

Title: Hybrid Wavelet-PSO-ANFIS Approach for Short-Term Electricity Prices Forecasting

Author(s): Catalão, J. P. S.^{1,2}; Pousinho, H. M. I.^{1,2}; Mendes, V. M. F.³

Source: IEEE Transactions on Power Systems

Volume: 26 **Issue:** 1 **Pages:** 137-144 **DOI:** 10.1109/TPWRS.2010.2049385 **Published:** Feb 2011

Document Type: Article

Language: English

Abstract: A novel hybrid approach, combining wavelet transform, particle swarm optimization, and adaptive-network-based fuzzy inference system, is proposed in this paper for short-term electricity prices forecasting in a competitive market. Results from a case study based on the electricity market of mainland Spain are presented. A thorough comparison is carried out, taking into account the results of previous publications. Finally, conclusions are duly drawn.

Author Keywords: Electricity Market; Fuzzy Logic; Neural Networks; Price Forecasting; Swarm Optimization; Wavelet Transform

Keywords Plus: Neuro-Evolutionary Algorithm; Arima Models; Market; Network; System; Decomposition; Information; Environment; Transform

Reprint Address: Catalão, JPS (reprint author), Univ Beira Interior, Covilhã, Portugal.

Addresses:

1. Univ Beira Interior, Covilhã, Portugal
2. IST, Ctr Innovat Elect & Energy Engn, Lisbon, Portugal
3. Inst Super Engn Lisboa, Lisbon, Portugal

E-mail Address: catalao@ubi.pt

Funding:

Funding Agency	Grant Number
Fundação para a Ciência e a Tecnologia (FCT)	SFRH/BD/62965/2009

Publisher: IEEE-INST Electrical Electronics Engineers INC

Publisher Address: 445 Hoes Lane, Piscataway, NJ 08855-4141 USA

ISSN: 0885-8950

Citation: CATALÃO, J. P. S.; POUSINHO, H. M. I.; MENDES, V. M. F. - Hybrid Wavelet-PSO-ANFIS Approach for Short-Term Electricity Prices Forecasting. IEEE Transactions on Power Systems. ISSN 0885-8950. Vol. 26, n.º 1 (2011) p.137-144.