

ISO 16063-43:2015-11 (E)

Methods for the calibration of vibration and shock transducers - Part 43: Calibration of accelerometers by model-based parameter identification

Contents		Page
Foreword		iv
Introduction		vi
1	Scope	1
2	Normative references	1
3	Terms and definitions	2
4	List of symbols	2
5	Consideration of typical frequency response and transient excitation	3
6	General approach	5
7	Linear mass-spring-damper model	5
7.1	Model	5
7.2	Identification by sinusoidal calibration data	6
7.2.1	Parameter identification	6
7.2.2	Uncertainties of model parameters by analytic propagation	10
7.3	Identification by shock calibration data in the frequency domain	10
7.3.1	Identification of the model parameters	10
7.3.2	Uncertainties of model parameters by analytical propagation	15
8	Practical considerations	15
8.1	The influence of the measurement chain	15
8.2	Synchronicity of the measurement channels	15
8.3	Properties of the source data used for the identification	16
8.4	Empirical test of model and parameter validity	16
8.4.1	Sinusoidal calibration data	16
8.4.2	Shock calibration data	16
8.5	Statistical test of model validity	17
8.5.1	General	17
8.5.2	Statistical test for sinusoidal data	17
8.5.3	Statistical test for shock data and the frequency domain evaluation	17
9	Reporting of results	17
9.1	Common considerations on the reporting	17
9.2	Results and conditions to be reported	18
Bibliography		19