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Paper Title: Sensorless Control of Induction Motor Drive Using Direct Synthesis for Low Speed

Abstract: This proposed paper proposes the controlling of Induction motor drives. The induction motor dynamics can be compared to that of a DC motor with fast transient response if the flux producing and torque producing components of the stator current can be controlled independently which means it is possible to control the amplitude and phase angle independently. For high performance, variable speed applications, the Induction Motors are used widely due to its low cost, low maintenance, requirement, robustness and reliability, thus replacing the DC motor drives. For wide range of speed applications and fast torque response, IMs perform satisfactory with the vector control strategy. Because of low maintenance and robustness, induction motors have many applications in industries. Speed control of induction motor is more important to achieve maximum torque and efficiency. Various control techniques such as scalar control, vector control, Sensor-less control are used. These Schemes suffers from parameter sensitivity and limited performance at low speed of operation. To make the system sensorless, we go for rotor speed estimation using direct synthesis of state equation, as the closed loop control requires the speed sensor. By using speed sensor, the IM becomes more costly and less reliable and increased maintenance cost. The different simulation results are observed and studied and the analysis of the different simulated results are presented.

Keywords: sensorless, direct synthesis, drive, vectorcontrol.

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Paper Title: Advanced Control of Direct Torque Control of Induction Motor Drive Using Pi Based Fuzzy Logic Controller

Abstract: A Variable-Frequency Drive is a type of adjustable-speed drive used in Electro-Mechanical drive systems to control the AC motor speed and torque by varying motor input frequency and voltage. Variable-Frequency Drives are used in applications ranging from small appliances to the largest of mine mill drives and compressors. Over the last four decades, Power Electronics technology has reduced Variable-Frequency Drive cost and size and has improved performance through advances in semiconductor switching devices, drive topologies, simulation and control techniques, and control hardware and software. The speed control of the Variable-Frequency Drive is of two types; Scalar and Vector. Scalar Control is based on the relationships valid in the steady state conditions, only magnitude and frequency of voltage, current and flux linkage are controlled. Vector Control is based on relationships valid for dynamic states, not only magnitude but also instantaneous positions of voltage , currents and flux. Direct Torque Control is one of the Vector Control method to control the Variable Frequency Drives. The main drawback of the DTC of IMD using conventional PI controller based SR is high torque, stator flux ripples and speed of IMD is decreasing under transient and steady state operating conditions. The work of this project is to study, evaluate and compare the technique of the conventional DTC and DTC-FLC applied to the induction machines through MATLAB/simulink.

Keywords: Induction Motor Drive, Direct Torque Control (DTC), Fuzzy Logic Controllers (FLC).

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Authors:	**D. Thejasvi, P. Ram Kishore Kumar Reddy**	
Paper Title:	**Dual Mode Control of Motor Drive with Integrated Inverter/Converter Circuit for EV/HEV Application**	

Abstract: The system configuration including green power generator, energy storage element, dc appliance and equipment, and energy management system (EMS) with fuzzy logic will be introduced. The proposed integrated circuit allows the machine 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. Enhancement of a renewable power management system with intelligence control techniques (Fuzzy) for a micro grid system. Modeling, analysis, and control of distributed power sources and energy storage devices with MATLAB/ Simulink are proposed, and the integrated monitoring EMS is implemented. To improve the life cycle of the battery, intelligence control techniques manage the desired state of charge. The controller is to optimize energy distribution and to set up battery state of charge SOC parameters. In the development of the green energy systems, a control method is required to optimize energy distribution of a micro grid system. The design concept of this study was to increase the useful life of lithium batteries and to include charge and over discharge protection mechanisms. The power generator includes PV panels, wind turbines, and fuel cells. The fuel cells provide base power for the emergency loads when the system is operated during a power failure. Maximum power point trackers are associated with PV panels and wind turbines to draw maximum power, which is fed into the dc grid. The loads are connected to the grid and supplied from the grid directly. If there is power shortage, the bidirectional inverter will take power from the ac grid and it is operated in rectification mode with power factor correction to regulate the dc grid voltage within a range of 380 ± 20 V.

Keywords: Energy management system (EMS), Fuzzy Logic, State of charge (SOC), Micro grid, MATLAB/SIMULINK

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Authors:	**Amit Saxena, Leeladhar Kumar Gavel, Madan Madhaw Shrivas**
Paper Title:	**Rough Sets: An Overview, Hybridization and Applications**

Abstract: Rough set theory has emerged as a useful mathematical tool to extract conclusions or decisions from real life data involving vagueness, uncertainty and impreciseness and is therefore applied successfully in the field of pattern recognition, machine learning and data mining. This paper presents basic concepts and terms of rough set theory. The paper also presents hybridization approach of rough sets with various other established techniques along with developments from time to time.

Keywords: Pattern recognition, rough sets, hybridization of rough sets, neural networks, fuzzy sets.

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5.

Authors: **Anitha N, Anirban Basu**

Paper Title: **Neural Network Based Resource Allocation using Run Time Instrumentation with Virtual Machine Migration in Cloud Computing**

Abstract: The enterprise level and the market level both are seeing a huge growth in the cloud computing. The resource is accessed in a large with better way and also globally. An individual or organization can lease the computational or storage resources, in return reducing the cost of the infrastructure. The resources optimization is one of the major issue faced in the cloud computing for the cloud service providers. Most of the optimization of resources allocation is done after the calculation of the resources needed and on the go. In this paper, a mathematical system model for the resource allocation using neural network with run time instrumentation has been proposed. The proposed model shows the better resource utilization.

Keywords: Cloud Computing, Deep Inspection, Instrumentation, Machine Learning, Neural Network,

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6.

Authors:	**Murat Copcu, Hong-In Cheng**
Paper Title:	**The Quality of Contextual Experience of Multimedia on the Smartphone**

Abstract: The smartphone is now an essential personal electronic device. Multimedia is prevalent and the preferred content on the smartphone and enormous amount of videos are shared on the phone. Diverse videos are downloaded and watched everywhere easily with the smartphone. QoE (Quality of Experience) is examined by measuring picture quality, continuity, and overall satisfaction in this study to assess users' experiences with multimedia in stationary and walking usage contexts. Encoding factors such as frame rate and resolution directly affect the quality of videos. Proper settings of encoding factors were not, however, studied in the actual context. Smartphone owners watch videos while sitting, walking, and standing in various environments. Diverse settings of encoding elements for digital videos were compared in static and dynamic situations and efficient levels of these settings are suggested. Index

Keywords: Encoding, multimedia, QoE, smartphone, usage context.

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