Failure Prognosis of Coal Pulverizer Gearbox Using Autocorrelation-Wavelet Packet Decomposition Method

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ABSTRACT

For Asia pacific conference of the prognostics and health management society 2017, the committee of the prognostics and health management data challenge has organized a case study problem for exploring various prognosis methods. The challenge aims at predicting the date of upcoming failure along with a failure component of coal pulverizer gearboxes. The committee provided raw signal data from the real-time operating system of coal pulverizer gearboxes, but with several issues including inconsistent loading condition or mixed signal data from different sources. In this paper, autocorrelation method and wavelet packet decomposition method are integrated to devise health indices which state degrading health conditions of the gearbox. Using the health indices, a prediction model is constructed to predict the failure date and the failure components. This paper includes the results of prediction.