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Lecture Notes in Electrical Engineering

Volume 520, 2019, Pages 139-149

2nd International Conference on Advanced Data and Information Engineering, DaEng 2015, Bali, Indonesia, 25 April 2015 through 26 April 2015, Code 229979

Estimation of Middle-East Oil Consumption Using Hybrid Meta-heuristic Algorithms (Conference Paper)

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Abstract

The consumption of energy has significantly increased in the world during the preceding decade. Two-third of energy requirements are produced by oil and gas. Estimation of oil consumption can give clues on the future energy consumption. In this study, the effectiveness of three hybrid metaheuristic algorithms, namely, Cuckoo Search Neural Network (CSNN), Artificial Bee Colony Neural Network (ABCNN), and Genetic Algorithm Neural Network (GANN) were investigated for the estimation of oil consumption. The simulation results showed that the CSNN improved the estimation accuracy of oil consumption over ABCNN and GANN whereas GANN improved convergence speed over CSNN and ABCNN. The study has shown that in terms of accuracy, the CSNN is appropriate for the estimation of oil consumption. In terms of convergence speed, GANN is the most suitable algorithm for the application. The estimation of oil consumption is required by the Middle East region for monitoring and control of carbon dioxide emissions, development of energy efficient economy, etc. It can be used by intergovernmental organizations and government in the creation of policy issues related to global energy consumption. © Springer Nature Singapore Pte Ltd. 2019.

View references (22)

SoVal Topic Prominence

Topic: Algorithms | Optimization | Grey wolf

Prominence percentile: 99.324

Author keywords

Artificial bee colony Cuckoo search algorithm Genetic algorithm International policy formulation Middle East oil consumption Neural network

Indexed keywords

Engineering controlled terms

Carbon dioxide Energy efficiency Energy policy Energy utilization Genetic algorithms Global warming Neural network

Engineering uncontrolled terms

Artificial bee colonies Carbon dioxide emissions Cuckoo search algorithms Hybrid metaheuristic algorithms inter-governmental organization International policies Monitoring and control Oil consumption

Engineering main heading

Heuristic algorithms

Funding details

Funding sponsor

Funding number

Acronym

UM.C.625(HIR/MOHE/SC/13/2)

Ministry of Higher Education, Malaysia

MOHE

Funding text

Acknowledgements This work is supported by University of Malaya High Impact Reserch Grant no vote UM.C.625(HIR/MOHE/SC/13/2) from Ministry of Higher Education Malaysia.

ISSN: 18761100
ISBN: 978-981131797-2
Source Type: Book series

DOI: 10.1007/978-981-13-1799-4_16
Document Type: Conference Paper
Volume Editors: Abawajly J.H., Ghazali R., Deris M.M., Mahdin H., Herawan T., Othman M.

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