

Gears and Bearings faults Detection: from Instrumentation to Classification.

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Gears and bearings, used in many industrial areas are subject to failure that may lead to costly shutdowns. The current trend is to detect failures (cracks, spall, pitting ...) and to identify and control their evolution. Such monitoring leads to a huge amount of data. With a double skill in test and simulation, Vibratec proposes an approach based on measurements coupled with Machine Learning (ML) processing.

This presentation defines the fault detection global approach used by Vibratec, from signal acquisition to the classification of indicators. The methodology is firstly applied on a specific HMS test bench. Then, the machine learning strategy is deployed on a database. The numerical simulations are in good agreement with the measurement results obtained on the test bench, and the machine learning indicators provides encouraging results. In the upcoming months, this complete methodology will be applied on a collaborative project aiming to improve the maintenance of aircraft engines.