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基于小波神经网络的中国能源需求预测模型

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摘要 通过分析影响我国能源需求的主要因素,建立了基于小波神经网络的需求预测模型.
采用定性与定量相结合的方式,分析了影响我国能源需求的主要因素,通过将人口总数、GDP、
产业结构变化以及能源消费量的一阶滞后作为输入变量,建立基于小波神经网络的我国能源需求非线性预测模型.
实验结果表明,该非线性预测模型与多元回归模型相比更加合理,具有更高的预测精度.

关键词 影响因素,能源需求,小波神经网络.

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Energy Demand Forecasting Model in China Based on Wavelet-Neural Network

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Abstract In this paper, an wavelet-neural-network-based forecast model is developed for energy demand in China. Combining qualitative with quantitative analysis, we analyze some main factors affecting energy demand in China. A first order wavelet-neural network forecasting model with time-delay is established, including population, GDP, variation of industrial structure and energy consumption. The simulation result shows that this nonlinear forecasting model is
more reasonable and has higher precision than other multiple regression models.

Key words Impact factor energy demand wavelet-neural network.

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