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Noise Reduction In Urban Environment

Vasile BACRIA
Politehnica" University of Timişoara, Faculty of Mechanical Engineering, bacria@mec.utt.ro

Mihai TOADER
ICECON Bucureşti, Timişoara Research Department, toader@mec.utt.ro

Nicolae HERIŞANU
Politehnica" University of Timişoara, Faculty of Mechanical Engineering, herisanu@mec.utt.ro

Cristina OPRIȚESCU
ICECON Bucureşti, Timişoara Research Department, opritescu_cristina@yahoo.com

The noise affects permanently the human life and activity. In the papers it is investigated the noise in urban environment: specific sources, characteristic spectra and levels, noxious effects, admissible limits, propagation way, description of measurements and analysis of the results, as well as the establishment of some methods concerning the noise reduction, their way of implementation and the effect.

Occupational noise and health diseases. Reducing and controlling the risks on the health of the workers

Nicuşor DRĂGAN
MECMET - Research Center for Mechanical Machines and Technological Equipments
"Dunărea de Jos" University of Galați, Engineering Faculty of Brăila
29 Calea Călăraşilor, 810017 Brăila, Romania, e-mail: tehnoc@tehnoc.ro

Exposure to noise at work can harm workers' health. The most well-known effect of noise at work is loss of hearing, a problem observed among coppersmiths since XVIII-th century. However, it can also exacerbate stress and increase the risk of accidents. Eliminating or reducing excessive noise at work is not simply a legal responsibility for employers; it is also in an organisation's commercial interests. The safer and healthier the working environment, the lower the probability of costly absenteeism, accidents and under-performance. This article describes the effects of workplace noise and outlines the main steps that should be taken to reduce and control noise at work.

The risks of noise at work – policy and legislation. The management of noise in construction

Nicuşor DRĂGAN
MECMET - Research Center for Mechanical Machines and Technological Equipments
"Dunărea de Jos" University of Galaţi, Engineering Faculty of Brăila
29 Calea Călăraşilor, 810017 Brăila, Romania, e-mail: tehnoc@tehnoc.ro

Exposure to loud noises at work can cause irreversible hearing damage, workplace accidents and be a contributing factor to other health problems. Noise-induced hearing loss is the most common reported occupational disease in the European Union; noise at work can also ex-acerbate stress and increase the risk of accidents. This article provides an introduction to the management of noise in construction both before and during work on site. Also, it show how the European directive structure and the complementary standards ensure that risks to workers from noise are addressed to reduce the high personal, social and economic cost of ill health and accidents arising from noise exposure.

Study Of The Sound Waves Propagation In A Nonlinear Ferromagnetic Sample

Nicolae CREŢU
Physics Department , Transilvania University Brasov, e-mail: cretu.c@unitbv.ro

Mihail POP
Physics Department , Transilvania University Brasov, e-mail: cretu.c@unitbv.ro

Abstract: It is known that when a signal, x(t), of a particular frequency is passed through a nonlinear system, the output of the system consists of not only the input frequency (f1), but also its harmonics (f2 = 2*f1, f3 = 3*f1, f4 = 4*f1, and so on). The number of harmonics, and their corresponding amplitudes, that are generated depends on the degree of nonlinearity of the system. In general, the more the nonlinearity, the higher the harmonics, and vice versa. The present work investigates by a noncontact technique, the acoustic behavior of a ferromagnetic rod, during the first magnetization process, with the aim to connect the harmonic distortion spectrum with the nonlinearity of the first magnetostriction curve.

Tracing Curves for the Sound Absorbing Characteristics in case of Composites Consisting of Textile Materials

Polidor BRATU
Research Institute for Construction Equipment and Technology – ICECON S.A., 266 Pantelimon, 021652 Bucharest, Romania, email icecon@icecon.ro

The paper presents the variation of the sound absorption coefficient in case of materials and structures realised in Romania. In order to characterize the materials the Kundt's tube method with excitation in 1/3 octave frequency bands has been used. The traced curves put into evidence the effect of the sound absorption in case of frequencies higher than 250 Hz and reduced results in case of low frequencies. The traced curve family assures the selection of the most efficient acoustic solution.

Analysis methods of the motion of a rigid body about its mass center

Andrei CRAIFALEANU
Department of Mechanics, University "Politehnica" of Bucharest
craifaleanu@cat.mec.pub.ro, ycraif@yahoo.com

Cristian DRAGOMIRESCU
Department of Mechanics, University "Politehnica" of Bucharest
dragom@cat.mec.pub.ro, cristian_dragomirescu@yahoo.com

Valentin CEAUŞU
Department of Mechanics, University "Politehnica" of Bucharest
ceausu@cat.mec.pub.ro

The paper presents the results of some numerical applications, obtained by studying the motion of a rigid body about its mass center. The differential equations are determined in two ways: by means of Euler angles and by means of finite rotations, described by the elements of the rotation quaternions. In both cases, Runge-Kutta integration method has been used. The numerical results are compared and conclusions are drawn upon the accuracy of the two ways of describing the motion, as well as upon the numerical integration method.

Spectral Function of the Wave and Quantum Physic

Gheorghe OPROESCU
University "Dunarea de Jos" of Galati, Faculty of Engineering Brăila
Calea Calarasilor Nr. 29, 810017 Braila, Romania
E-Mail oproescu.gheorghe@ugal.ro

The spectral function of any wave determined with the Fourier's transformation has some few particularities like quantum physic. The work presents two properties likewise Dirac function and uncertainty principle of Heisenberg, if the wave has an endless length in the time.

Vibration Monitoring of Industrial Plants

Gilbert-Rainer GILLICH
University "Eftimie Murgu" of Resita- Laboratory of vibration and signal processing
P-ta Traian Vuia 1-4, 320085 Resita, Romania, raini@uem.ro

Cristian Paul CHIONCEL
University "Eftimie Murgu" of Resita- Laboratory of automation and process control
P-ta Traian Vuia 1-4, 320085 Resita, Romania, c.chioncel@uem.ro

Ovidiu VASILE
University POLITEHNICA of Bucharest – Department of Mechanics
Splaiul Independentei 313, Bucharest, Romania, vasile@cat.mec.pub.ro

Silviu NASTAC
University "Dunarea de Jos" of Galati, Faculty of Engineering Brăila
Calea Calarasilor 29, 810017 Braila, Romania, silviu.nastac@ugal.ro

The SMONTREVIZ project aims to develop a monitoring system, methodologies and tools to gain information regarding the level of noise and vibrations produced by industrial sources, by low costs. The system provides the measured data to companies, local authorities and to the civil society, offering them information which can be used to take measures for mitigation of the pollution factors on one side, or to compare the registered levels with them foreseen in the national or European regulations on the other side. Communities can be affected by noise and vibrations which stress people and the build environment. The effects are especially unpleasant if buildings belonging to the cultural heritage or laboratories and operation rooms foreseen with high-tech equipment are exposed to this kind of pollution agents. Knowing the level of noise and vibration and the sources which produce them helps stakeholders to take measures to mitigate their level and effects.
The present work presents a monitoring system developed in frame of the project and the methodology used in data acquisition and processing. Examples of measurements obtained during experimental works and theoretical results are also presented and compared, aiming to prove the reliability of the methodology.

Evaluation of Polyharmonic Vibrations Effects upon Human Body aiming Improvement of Norms concerning Limits and Time Exposure

Aurelia MIHALCEA
Research Institute for Construction Equipment and Technology – ICECON, 266 Pantelimon, 021652 Bucharest, Romania, cinetic@icecon.ro

This paper deals with the behaviour of nonlinear elastic systems whose dynamic response is characterized by polyharmonic vibrations while subjected to given (kinematic) harmonic excitations. Under these conditions, beginning with the stage of equipment conception, the numerical evaluation for the system response is necessary in order to determine the sub harmonic and over harmonic components related to the excitation frequency. Basing on this, the level of the vibrations transmitted to human body could be assessed allowing adoption of the appropriate protection measures. Also, this approach can be used in case the linear elastic system becomes nonlinear during operation. This results in changing of the response spectrum with negative impact upon human health and safety. The present paper contains actual cases of spectrum changing for the vibrations transmitted while operating the vibrating construction machinery where the additional sub harmonic or over harmonic components exceed the rated level and affect the human body exposed to vibrations during the working process.

An Overview of Mathematical Models Used in Gear Dynamics

Zoltan KORKA
RESITA- RENK S.A., Platforma Calnicel, Resita, korka@resita-renk.ro

Gears are one of the most critical components in industrial rotating machinery. There is a vast amount of literature on gear modelling. The objectives in dynamic modelling of gears has varied from vibration analysis and noise control, to transmissions errors and stability analysis over at least the past five decades. The ultimate goals in gear modelling may be summarized as the study of the following:

- Stress analysis such as bending and contact stresses;
- Reduction of surface pitting and scoring;
- Transmission efficiency;
- Radiated noise;
- Loads on the other machine elements of the system especially on bearings and their stability regions;
- Natural frequencies of the system;
- Vibration motion of the system;
- Reliability and fatigue life.

About simulation of the shocks who are transmission in the body of the mechanic structures with geometrical discontinuity

Cristina OPRIȚESCU
ICECON Bucuresti Departamentul de Cercetare Timisoara, opritescu_cristina@yahoo.com

Mihai TOADER
ICECON Bucuresti Departamentul de Cercetare Timisoara, toader@mec.utt.ro

Amalia ȚÎRDEA
Universitatea "Politehnica" Timsisoara, Catedra de Mecanica si Vibratii
amalia_tirdea@yahoo.com

The analysis of impacts of elastic bodies is topical and it has many applications, practical and theoretical, too.
The elastic character of collision is put in evidence, especially by the velocities of some parts of a particular body, named "ring".
In the presented paper, the situation of elastic collisions is put in evidence by the simulation with the help of the program ANSYS and it refers to the particular case of the ring, with the mechanical characteristics, given in the paper.