The 12th International Conference

SPMS 2021

Stochastic and Physical Monitoring Systems

24.6. - 28.6.2021

CTU
CZECH TECHNICAL
UNIVERSITY
IN PRAGUE

Contribution ID: **14**   Type: **not specified**

Classification of acoustic emission signals in material defectoscopy based on statistics and machine learning

Friday, 25 June 2021 14:20 (20 minutes)

Reliable classification of acoustic emission signals is crucial for practical use of this nondestructive testing technique. During classification, signals are represented by a convenient, low-dimensional set of attributes. This presentation adresses the problem of selecting appropriate atributes and consequently describes and compares several classification methods, specifically Division methods, Model Based method, KDE method and classification using Supervised Divergence Decision Tree. The paper proposes new attribute and classification method. The methods were tested and compared on a set of laboratory measured data. The most reliable method seems to be the supervised KDE classification method.

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Session Classification: Machine Learning in Acoustic Emission