

## **LSM periodically non-stationary covariance analysis of vibration signals for deflection and analysis of mechanism evolutionary faults**

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LSM covariance analysis of periodically non-stationary random processed, proposed in previous author's work, is verified using simulated and real-life data. The estimators of mean and covariance function period obtained for different numbers of their harmonic components are analyzed. The advantage of LS period estimators in comparison with coherent and component one are shown. It is noticed that LSM is the most efficiency among the techniques which are nowadays used for fault detection in practice, including the envelope analysis.