be extended to evaluate another expression such as

$x^2 + 2xy - 32x^4 + 4x^2y - 17x^2y^2 + 12y$. In such cases it is difficult to find an efficient way of computing these expressions using regular Array Processors such as Systolic Arrays or Wavefront Array Processors. One solution to implementing irregular computations is to use a "Dataflow Processor Array", also called "Dataflow Array Processors".

An "Array Processor", in its simplest form, consists of a set of Processing Elements (or PEs), interconnected according to some topology. In an Array Processor, at any given time, different Processing Elements execute different parts of the computation. Each of these PEs is

basically a microprocessor with a set of microinstructions, registers, and local memory. An example Array Processor is shown in Figure 1. In this figure the topology used is octagonal, which means, any PE has eight other PEs as its immediate neighbours. Other possibilities include linear topology, quadrangular topology, hexagonal topology, or cubical topology.

One of the possibilities of performing a given computation using Array Processors is as follows. After dividing the given computation into a set of basic sub-tasks, and sub-tasks allocated (or mapped) to individual PEs, they are not scheduled using any scheduling scheme. Instead, each PE is programmed to execute its given sub-task as soon as the data for the sub-task becomes available. Hence, Dataflow Array Processors are self-scheduling and exhibit maximum parallelism.

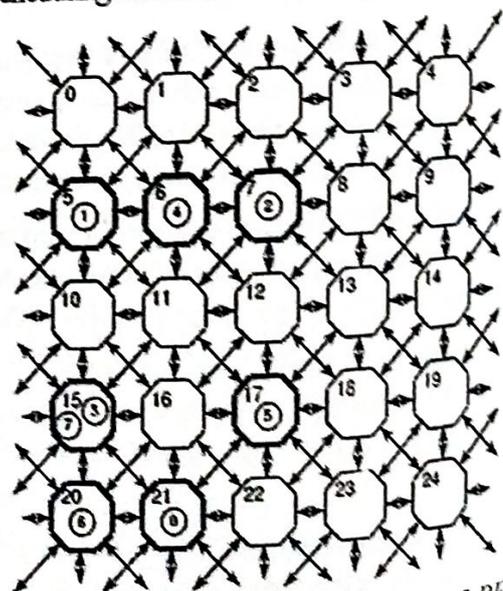


Fig 1: A Basic Array Processor with 25 PEs

Dynamic Performance and Control of a Fuel Cell Power Conditioning System with Multilevel Converter

K. Prasada Rao and Sukhdeo Sao

Abstract—In this paper, the dynamic performance of a proton exchange membrane (PEM) fuel cell power conditioning system with multilevel converter using reduced number of switches is presented. All auxiliary components need to be controlled for optimum operation of fuel cell when the system experiences varying load and voltage changes. The dynamic performance of the system is examined by three conditions including reference voltage variation, load variation and with non linear load. Dynamic performance of a PEM fuel cell system by simulation using Matlab/simulink is investigated. The simulation results for variation of reference voltage, load variation and with non linear load are presented. Based on these results obtained a suitable power conditioning system as well as a controller can be designed for efficient operation of PEM fuel cell.

Index terms— Boost converter, fuel cell, multilevel converter, power conditioning system, proportional-integral (PI) controller, total harmonic distortion (THD).

I. NOMENCLATURE

I_a	Stack current
A_{fc}	Fuel cell active area
n	Number of fuel cells in the stack
E	Open circuit voltage
V_{act}	Activation loss
V_{ohm}	Ohmic loss
V_{conc}	Concentration loss.
I	Cell current density (mA/cm^2)
E_0	Reference potential at unity activity
R	Universal gas constant,
P_{H_2}	Partial pressure of hydrogen
P_{O_2}	Partial pressure of oxygen
P_{H_2O}	Partial pressure of vapor
f	Switching frequency

II. INTRODUCTION

The conventional fossil fuel energy sources such as petroleum, natural gas, and coal which meet most of the world's energy demand today are being depleted rapidly. The growing concerns about environmental pollution and energy

shortages have made renewable technologies an attractive option. Fuel cell technology can play an active role in meeting the growing demands for renewable energy. Fuel cell (FC) systems have been showing up as a promising alternative due to their high efficiency, low aggression to the environment, excellent dynamic response, superior reliability and durability in space, automotive, and stationary applications [1]. In particular, proton exchange membrane fuel cell (PEMFC) is considered as a great alternative for distributed sources of energy. PEMFC produce water as by-product waste, operating at low temperatures and allowing fast startup. PEMFC use a solid polymer as the electrolyte, reducing construction, transportation, and safety concerns [1]. A fuel cell is an electrochemical cell that converts a source fuel directly into an electrical current. It generates electricity inside a cell through reactions between a fuel and an oxidant, triggered in the presence of an electrolyte through reactions between a fuel and an oxidant. The reactants flow into the cell, and the reaction products flow out of it, while the electrolyte remains within it. Fuel cells can operate continuously as long as the necessary reactant and oxidant flows are maintained [2]. Photovoltaic, wind energy and fuel cell are most common type of renewable energy sources connected to the grid. DC-DC converters are required to adjust the variable and low quality output voltage of PV or fuel cells. DC-AC converters are also required for PV or fuel cells to generate required voltage and frequency for grid connection [3]. Power flow in fuel cell based multilevel converter is shown in Fig.1. Fuel cells have high power density and efficiency. During transients to prevent membrane damage as well as detrimental degradation of the fuel cell stacks voltage and oxygen depletion, it is necessary to design better control scheme to achieve optimal air and hydrogen inlet flow rates using current drawn from fuel cell [4].

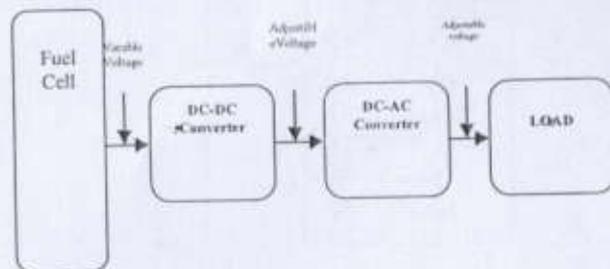


Fig. 1. Power flow in fuel cell based multilevel converter

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