

It's the wavelet itself that detects changes in progressive faulty signals.

Future works could be carried out to increase the number fault classes or to improve the reliability of wavelet analysis and the ANN architecture. In order to achieve these objectives, a wavelet families choice can be done using a quantitative methods and not only by a similarity between the original signal and the wavelet family. Furthermore, an important challenge, according to Ockham Principle, is to simplify the network to prevent overfitting:

- reduce the number of analyzed signals, taking into account only the current signals;
- reduce the number of neurons and hidden layers;
- reduce the number of useful features, by a selection during features extraction or by a selection after network training, based on a weight that the network gives at each feature.

Last but not least, in order to ensure the effectiveness and the robustness of the proposed FDI method, it's necessary to test the trained network with inputs related to several noise levels.

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