

Anomaly detection in time series for TBM

A literature review of the useful AD-method for Tunneling

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Abstract

Introduction

1 Definition and Metrics

In the context of TBM, we will define anomaly detection as the detection of physical event that will provoke an unsolicited degradation of a given efficiency function. Where an efficiency function is some function that converts the machine state to a value that wants to be maximized by the user.

One can prove that this definition is a special cases of the labeling one, by labeling the decrease of the given efficiency function and retroactively the time series of sensors with where influenced by the root cause event.

Conclusion