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機率神經網路之火力發電廠冷凝器故障診斷

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摘要

本文提出以機率神經網路(Probabilistic neural network, PNN)應用於火力發電廠(Fossil-fuel power plants)冷凝器(Condenser)故障診斷之研究。利用機率神經網路之特性，使用已知的故障數據對機率類神經網路進行訓練後，即可對冷凝器的故障型態進行診斷。使用 MATLAB 撰寫機率神經網路程式，驗證本文所提機率神經網路對冷凝器故障診斷之準確性，並經過訓練後診斷冷凝器之故障樣本資料，分辨出故障型態，證明所提方法之準確性可達到 100%。

關鍵字：類神經網路,機率神經網路,火力發電廠冷凝器,故障診斷

Probabilistic Neural Network to Fault Diagnosis for the Condenser in Fossil-Fuel Power Plants

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Abstract

This paper presents a Probabilistic Neural Network (PNN) for the condenser in Fossil-Fuel Power plants. Using the known data to train the probabilistic neural network. Then, input the samples of condenser to diagnose the fault type. In order to prove the accuracy of the PNN for fault diagnosis of condenser, using MATLAB to develop PNN program. The simulation can prove the proposed method is effective and accurate.

Key words：Neural network;Probabilistic neural network;

Condenser in fossil-fuel power plant;Fault diagnosis