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**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB/T 2298-2010

Replacing GB/T 2298-1991

**Mechanical vibration, shock and condition monitoring --
Vocabulary**

机械振动、冲击与状态监测 词汇

(English Translation)

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Foreword

This standard is identical with ISO 2041:2009 "Mechanical vibration, shock and condition monitoring of Words" (in English).

This standard is equivalent translation ISO 2041:2009.

This standard and ISO 2041. compared to 2009, editorial changes as follows.

--- The "this International Standard" by "this standard";

--- Deleted international standards foreword;

--- Of standard clauses No re-edited. The "range" as in Chapter 1, the following chapters in accordance with the serial number of international standards of chapter plus 1 arrangement.

--- To ISO 2041:2009 in 5.38 in the definition of editorial errors were revised (see 6.38).

This standard is GB/T 2298-1991 "Mechanical vibration and shock term" amendment;

This standard compared with GB/T 2298-1991, the main changes as follows.

--- Removed some terms. white noise, blast wave, octave, 1/3-octave, octave bandwidth filter, the proportion of bandwidth filter, Proportional damping, standard deviation, wave, wave number, sampling time, the reference amount, parametric vibration, ultrasonic frequency, galloping, hysteresis damping, shock Incentives, impact testing, infrasound

frequency band-pass filter, band stop filter, unit impulse response function, cepstrum, equivalent static acceleration, Equivalent static speed equivalent viscous damping, low-pass filter, ground loop, dynamic systems, dynamic signal analyzer, Duhamel integral anti Acting vibration generator, variance, resolution, pink noise, peak filter, nonlinear viscous damping, Gaussian random noise, high Pass filters, tracking filter, process, overdamped, constant bandwidth filter; cross correlation, echo, chaos, reverb, limit cycle, Crosstalk, absolute sensors, rms, mean square value, balance, mean, fast Fourier transform, a broadband filter, discrete Fu Fourier transform, continuous impact test, the continuous spectrum, critical viscous damping coefficient, filters, filter nominal bandwidth, modal parameters, Modal test, vibration resistance test, viscous damping, viscous damping, smooth, average, underdamped, strong self-stability, shear waves, Rayleigh distribution, Weak homeostasis, acoustics, sound distortion, 1/10 decade, real-time analysis, depending on the quality, data processing, data points, data reduction of the nominal data block, data processing, digital filters, loss factor, passband, the passband of the upper and lower cut-off frequency of the undamped natural frequency Rate, complex parameters of the system, detailed analysis, line profile, the relative sensors, phasor, phase plane, calibration coefficients, leakage, signal, traveling wave, Effective mean time, narrow-band filter, relaxation vibration, test, vibration mode, vibration mode orthogonality, the orthogonal function, normal, n the function, the center frequency, the acceleration of gravity, principal coordinates, autocorrelation coefficient, impedance, class and their definitions.

--- An increase of some terms. white random vibration, Haversine shock pulse nominal pulse standardized autocorrelation function, normalized cross correlation Coefficients, standard acceleration of gravity, surface wave, the sampling period, the sampling rate, the surge, unidirectional deflection of the beam neutral surface, single flexure beams the neutral axis, the equivalent linear damping, dynamic flexibility, dynamic range (sensor), dynamic quality, uncoupled modal, nonlinear damping, pink Red random vibration, peak value, negative peak, probability, density, probability density distribution curve, probability density function, the resonance speed, Natural frequency (mechanical system), product of inertia, moment of inertia, inertial ball through the inner frequency, the balls through the outer ring frequency, ball Spin frequency, buffer, shaking, resilience, based on lumped parameter system, lumped mass, record length, shear waves, shock absorber, angular Velocity, angular acceleration, angular displacement, angular vibration, net mass, RMS spectrum, mean square scanning frequency, power, sensor, modal analysis, mold State stiffness, modal matrix, modal density, the number of modes, mode shapes, energy spectral density, sidelobes, offset, smooth vibration, translational motion, Line number, spectral leakage, Rayleigh waves, data, instantaneous value, Conditioning, gyroscopic torque, whirl, undamped intrinsic mode, linear damping, linear Damping, harmonic excitation, leakage error, signal bandwidth, rotation, oil whip, the effective noise bandwidth, pre Conditioning, constraints hindered Anti-vibration table, amplitude scale factor, centroid, confidence

interval, confidence level, the neutral plane, the neutral axis, the center of gravity, the center of gravity to install the system, the shaft Bearing Cage damage frequency, the main band frequency, the main axis of inertia, freedom impedance, damping intrinsic mode, the maximum peak value, etc. and their definitions.

--- Chapter 5, the title of "shock and vibration measurement sensor" instead of the original standard heading "testing technology."

--- Chapter 6, the title of "signal processing" instead of the original standard heading "data processing."

--- Increased Chapter 7 "Status Monitoring and Diagnosis."

--- Standard this standard relevant to refer to the "References." this standard by the national mechanical vibration, shock condition monitoring Standardization Technical Committee (SAC/TC53) and focal points.

This standard was drafted. Xi'an Jiaotong University, Zhengzhou Machinery Research Institute, Wuhan University of Technology, North China Electric Power University, China Shipbuilding Industry Corporation

711 Institute of Metrology Institute, Guangzhou, Hangzhou Steam Turbine Co., Ltd.

Drafters of this standard. Zhengjia, Han Guoming, sunny, Fu Zhong Guang, Shen Jianping, Zhou Lun Bin, Sun Yi Gang.

This standard replaces the standards previously issued as follows.

--- GB 2298-1980, GB/T 2298-1991.

Introduction

Vocabulary is a standardized basic theme. For the definition of the term if there is no accepted standard, the technical field other technologies a Standards will become an arduous and time-consuming work will eventually lead to inefficiency and misunderstanding of probability will High.

Mechanical vibration, shock and condition monitoring of vocabulary

1 Scope

This standard defines the mechanical vibration, shock and condition monitoring of domain-specific terms and expressions.

2 General terms

Displacement Relative displacement characterization of the object point relative to a particular reference frame position change time variable.

Note 1: The reference frame is usually a set axis average position or rest position. Generally, the rotational displacement vector, translational displacement vector, or combinations of both can indicate displacement.

Note 2: If the measured displacement is not relative to the original reference frame given case design, but relative to some reference system, the displacement is called relative displacement.

Note 3: The displacement may be shaking, you can use the displacement amplitude (and frequency) is defined under harmonic component of the case; or displacement may be random, love Under conditions, root mean square (rms) displacement (as well as the bandwidth and the probability density distribution) it can be used for the probability defined at any given range of displacement values of.

Displacement defined short period of time for the transient displacement; non-oscillation displacement long period of time is defined as the continued displacement; non-oscillation displacement of the short period of time it is defined as the displacement pulse.

Speed velocity

Relative velocity rate of change of displacement.

Note 1: In general, the speed of change over time.

Note 2: The reference lines are usually a set of axes in the average position or rest position. Generally, the rotational speed of the vector, the translation velocity vector, or a combination of both it can express speed.

Note 3: If the measured speed is not relative to the original reference frame for a given case design, but relative to some reference system, the speed is called the relative velocity. Two the relative velocity between the points is the speed between the two points of the vector difference.

Note 4: The speed may be oscillation, can be defined under harmonic component case with speed amplitude (and frequency); speed may be random, in the random case, Root mean square (rms) velocity (as well as the bandwidth and the probability density distribution) it can be used for the probability defined at any given range of speed values of.

Speed is defined short period of time transient velocity; non-oscillation speed defined long period of sustained speed.

Acceleration Relative acceleration rate of change of velocity.

Note 1: In general, acceleration is changing with time.

Note 2: The reference lines are usually a set of axes in the average position or rest position. In general, the rotational acceleration vector, translational acceleration vector, or both, and Combination Coriolis (Coriolis) acceleration could indicate acceleration.

Note 3: If the measured acceleration is not relative to the inertial frame of reference given case design, but relative to some reference system, the acceleration is called the relative Acceleration. Relative acceleration between two points is a vector two o'clock acceleration difference.