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Application to of Hilbert transforms moments analysis of vibration signals

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Abstract: Each element has its own natural vibration frequencies, which are of great importance for the operation of the device, , it is important for the comfort of work, e.g. noise, for the safety of the machine or operators. Detection of disturbances and damage occurring and developing in a dynamic system in many cases, it uses the effect of modulating carrier frequencies as a phenomenon of generating information about degradation process occurring in the system. Particular importance is attached to the detection of qualitative changes, including the detection of disturbances in the assumed cycle of the production process [1], [2]. In this work, the authors present a method that uses the generalized Hilbert transform [3], [4] that have been processed as a result of monitoring the operation of a flash furnace and are aimed at determining the conditions leading to a non-stationary course of the process .

Keywords: Generalised Hilbert transform, fractional Hilbert transform, spectral moments

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