倒傳遞神經網路在火力發電廠之冷凝器故障診斷

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摘要

本文提出以倒傳遞神經網路(Back-propagation neural network, BPN)應用在火力發電廠冷凝器故障診斷(Condenser fault diagnosis in fossil-fuel power plants)之研究。利用倒傳遞神經網路之特性,用已知的故障數據對類神經網路進行訓練後,即可以對冷凝器的故障型態進行診斷。而本文所提之 BPN 用來驗證對冷凝器故障診斷之準確性,使用 MATLAB 的方式來撰寫 BPN 程式,並且經過訓練後所診斷新的樣本資料,用來辨別出故障型態。

關鍵字：倒傳遞神經網路;冷凝器;故障診斷

Back-Propagation Neural Network for the Condenser Fault Diagnosis in Fossil-Fuel Powerplants

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Abstract

In this paper, study to a Back-Propagation Neural Network(BPN) application to fault diagnosis for the condenser in fossil-fuel power plants. Utilize Back-Propagation Neural Network the characteristic, using the know data to train the neural network. Then, input the new samples to diagnose the fault type. In order to prove the accuracy of the BPNN for the condenser fault diagnosis, using MATLAB write to BPN program, and through to the new data sample after training, distinguish to fault type. The simulation can prove the proposed method is effective and accurate.

Key words：Back-propagation neural network;Condenser;Fault diagnosis