Path-Finding in Multi-Agent, Unexplored and Dynamic Military Environment Using Genetic Algorithm

Original Research, D1
Saeedvand S, Naser Razavi S and Ansaroudi F.
ABSTRACT: Path-finding in multi-agent, unexplored and dynamic military environment is one of the most important issues for solving the problem of efficient movement of agents in the environment. Necessary constraints to find path in a dynamic and unexplored environment are considered and Genetic algorithm is used.

Keywords: Multi-Agent System, Path-finding, Chromosome

PII: S232251141500002-4

Optimal Design of Bearingless Permanent Magnet-Type Synchronous Motors for Generating Maximum Levitation Force
Original Research, D2
Honarjou M., Faraji H. and Shirzadi A.

ABSTRACT: One maintenance task that still exist with conventional motors, are bearing lubrication and renewal. Bearingless motors are the new generation of the conventional motors. But the existing bearingless motors have a short duration of operation and their lifetime is limited. To improve their performance, the levitation force of bearingless motors is optimized. In this paper, the effect of thickness of permanent magnets on maximum levitation force is investigated. The simulation is done in Maxwell software.

Keywords: Bearingless Permanent Magnet Synchronous Motor, Maximum Levitation Force, Optimization, Thickness of PM.

PII: S232251141500003-4

Studying an Improved Interval-Only Algorithm for the De-Interleaving of Radar Pulses

Original Research, D3
Daryasafar N and Dehghani H.

ABSTRACT: In the electronic intelligence system (ELINT) field, we face with radar signals. In the ELINT system, our goal is to extract the targets from the received data. In the literature, many methods have been proposed for deinterleaving radar pulses. In this paper, we study the deinterleaving process in detail and propose a new algorithm for deinterleaving radar pulses. The simulation results on the signal data show that our algorithm improves the performance of the deinterleaving process.

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Direct Kinematics solution of 2-(6UPS) Hybrid Manipulator based on Neural Network

Original Research, D4
Rahmani A, Ghanbari A, Mahboubkhah M.

ABSTRACT: This contribution addresses forward kinematic
Keywords: 2-(6UPS) Manipulators, Stewart Mechanism,
Current Measurement with Optical Current Transformer

Original Research, D5
Alavi O.

ABSTRACT: Applying an optical current transformer (optical CT) to substations has several advantages, e.g. high accuracy and reliability. The optical CT is a non-contact current sensor based on the principle of Faraday's law. In this work, a novel design of an optical current transformer is proposed. The optical CT consists of two optical fibers contained in an insulator. As an application of the optical CT, a new fault location system has been developed.

Keywords: OCT, Fiber Optic, Current Sensor, Protection

Reliability Constrained Energy and Reserve Scheduling of Microgrids Including High Penetration...
ABSTRACT:

Due to environmentally and economically advantages, high deployment of renewable energy sources (RES) such as wind or solar is expected in future networks. Further, high penetration of electric vehicles is expected to be one of major factors for increasing demand of electricity. As a result, RESs, electric vehicles, and energy storage systems (ESS) are expected to provide energy and reserve. On the other hand, to meet reliability and economical demand, optimal energy and reserve scheduling is required, which is a multi-objective optimization problem. In this paper, energy and reserve scheduling problem is formulated as a mixed integer non-linear program by considering reliability. In this way, the reliability of the network can be expressed in terms of expected energy not supplied (EENS). Since EENS is a non-linear function of the energy and reserve scheduling, a non-linear optimization model is proposed to determine the optimal required reserve and energy scheduling so that the optimal requirement reserve is determined by a tradeoff between reliability and economics. Moreover, the problem is solved using a branch and bound method, and a MATLAB code is also presented to solve the problem.

Keywords: Microgrids, renewable energy sources (RES), energy and reserve scheduling, expected energy not supplied (EENS).

PII: S232251141500007-4

Optimal Charge-Discharge Scheduling of Electric Vehicles Considering Their Battery Lifetime

ABSTRACT:

Due to environmentally and economically advantages, high deployment of renewable energy sources (RES) such as wind or solar is expected in future networks. Further, high penetration of electric vehicles is expected to be one of major factors for increasing demand of electricity. As a result, RESs, electric vehicles, and energy storage systems (ESS) are expected to provide energy and reserve. On the other hand, to meet reliability and economical demand, optimal energy and reserve scheduling is required, which is a multi-objective optimization problem. In this paper, energy and reserve scheduling problem is formulated as a mixed integer non-linear program by considering reliability. In this way, the reliability of the network can be expressed in terms of expected energy not supplied (EENS). Since EENS is a non-linear function of the energy and reserve scheduling, a non-linear optimization model is proposed to determine the optimal required reserve and energy scheduling so that the optimal requirement reserve is determined by a tradeoff between reliability and economics. Moreover, the problem is solved using a branch and bound method, and a MATLAB code is also presented to solve the problem.

Keywords: Microgrids, renewable energy sources (RES), energy and reserve scheduling, expected energy not supplied (EENS).

PII: S232251141500008-4

Introducing a New High-Order Chaotic System with an Equilibrium Point and Stabilizing It Using LQR Controller

ABSTRACT:

In this paper, a new high-order chaotic system is proposed. This system has an equilibrium point on center and its stability is investigated. It is also shown that the equilibrium point is exponentially stable. The proposed chaotic system's stability around equilibrium point is guaranteed using a Linear Quadratic Regulator (LQR) controller. The paper also includes a comparison of the proposed chaotic system with some other chaotic systems.

Keywords: Chaotic System, High-Order Chaos, Lyapunov Exponent, Equilibrium Point, LQR Controller