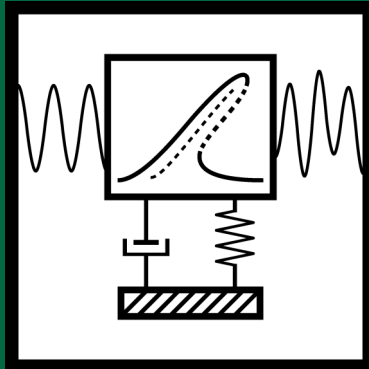


February 2019, Volume 21, Issue 1
Pages (1-285)
ISSN Print 1392-8716
ISSN Online 2538-8460

JVE Journal of Vibroengineering



Editor in Chief

M. Ragulskis Kaunas University of Technology,
JVE International, (Lithuania) minvydas.ragulskis@ktu.lt,
m.ragulskis@jvejournals.com

Founding Editor

K. Ragulskis Lithuanian Academy of Sciences, (Lithuania) k.ragulskis@jve.lt,
ragulskis.jve@gmail.com

Editorial Board

H. Adeli The Ohio State University, (USA) adeli.1@osu.edu
V. Babitsky Loughborough University, (UK) v.i.babitsky@lboro.ac.uk
R. Bansevicius Kaunas University of Technology, (Lithuania) ramutis.bansevicus@ktu.lt
M. Bayat Roudehen Branch, Islamic Azad University, (Iran) mbayat14@yahoo.com
I. Blekhman Mekhanobr – Tekhnika Corporation, (Russia) iliya.i.blekhman@gmail.com
K. Bousson University of Beira Interior, (Portugal) bousson@ubi.pt
A. Bubulis Kaunas University of Technology, (Lithuania) algimantas.bubulis@ktu.lt
R. Burdzik Silesian University of Technology, (Poland) rafal.burdzik@polsl.pl
M. S. Cao Hohai University, (China) cmszhy@hhu.edu.cn
Lu Chen Beihang University, (China) luchen@buaa.edu.cn
F. Chernousko Institute for Problems in Mechanics, (Russia) chern@ipmnet.ru
Z. Dabrowski Warsaw University of Technology, (Poland) zdabrow@simr.pw.edu.pl
Y. Davydov Institute of Machine Building Mechanics, (Russia) 1institut@bk.ru
J. Duhovnik University of Ljubljana, (Slovenia) joze.duhovnik@lecad.uni-lj.si
S. Ersoy Marmara University, (Turkey) sersoy@marmara.edu.tr
A. Fedaravičius Kaunas University of Technology, (Lithuania) algimantas.fedaravicius@ktu.lt
R. Ganiev Blagonravov Mechanical Engineering Research Institute, (Russia) rganiev@nwmtc.ac.ru
W. H. Hsieh National Formosa University, (Taiwan) allen@nfu.edu.tw
V. Kaminskas Vytautas Magnus University, (Lithuania) v.kaminskas@if.vdu.lt
V. Kappatos University of Southern Denmark, (Denmark) vk@iti.sdu.dk
V. Klyuev Association Spekr – Group, (Russia) v.klyuev@spekr.ru
G. Kulvietis Vilnius Gediminas Technical University, (Lithuania) genadjus.kulvietis@vgtu.lt
V. Lyalin Izhevsk State Technical University, (Russia) velyalin@mail.ru
R. Martonka Technical University of Liberec, (Czech Republic) rudolf.martonka@tul.cz
R. Maskeliūnas Vilnius Gediminas Technical University, (Lithuania) rimas.maskeliunas@vgtu.lt
L. E. Muñoz Universidad de los Andes, (Colombia) lui-muno@uniandes.edu.co
N. Nistico University of Roma La Sapienza, (Italy) nicola.nistico@uniroma1.it
V. Ostaševičius Kaunas University of Technology, (Lithuania) vytautas.ostasevicus@ktu.lt
A. Palevičius Kaunas University of Technology, (Lithuania) arvydas.palevicus@ktu.lt
G. Panovko Blagonravov Mechanical Engineering Research Institute, (Russia) gpanovko@yandex.ru
L. Qiu Nanjing University of Aeronautics and Astronautics, (China) lei.qiu@nuaa.edu.cn
S. Rakheja Concordia University, (Canada) subhash.rakheja@concordia.ca
V. Ranjan Bennett University, (India) vinayak.ranjan@bennett.edu.in
V. Royzman Khmel'nitskiy National University, (Ukraine) iftom@ukr.net
G. E. Sandoval-Romero The National Autonomous University of Mexico, (Mexico) eduardo.sandoval@ccadet.unam.mx
M. A. F. Sanjuan University Rey Juan Carlos, (Spain) miguel.sanjuan@urjc.es
E. Shahmatov Samara State Aerospace University, (Russia) shakhm@ssau.ru
A. El Sinawi The Petroleum Institute, (United Arab Emirates) aelsinawi@pi.ac.ae
G. Song University of Houston, (USA) gsong@uh.edu
S. Toyama Tokyo A&T University, (Japan) toyama@cc.tuat.ac.jp
K. Uchino The Pennsylvania State University, (USA) kenjiuchino@psu.edu
A. Vakhguel't Nazarbayev University, (Kazakhstan) anatoli.vakhguel't@nu.edu.kz
A. Valiulis Vilnius Gediminas Technical University, (Lithuania) algirdas.valiulis@vgtu.lt
P. Vasiljev Lithuanian University of Educational Sciences, (Lithuania) piotr.vasiljev@leu.lt
V. Veikutis Lithuanian University of Health Sciences, (Lithuania) vincentas.veikutis@ismuni.lt
J. Viba Riga Technical University, (Latvia) janis.viba@rtu.lv
J. Wallaschek Leibniz University Hannover, (Germany) wallaschek@ids.uni-hannover.de
Xiao-Jun Yang China University of Mining and Technology, (China) dyangxiaojun@163.com

JVE Journal of Vibroengineering

Aims and Scope

Journal publishes original papers presenting the state of the art in vibroengineering of dynamical systems.

The list of principal topics:

- Mechanical vibrations and applications;
- Fault diagnosis based on vibration signal analysis;
- Vibration generation and control;
- Seismic engineering and applications;
- Modal analysis and applications;
- Vibration in transportation engineering;
- Flow induced structural vibrations;
- Oscillations in biomedical engineering;
- Chaos, nonlinear dynamics and applications;
- Oscillations in electrical engineering;
- Acoustics, noise control and engineering applications;
- Fractional dynamics and applications.

All published papers are peer reviewed and crosschecked by plagiarism detection tools.

More information is available online <https://www.jvejournals.com>

The journal material is referred:

CLARIVATE ANALYTICS (former THOMSON REUTERS):

Emerging Sources Citation Index (ESCI);
Journal Citation Reports / Science Edition.

SCOPUS: ELSEVIER Bibliographic Database.

COMPENDEX: ELSEVIER Bibliographic Database.

EBSCO: Academic Search Complete;

Computers & Applied Sciences Complete;
Central & Eastern European Academic Source;
Current Abstracts;
Shock & Vibration Digest;
TOC Premier.

GALE Cengage Learning:

Academic OneFile Custom Periodical;
Science in Context.

INSPEC: OCLC. The Database for Physics, Electronics and Computing.

VINITI: All-Russian Institute of Scientific and Technical Information.

DIRECTORY OF OPEN ACCESS JOURNALS (DOAJ): <https://doaj.org>

GOOGLE SCHOLAR: <https://scholar.google.com>

CNKI SCHOLAR: <http://eng.scholar.cnki.net>

CROSSREF: <https://www.crossref.org>

Internet: <https://www.jvejournals.com>

E-mail: publish@jvejournals.com

Publisher: JVE International Ltd., Geliu ratas 15A, LT-50282, Kaunas, Lithuania

JVE Journal of Vibroengineering

FEBRUARY 2019. VOLUME 21, ISSUE 1, PAGES (1-285), ISSN PRINT 1392-8716, ISSN ONLINE 2538-8460

Contents

MECHANICAL VIBRATIONS AND APPLICATIONS

- INFLUENCE OF COMPLEX DAMPING ON TRANSVERSE AND LONGITUDINAL VIBRATIONS OF PORTAL FRAME** 1
MARTA BOLD, WOJCIECH SOCHACKI
- RESEARCH ON STATIC LOAD SHARING CHARACTERISTICS OF POWER SPLIT TWO-STAGE FIVE-BRANCHING STAR GEARING DRIVE SYSTEM** 11
HAO DONG, ZHI-YU LIU, XIAO-LONG ZHAO, YA-HUI HU
- PERFORMANCE OPTIMIZATION OF BANANA VIBRATING SCREENS BASED ON PSO-SVR UNDER DEM SIMULATIONS** 28
ZHANFU LI, KUNYUAN LI, XIAOLE GE, XIN TONG

FAULT DIAGNOSIS BASED ON VIBRATION SIGNAL ANALYSIS

- SENSITIVITY ANALYSES OF RESONANT FREQUENCIES AND MODAL STRAIN ENERGY OF DAMAGED BEAMS BY PERTURBATION METHOD** 40
G. CHEN, P. P. GONG, P. LIANG
- A NOVEL METHOD OF WEAKNESS IMBALANCE FAULT IDENTIFICATION AND APPLICATION IN AERO-HYDRAULIC PUMP** 52
MINGYUE YU, JINCAI CHENG, HUI PAN, RUNZE ZHANG, ZELI LIN
- OPTIMIZING SVM'S PARAMETERS BASED ON BACKTRACKING SEARCH OPTIMIZATION ALGORITHM FOR GEAR FAULT DIAGNOSIS** 66
VANTRONG THAI, JUNSHENG CHENG, VIETHUNG NGUYEN, PHUONGANH DAOTHI
- ON-LINE PREDICTION REMAINING USEFUL LIFE FOR BALL BEARINGS VIA GREY NARX** 82
QIMING NIU, QINGBIN TONG, JUNCUI CAO, YIHUANG ZHANG, FENG LIU

VIBRATION GENERATION AND CONTROL

- RESEARCH OF MULTI-POINT ADAPTIVE CONTROL STRATEGY BASED ON ELECTROMAGNETIC ACTIVE VIBRATION ABSORBER** 97
WEIPENG GAO, GUO HE, SHUYONG LIU

OPTIMAL FUZZY ITERATIVE LEARNING CONTROL BASED ON ARTIFICIAL BEE COLONY FOR VIBRATION CONTROL OF PIEZOELECTRIC SMART STRUCTURES	111
LIANG BAL, YUN-WEN FENG, NING LI, XIAO-FENG XUE	
THE EFFECTIVENESS OF NONLINEAR INTEGRAL POSITIVE POSITION FEEDBACK CONTROL ON A DUFFING OSCILLATOR SYSTEM BASED ON PRIMARY AND SUPER HARMONIC RESONANCES	133
Y. A. AMER, A. T. EL-SAYED, A. M. ABDEL-WAHAB, H. F. SALMAN	
SEISMIC ENGINEERING AND APPLICATIONS	
SEISMIC RESPONSES AND DYNAMIC CHARACTERISTICS OF BOOM TOWER CRANE BASING ON MEASURED STRONG EARTHQUAKE EXCITATION	154
GANG YAO, HANG LI, YANG YANG, WEI PU	
EFFICIENCY OF NEAR-FAULT GROUND MOTION PULSES TO EVALUATE SEISMIC PERFORMANCE OF THE SMRF SYSTEMS	170
SEYED AHMAD MOBINIPOUR, SAEID POURZEYNALI	
MODAL ANALYSIS AND APPLICATIONS	
NATURAL VIBRATION OF TAPERED RECTANGULAR PLATE WITH EXPONENTIAL VARIATION IN NON HOMOGENEITY	187
AMIT SHARMA, NAVEEN MANI, REETA BHARDWAJ	
FLOW INDUCED STRUCTURAL VIBRATIONS	
AERODYNAMIC ADMITTANCE INFLUENCE ON BUFFETING PERFORMANCE OF SUSPENSION BRIDGE WITH STREAMLINED DECK	198
YAO GANG, YANG YANG, WU BO, LIU LIANJIIE, ZHANG LIANGLIANG	
OSCILLATIONS IN ELECTRICAL ENGINEERING	
SECONDARY FREQUENCY REGULATION SCHEME BASED ON IMPROVED VIRTUAL SYNCHRONOUS GENERATOR IN AN ISLANDED MICROGRID	215
KUN JIANG, HONGSHENG SU, DING SUN	
DESIGN AND MODELING OF IMPROVED CONTROLLER USING DC SOURCE FED PERMANENT MAGNET SYNCHRONOUS MOTOR DRIVE WITH ENHANCED DC-DC CONVERTER BY REDUCING VIBRATIONS FOR INDUSTRIAL APPLICATIONS	228
YUVARAJ DURAISAMY, SARAVANA KUMAR GUNASEKARAN	
ACOUSTICS, NOISE CONTROL AND ENGINEERING APPLICATIONS	
A FAST-MULTI-POLE ACCELERATED METHOD OF FUNDAMENTAL SOLUTIONS FOR 2-D BROADBAND SCATTERING OF SH WAVES IN AN INFINITE HALF SPACE	250
ZHONGXIAN LIU, ZHIKUN WANG, LINPING GUO, DONG WANG, FENGJIAO WU	
EXPERIMENTAL ANALYSIS ON NOISE CHARACTERISTICS OF SURFACE-MOUNTED PERMANENT MAGNET SYNCHRONOUS MOTORS	265
SHENBO YU, SHUANGSHUANG ZHONG	

