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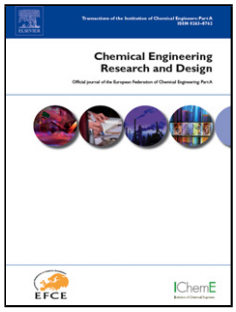

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PII: S0263-8762(17)30474-4
DOI: http://dx.doi.org/10.1016/j.cherd.2017.09.021
Reference: CHERD 2825

To appear in:

Received date: 12-6-2017
Revised date: 14-9-2017
Accepted date: 15-9-2017

Please cite this article as: Gao, Wei, Sarlak, Vali, Parsaei, Mohammad Reza, Ferdosi, Mohammad, Combination of Fuzzy Based on a Meta-heuristic Algorithm to Predict Electricity Price in an Electricity Markets.Chemical Engineering Research and Design http://dx.doi.org/10.1016/j.cherd.2017.09.021

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ACCEPTED MANUSCRIPT

Combination of Fuzzy Based on a Meta-heuristic Algorithm to Predict Electricity Price in an Electricity Markets

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Highlights

- Presenting a new forecast model by considering of Price
- Presenting an improved stochastic algorithm for optimization
- Design a hybrid forecast engine
- Application of strong feature selection for prediction problem

Abstract– The price forecasting is one of the most important issues in electricity markets. For this purpose, an accurate prediction model is demanded for optimal operation as well as planning in power system. In this work, a novel approach composed of wavelet transform and Takagi–Sugeno (TS) fuzzy rule-based system is proposed for day-ahead price forecasting of electricity markets. In this method, the input of price data is clustered by TS fuzzy model. In the identification of the TS fuzzy model, a hyperplane prototype fuzzy clustering model is proposed, which obtain the rules. Furthermore, in this model, a new stochastic search algorithm is applied to optimize the clustering objective function. To implement the proposed forecast strategy, the price data is first decomposed by Wavelet Transform (WT). Then, each produced wavelet component is filtered by two stage feature selection based on mutual information. Afterward, the hybrid fuzzy neural network-based forecast engine is used to predict the future

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