

1.8.14. IMPLEMENTATION OF SPECTRAL-TEMPORAL ANALYSIS OF TRANSIENT VIBRATION SIGNALS FOR MECHANICAL SYSTEMS DIAGNOSTICS

Getmanov V.G., MEPHI, Moscow, Russia

A technology of spectral-temporal analysis (STA) of transient vibration signals based on the use of local and spline models is suggested. The use of SAT technology for the diagnosis of mechanical systems in transient modes is considered. Examples of using the SAT for the following tasks are given:

1. diagnosis of rolling bearing based on the measurement of transient bearing frequencies signals;
2. diagnosis of materials based on spectral-temporal analysis of acoustic emission signals;
3. diagnosis of rotor systems in acceleration mode (braking) based on measurements of bearing units vibration.