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SPECTRAL METHOD TO EVALUATE THE UNCERTAINTY OF DYNAMIC MEASUREMENTS

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Abstract

Article suggested spectral method of assessing the measurement devices dynamic uncertainty that allows to investigate measurement accuracy in dynamic operating conditions in frequency domain and to estimate amplitude values of dynamic uncertainty based on input signal frequency characteristic and spectral function. The results were approbated when evaluating the engines vibration acceleration dynamic measurements uncertainty. It was established that maximum value of vibration acceleration dynamic measurement uncertainty amounts to 0.137 m/s^2 for observation time of 600 sec and vibration acceleration signal nominal value of 0.35 m/s

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at a frequency of 6 kHz.
References 10, figures 2, table 1.

Key words: dynamic uncertainty of measurement devices, quality assurance of dynamic measurements, spectral function, frequency characteristic, vibration acceleration.

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