

Identification of Dynamical System using Recurrent Wavelet Neuro-Fuzzy network

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Abstract

In this study, Recurrent Wavelet Neuro-Fuzzy Network (RWNFN) is proposed. RWNFN uses Recurrent Wavelet Neural networks as inferring mechanisms. Recurrent Wavelet Neural networks has two characters: feed forward and feedback. Therefore, the outputs of Recurrent Wavelet Neural network have the previous outputs of its own which make it as a dynamical mapping mechanism. Hence, RWNFN with dynamical mapping functions can identify nonlinear dynamical system effectively. In this paper, the ball-screw-driving system is used as a nonlinear frictional dynamic system. According to the modeling results, RWNFN can identify nonlinear dynamical system effectively.



Key Words: wavelet、neuro-fuzzy network、recurrent neural network

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