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Advanced Data Analysis for Industrial Applications

Wagner, Zdeněk
2015

Dostupný z <http://www.nusl.cz/ntk/nusl-200862>

Dílo je chráněno podle autorského zákona č. 121/2000 Sb.

Tento dokument byl stažen z Národního úložiště šedé literatury (NUŠL).

Datum stažení: 02.06.2024

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Statistical Calibration of Dynamic Ampacity Model

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Ampere capacity of a conductor (ampacity) is an important parameter in power transmission systems since it limits the amount of energy that can be transmitted. This parameter is heavily dependent on weather conditions. Prediction and even measurement of weather conditions is subject to severe uncertainty. The goal of this research is creation of a statistical model that predicts ampacity and reliably quantifies uncertainty of the prediction. We propose a simple model and illustrate its performance on data from a real transmission line.

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Advanced Data Analysis for Industrial Applications

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One of the principal tasks of nowadays industry is process intensification. The methodology for finding reliable results is highly demanded. While marketing is concentrated on analysis big data that are available in eShops as well as other internet media, the situation in the industry is different because solution must be found in real time based on limited amount of data. The algorithms of data analysis must therefore be fast and robust. In the last few decades statistical methods have advanced considerably but a new, nonstatistical approach to uncertainty, called mathematical gnostics, have also be developed. This new approach is based upon the fundamental laws of nature and robustness is its inherent property. The contribution will present several applications with the emphasis laid upon description of the main features of mathematical gnostics. Previous applications in energetics that can be enhanced by use of the modern algorithms of data analysis will also be mentioned.