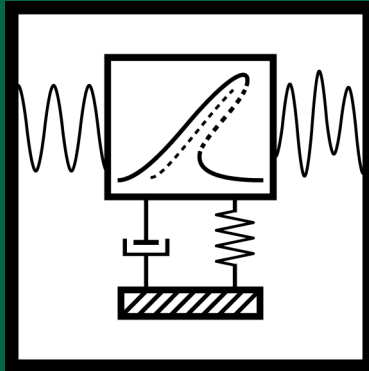


June 2015, Volume 17, Issue 4
Pages (1578-2107), NoP (1617-1660)
ISSN 1392-8716

JVE Journal of Vibroengineering



Editor in chief

K. Ragulskis	Lithuanian Academy of Sciences, (Lithuania)	k.ragulskis@jve.lt, ragulskis.jve@gmail.com
Editorial Board		
V. Babitsky	Loughborough University, (UK)	v.i.babitsky@lboro.ac.uk
N. Bachschmid	Politecnico di Milano, (Italy)	nicolo.bachschmid@polimi.it
R. Bansevicius	Kaunas University of Technology, (Lithuania)	ramutis.bansevicus@ktu.lt
M. Bayat	Tarbiat Modares University, (Iran)	mbayat14@yahoo.com
I. Blekhman	Mekhanobr – Tekhnika Corporation, (Russia)	iliya.i.blekhman@gmail.com
M. Bogdevičius	Vilnius Gediminas Technical University, (Lithuania)	marijonas.bogdevicius@vgtu.lt
K. Bousson	University of Beira Interior, (Portugal)	bousson@ubi.pt
M. Brennan	University of Southampton, (UK)	mjb@isvr.soton.ac.uk
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)	emszhy@hhu.edu.cn
Lu Chen	Beihang University, (China)	luchen@buaa.edu.cn
F. Chernousko	Institute for Problems in Mechanics, (Russia)	chern@ipmnet.ru
R. Daukševičius	Kaunas University of Technology, (Lithuania)	rolanasd@centras.lt
Y. Davydov	Institute of Machine Building Mechanics, (Russia)	lInstitut@bk.ru
M. Dimentberg	Worcester Polytechnic Institute, (USA)	diment@wpi.edu
J. Duhovnik	University of Ljubljana, (Slovenia)	joze.duhovnik@lecad.uni-lj.si
S. Ersoy	Marmara University, (Turkey)	ersoy@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@jf.vdu.lt
V. Klyuev	Association Spektr – Group, (Russia)	v.klyuev@spektr.ru
G. Kulvietis	Vilnius Gediminas Technical University, (Lithuania)	genadijus.kulvietis@vgtu.lt
V. Lyalin	Izhevsk State Technical University, (Russia)	velyalin@mail.ru
R. Maskeliūnas	Vilnius Gediminas Technical University, (Lithuania)	rimas.maskeliunas@vgtu.lt
L. E. Muñoz	Universidad de los Andes, (Colombia)	lui-muno@uniandes.edu.co
V. Ostasevičius	Kaunas University of Technology, (Lithuania)	vytautas.ostasevicius@ktu.lt
A. Palevičius	Kaunas University of Technology, (Lithuania)	arvydas.palevicius@ktu.lt
G. Panovko	Blagonravov Mechanical Engineering Research Institute, (Russia)	gpanovko@yandex.ru
N. Perkins	University of Michigan, (USA)	nep@umich.edu
M. Ragulskis	Kaunas University of Technology, (Lithuania)	minvydas.ragulskis@ktu.lt
V. Royzman	Khmel'nitskiy National University, (Ukraine)	iftomm@ukr.net
M. A. F. Sanjuan	University Rey Juan Carlos, (Spain)	miguel.sanjuan@urjc.es
E. Shahmatov	Samara State Aerospace University, (Russia)	shakhm@ssau.ru
J. Škliba	Technical University of Liberec, (Czech Republic)	jan.skliba@tul.cz
S. Toyama	Tokyo A&T University, (Japan)	toyama@cc.tuat.ac.jp
R. Vaicaitis	Columbia University, (USA)	rimas@civil.columbia.edu
A. Vakhguel't	Nazarbayev University, (Kazakhstan)	anatoli.vakhguel't@nu.edu.kz
P. Vasiljev	Vilnius Pedagogical University, (Lithuania)	vasiljev@vpu.lt
V. Veikutis	Lithuanian University of Health Sciences, (Lithuania)	vincentas.veikutis@lsmuni.lt
J. Viba	Riga Technical University, (Latvia)	janis.viba@rtu.lv
V. Volkovas	Kaunas University of Technology, (Lithuania)	vitalijus.volkovas@ktu.lt
J. Wallaschek	Leibniz University Hannover, (Germany)	wallaschek@ids.uni-hannover.de
Mao Yuxin	Zhejiang Gongshang University, (China)	maoyuxin@zjgsu.edu.cn
M. Zakrzhevsky	Riga Technical University, (Latvia)	mzakr@latnet.lv

JVE Journal of Vibroengineering

Aims and Scope

Original papers containing developments in vibroengineering of dynamical systems (macro-, micro-, nano- mechanical, mechatronic, biomechanics and etc. systems).

The following subjects are principal topics:

- Vibration and wave processes; Vibration and wave technologies;
- Nonlinear vibrations; Vibroshock systems; Generation of vibrations and waves;
- Vibrostabilization; Transformation of motion by vibrations and waves;
- Dynamics of intelligent mechanical systems;
- Vibration control, identification, diagnostics and monitoring.

All published papers are peer reviewed.

General Requirements

The authors must ensure that the paper presents an original unpublished work which is not under consideration for publication elsewhere.

The following structure of the manuscript is recommended: abstract, keywords, nomenclature, introduction, main text, results, conclusions and references. Manuscript should be single-spaced, one column 162×240 mm format, using Microsoft Word 2007 or higher. Margins: top 10 mm, bottom 10 mm, left 15 mm, right 10 mm, header 4 mm, footer 7 mm.

Font: Times New Roman. Title of the article 16 pt Bold, authors name 10 pt Bold, title of the institution 9 pt Regular, equations and text 10 pt Regular, indexes 5 pt Regular, all symbols Italic, vectors Bold, numbers Regular. Paragraph first line indentation 5 mm. Equations are to be written with Microsoft Office 2007 or higher Equation Tool.

Heading of the table starts with table number 9 pt Bold as “**Table 1.**”, then further text 9 pt Regular. Table itself 9 pt Regular.

Figure caption starts with figure number 9 pt Bold as “**Fig. 1.**”, then further text 9 pt Regular. Figure itself must be a single or grouped graphical item.

Tables and figures are placed after the paragraph in which they are first referenced.

List of references: reference number and authors 9 pt Bold, further information 9 pt Regular:

- [1] **Pain H. J.** The Physics of Vibrations and Waves. Chichester: John Wiley and Sons, 2005.
- [2] **Juška V., Svilainis L., Dumbrava V.** Analysis of piezomotor driver for laser beam deflection. Journal of Vibroengineering, Vol. 11, Issue 1, 2009, p. 17-26.

Every manuscript published in Journal of Vibroengineering must be followed by a list of biographies, with a passport type photographs, of all listed authors.

The authors are responsible for the correctness of the English language.

The authors are expected to cover partial costs of publication in JVE.

JVE annual subscription fees: 300 EUR (individual); 600 EUR (institutional).

The journal material is referred:

THOMSON REUTERS: Science Citation Index Expanded (Web of Science, SciSearch®);
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;
TOC Premier.

GALE Cengage Learning: Academic OneFile Custom Periodical.

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

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

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

Internet: <http://www.jvejournals.com>; <http://www.jve.lt>

E-mail: m.ragulskis@jve.lt; ragulskis.jve@gmail.com

Address: Geliu ratas 15A, LT-50282, Kaunas, Lithuania

Publisher: JVE International Ltd.

Contents

MECHANICAL VIBRATIONS AND APPLICATIONS

- 1617. METHOD OF ACTIVE AND PASSIVE VIBRATION REDUCTION OF SYNTHESIZED BIFURCATED DRIVE SYSTEMS OF MACHINES TO THE REQUIRED VALUES OF AMPLITUDES** 1578
TOMASZ DZITKOWSKI, ANDRZEJ DYMAREK
- 1618. DYNAMIC CHARACTERISTICS ANALYSIS AND OPTIMIZATION FOR LATERAL PLATES OF THE VIBRATION SCREEN** 1593
NING ZHOU
- 1619. DESIGN, SIMULATION AND EXPERIMENT OF PARTICLE DAMPERS ATTACHED TO A PRECISION INSTRUMENT IN SPACECRAFT** 1605
XIAOYIN WANG, XIANDONG LIU, YINGCHUN SHAN, TIAN HE
- 1620. DYNAMIC PROPERTIES OF LUFFA CYLINDRICA FIBER REINFORCED BIO-COMPOSITE BEAM** 1615
GARIP GENÇ
- 1621. HOT STRIP MILL NONLINEAR TORSIONAL VIBRATION WITH MULTI-STAND COUPLING** 1623
XIAOBIN FAN, YONG ZANG, FENG WANG, KE JIN
- 1622. A MICROMECHANICAL MODEL ON SPECIFIC DAMPING CAPACITY CAUSED BY MICRO CRACKS** 1634
JIA-LIANG MO, CHU-WEI ZHOU
- 1623. HIGH-FREQUENCY STRUCTURAL-ACOUSTIC ANALYSIS USING AN UNSTRUCTURED ZERO-ORDER ENERGY FEM FORMULATION** 1645
HONG-WEI ZHOU, HAI-BO CHEN, YONG-YAN WANG
- 1624. RESEARCH ON DYNAMIC PERFORMANCE OF FEED DRIVE SYSTEMS BY INTEGRATING THE VIRTUAL PROTOTYPE AND FINITE ELEMENT METHOD** 1660
CHUNXIA ZHU, LIDA ZHU, JIASHUN SHI
- 1625. WAVE-BASED PREDICTION ANALYSIS FOR DYNAMIC-RESPONSE PROBLEM IN NON-CONVEX DOMAIN** 1671
LUYUN CHEN, LEIXIN LI

1626. RESEARCH ON UNBALANCE VIBRATION SIGNAL DE-NOISING OF MOTORIZED SPINDLE	1684
JUAN XU, JIANJUN ZHANG, XU WANG, LI ZHANG, ZHIJUN JI, JIANGHUI DONG	
1627. PRIMARY RESONANCE OF A ROTATING COMPOSITE SHAFT WITH GEOMETRICAL NONLINEAR	1694
YONGSHENG REN, YUHUAN ZHANG, QIYI DAI, XINGQI ZHANG	
1628. DESIGN OF A SMALL REVERBERATION BOX BASED ON BEM-SEA METHOD	1707
LI-GANG WANG, QING ZHANG, XIAN-RONG QIN, YUAN-TAO SUN	
1629. NUMERICAL STUDY ON THE COUPLED VIBRATION CHARACTERISTICS OF DUAL-ROTORS SYSTEM WITH LITTLE ROTATION SPEED DIFFERENCE	1719
WEI TAN, HUAI-MIN LI, HAO WU, ZHEN-WEI LI, HUI-YANG LOU	
1630. RECEPTANCE COUPLING FOR FREQUENCY RESPONSE PREDICTION OF CYLINDRICAL WORKPIECE IN CNC LATHE	1731
HUI LI, GANG XUE, YANG ZHOU, HE LI, BANGCHUN WEN	
1631. DYNAMIC ANALYSIS OF OFFSET PRESS GEAR-CYLINDER-BEARING SYSTEM APPLYING FINITE ELEMENT METHOD	1748
TIANCHENG OUYANG, NAN CHEN, JINXIANG WANG, HUI JING, XIAOFEI CHEN	
FAULT DIAGNOSIS BASED ON VIBRATION SIGNAL ANALYSIS	
1632. THE USE OF A FUZZY LOGIC APPROACH FOR INTEGRATION OF VIBRATION-BASED DIAGNOSTIC FEATURES OF ROLLING ELEMENT BEARINGS	1760
MARCIN STRĄCZKIEWICZ, PIOTR CZOP, TOMASZ BARSZCZ	
1633. LOAD ANALYSIS AND LIFE PREDICTION OF KEY COMPONENTS OF HIGH-SPEED PRESS BASED ON VIRTUAL PROTOTYPING	1769
GUOFA LI, XINGPING ZHOU, CHUANHAI CHEN, HAILONG TIAN, LIANG ZHANG, JIAN WANG, QIONG WANG	
1634. MARINE PROPULSION SHAFT SYSTEM FAULT DIAGNOSIS METHOD BASED ON PARTLY ENSEMBLE EMPIRICAL MODE DECOMPOSITION AND SVM	1783
TAO-TAO ZHOU, XIAN-MING ZHU, CHONG-JIAN WU, WEI-CAI PENG	
1635. DYNAMIC PERTURBATION CHARACTERISTICS FOR NON-BASELINE STRUCTURAL DAMAGE DIAGNOSIS	1796
H. XU, Z. SU, M. S. CAO	
1636. HEALTH ASSESSMENT AND FAULT CLASSIFICATION FOR HYDRAULIC PUMP BASED ON LR AND SOFTMAX REGRESSION	1805
YU DING, JIAN MA, YE TIAN	
1637. ACOUSTICAL SOURCE SEPARATION AND IDENTIFICATION USING PRINCIPAL COMPONENT ANALYSIS AND CORRELATION ANALYSIS	1817
WEI CHENG, ZHOUSUO ZHANG, JIE ZHANG	
1638. STUDY ON DEFECTS DETECTION OF A STRUCTURE UNDERGOING DYNAMIC LOAD	1828
RONG-MEI LIU, DEWEI MENG, ZELUN LI	
1639. SHIFT INVARIANT SPARSE CODING ENSEMBLE AND ITS APPLICATION IN ROLLING BEARING FAULT DIAGNOSIS	1837
XINQING WANG, HUIJIE ZHU, TING RUI, YANFENG LI, TIANSHUAI LIU, MENGXI LIU	
1640. THE SHOCK AND IMPACTING LOAD SIMULATION OF THE NUCLEAR POWER PLANT CRASHED BY THE AIRCRAFT	1849
QIU-SHI YAN, JING-BO LIU	
1641. A NOVEL METHOD FOR SELF-ADAPTIVE FEATURE EXTRACTION USING SCALING CROSSOVER CHARACTERISTICS OF SIGNALS AND COMBINING WITH LS-SVM FOR MULTI-FAULT DIAGNOSIS OF GEARBOX	1861
XINGXING JIANG, SHUNMING LI, YONG WANG	

VIBRATION GENERATION AND CONTROL

- 1642. INTELLIGENT MODELLING AND ACTIVE VIBRATION CONTROL OF FLEXIBLE MANIPULATOR SYSTEM** **1879**
MOHSEN GOL ZARDIAN, AMRAN AYOB
- 1643. STRUCTURE DESIGN OF LINEAR ULTRASONIC MOTOR WITH A LAMINATED U-SHAPED STATOR BASED ON MODAL ANALYSIS** **1892**
BAO-JIANG SUN
- 1644. COMPARATIVE ANALYSIS OF TWO CONTROL ALGORITHMS OF RESONANT OSCILLATIONS OF THE VIBRATION MACHINE DRIVEN BY AN ASYNCHRONOUS AC MOTOR** **1903**
GRIGORY PANOVKO, ALEXANDER SHOKHIN, SERGEY EREMEYKIN, ALEXEY GORBUNOV
- 1645. DYNAMIC CHARACTERISTICS OF MAGNETORHEOLOGICAL FLUID LUBRICATED JOURNAL BEARING AND ITS APPLICATION TO ROTOR VIBRATION CONTROL** **1912**
XIAOHU WANG, HONGGUANG LI, MING LI, HUIYU BAI, GUANG MENG, HUA ZHANG
- 1646. COMPOSITE STATE VARIABLE BASED NONLINEAR BACKSTEPPING DESIGN FOR THE UNDERACTUATED TORA SYSTEM** **1929**
WEIPING GUO, DIANTONG LIU

SEISMIC ENGINEERING

- 1647. MECHANICAL BEHAVIOR OF SEISMIC ISOLATION BEARINGS IN EARTHQUAKE-INDUCED ULTIMATE LIMIT STATE** **1937**
JU OH, CHANGHWAN JANG, JIN HO KIM
- 1648. EFFECT OF LONGITUDINAL JOINTS ON SEISMIC RESPONSE OF THE LARGE SHIELD TUNNEL IN LIQUEFIABLE SOILS** **1945**
WU-SHENG ZHAO, WEI-ZHONG CHEN, DIAN-SEN YANG

MODAL ANALYSIS

- 1649. DETERMINATION OF MODAL DAMPING RATIO FOR A HYBRID FLOOR SYSTEM** **1961**
DORINA ISOPESCU, CONSTANTIN GAVRILOAIA
- 1650. THE AVERAGE CORRELATION SIGNAL BASED STOCHASTIC SUBSPACE IDENTIFICATION FOR THE ONLINE MODAL ANALYSIS OF A DUMP TRUCK FRAME** **1971**
ZHI CHEN, TIE WANG, FENGSHOU GU, RUILIANG ZHANG, JINXIAN SHEN
- 1651. RAYLEIGH-RITZ METHOD FOR ANALYZING FREE VIBRATION OF ORTHOTROPIC RECTANGULAR PLATE WITH 2D THICKNESS AND TEMPERATURE VARIATION** **1989**
SUBODH KUMAR SHARMA, ASHISH KUMAR SHARMA
- 1652. MODAL ANALYSIS OF THE TRIPLE-TOWER TWIN-SPAN SUSPENSION BRIDGE IN DECK UNIT ERECTION STAGE** **2001**
HUI JIN, XIAOYI GUO, LIBIN WANG, DONGMING FENG
- 1653. EFFECT OF CUT-OUT ON MODAL PROPERTIES OF EDGE CRACKED TEMPERATURE-DEPENDENT FUNCTIONALLY GRADED PLATES** **2013**
A. SHAHRJERDI, T. EZZATI
- 1654. DYNAMIC LOAD ALLOWANCE IN DIFFERENT POSITIONS OF THE MULTI-SPAN GIRDER BRIDGE WITH VARIABLE CROSS-SECTION** **2025**
QING-FEI GAO, ZONG-LIN WANG, JUN LI, CHUANG CHEN, HONG-YU JIA

VIBRATION IN TRANSPORT ENGINEERING

- 1655. SIMULATION OF A VISCO-ELASTIC DAMPER BASED ON THE MODEL OF THE VEHICLE SHOCK ABSORBER** **2040**
 JAN WARCZEK, JAKUB MLYŃCZAK, RAFAŁ BURDZIK, ŁUKASZ KONIECZNY
- 1656. FIELD MEASUREMENT, ANALYSIS AND PROTECTION FOR THE VIBRATION OF AN ANCIENT RUIN INDUCED BY RAILWAY** **2049**
 MAO YE, BAOXING CAO, YINPEI PI, MIN REN
- 1657. DESIGN ON LOW NOISE AND LIGHTWEIGHT OF AIRCRAFT EQUIPMENT CABIN BASED ON GENETIC ALGORITHM AND VARIABLE-COMPLEXITY MODEL** **2066**
 YAO-MING ZHOU, YANG ZHAO, ZHI-JUN MENG

FLOW INDUCED STRUCTURAL VIBRATIONS

- 1658. COMPREHENSIVE RESEARCH ON VIBRATION CHARACTERISTICS, STRENGTH AND STABILITY OF T-TAIL** **2077**
 TING-WEI JI, SHUAI ZHANG, JIFA ZHANG

OSCILLATIONS IN BIOMEDICAL ENGINEERING

- 1659. VIBROACOUSTIC METHODS IN DIAGNOSIS OF SELECTED LARYNGEAL DISEASES** **2089**
 MACIEJ KLACZYŃSKI
- 1660. SIMULATION OF HAEMODYNAMICS FOR DISEASED BICUSPID AORTIC VALVE – A NUMERICAL STUDY** **2099**
 CHEUNG-HWA HSU, WU-CHIAO SHIH, HA-HAI VU

- ARTICLE RETRACTION NOTE** **2107**

