

Abstract :

The kurtogram analysis presents some limitations when diagnosing gearbox systems, particularly in time domain. Its envelop signal analysis is not able to detect any defects. This paper presents a new approach to enhance the detection and diagnosis in gearbox systems. This new approach is based on Maximum Correlated Kurtosis Deconvolution combined with Spectral Kurtosis fault diagnosis methodology. This technique allows us to obtain better detection in the gearbox system which is not the case of the spectral kurtosis analysis alone. For this purpose, a dynamical model of a simple stage gearbox is proposed. The approach can detect and identify at early stage the gearbox and also the crack tooth defects.