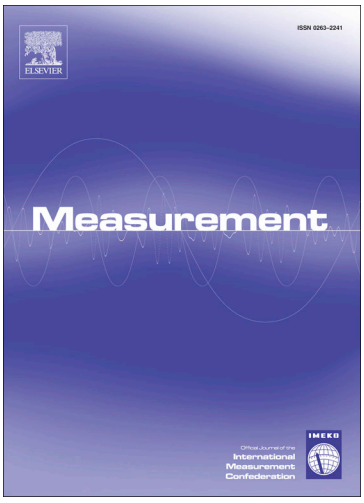

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Vibration analyzing in horizontal pumping aggregate by soft computing

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Abstract

The main goal of the study was to analyze vibration of pumping aggregate. There are fourth position which could be very harmful for the total working operation of the pumping aggregate. The pumping aggregated should have smooth continuous operations without any mistake. Vibration could affect different parts or segments of the pumping aggregate and therefore it is need to analyze the vibrating. Analyzing of the vibration could be highly nonlinear task since many different parameters are involved in the model. To avoid the analytical model in this article soft computing approach was used since the soft computing approach does not require internal knowledge of the vibration model. For the soft computing model there is enough to collect the input output data pairs through experimental measurement procedure. Based on the input/output data pairs the model will be created. The approach should rank the influence of the measuring positions vibration on the pumping aggregate. Finally three different soft computing methods were compared and results were reported.

Keywords: soft computing; vibration; pumping aggregate.

1. Introduction

The development of non-invasive methods of monitoring of the machine conditions are important in order to predict maintenance of the machines. There are various indicators for machine condition; however, the method of use vibration monitoring for determination of machine operating conditions was proved the most important.

Vibration monitoring is one among many methods of technical diagnostics which has been continuously monitoring a technical state of a device by observing the level of a mechanical