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Feature selection and classification of acoustic emission signals

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This contribution deals with the recognition of acoustic emission signals for use in non-destructive defectoscopy or in machining process control. Classification can either be performed by representing signals by a convenient, lower-dimensional set of attributes or more directly, by passing them in their entirety to the classification algorithm. We focused on selecting methods and tools for the automated extraction of a large number of features from signals and then performing dimensionality reduction on them. Finally, we compared the performances of various classifiers on these low-dimensional projections with the direct classification of signals using convolutional neural networks.

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