

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The authors must ensure that the paper presents an original unpublished work which is not under consideration for publication elsewhere.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;
Shock & Vibration Digest;
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>

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

Internet: <http://www.jvejournal.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

- 2186. NUMERICAL INVESTIGATION OF A PLANETARY DRIVE FOR WIND MILLS** 4155
BAURZHAN TULTAYEV, ALGAZY ZHAUYT, AKSHOLPAN KOPESBAYEVA,
ALMA AUEZOVA, GANI BALBAYEV, BEIBIT SHINGISSOV
- 2187. INFLUENCE OF CUTTERHEAD SYSTEM STRUCTURE ON LOAD DISTRIBUTION AND LIFE OF MAIN BEARING** 4164
CHUNGUANG ZHANG, FUZHENG QU, LI GUO, JUNZHOU HUO, ZHENGYI XIE
- 2188. THE INFLUENCE OF ELASTOHYDRODYNAMIC LUBRICATION ON THE STIFFNESS OF DEEP GROOVE BALL BEARING** 4178
YU ZHANG, LIYANG XIE, XIAO LV, GUOHUA SUN
- 2189. EFFECTS OF THERMAL AND HYDRODYNAMIC CHARACTERISTICS OF HEAVY-DUTY ROTARY TABLE ON THE HYDROSTATIC CIRCULAR PADS** 4193
YIDA WANG, YONGSHENG ZHAO, LIGANG CAI, ZHIFENG LIU, QIANG CHENG
- 2190. DYNAMIC DISTRIBUTION OF CONTACT STRESS OF FRICTION LINING IN THE PROCESS OF FRICTION TRANSMISSION** 4207
YONGBO GUO, DEKUN ZHANG, DAGANG WANG, YUAN LIU, CUNAO FENG
- 2191. DYNAMIC ANALYSIS OF TORUS INVOLUTE GEAR INCLUDING TRANSIENT ELASTOHYDRODYNAMIC EFFECTS** 4222
LEI LIU, JINGWEN TAN
- 2192. COMBUSTION PRESSURE ESTIMATION METHOD OF A SPARK IGNITED COMBUSTION ENGINE BASED ON VIBRATION SIGNAL PROCESSING** 4237
JAIRO A. GRAJALES, HÉCTOR F. QUINTERO, CARLOS A. ROMERO,
EDISON HENAO, JUAN F. LÓPEZ, DANIELA TORRES
- 2193. STUDY ON SEMI-ACTIVE PARTICLE DAMPING TECHNOLOGY FOR OFFSHORE PLATFORM TRUSS STRUCTURE** 4248
ZHAOWANG XIA, JIEMAO KAI, XUETAO WANG, GUANGSHENG SHAO,
WENAN JIANG, YAO SUN
- 2194. RECOGNITION OF ROCK-COAL INTERFACE IN TOP COAL CAVING THROUGH TAIL BEAM VIBRATIONS BY USING STACKED SPARSE AUTOENCODERS** 4261
GUOXIN ZHANG, ZENGCAI WANG, LEI ZHAO

2195. FINITE ELEMENT ANALYSIS ON THE RESPONSE OF 6061-T6 ALUMINUM ALLOY TUBES WITH A LOCAL SHARP CUT UNDER CYCLIC BENDING	4276
CHEN-CHENG CHUNG, KUO-LONG LEE, WEN-FUNG PAN	
FAULT DIAGNOSIS BASED ON VIBRATION SIGNAL ANALYSIS	
2196. FAULT DIAGNOSIS OF ROLLING BEARING USING CVA BASED DETECTOR	4285
BAOXIANG WANG, HONGXIA PAN, WEI YANG	
2197. APPLICATION OF ADAPTIVE LOCAL ITERATIVE FILTERING AND APPROXIMATE ENTROPY TO VIBRATION SIGNAL DENOISING OF HYDROPOWER UNIT	4299
XUELI AN, CHAOSHUN LI, FEI ZHANG	
2198. MILLING CUTTER CONDITION RELIABILITY PREDICTION BASED ON STATE SPACE MODEL	4312
HONGKUN LI, SHUAI ZHOU, HONGLONG KAN, MING CONG	
2199. VIBRATIONS OF RIGID ROTOR SYSTEMS WITH MISALIGNMENT ON SQUIRREL CAGE SUPPORTS	4329
QINGKAI HAN, YUGANG CHEN, HAO ZHANG, LINGLI JIANG, XUEJUN LI	
2200. MULTIPLE PHYSICAL SIGNALS BASED RESIDUAL LIFE PREDICTION MODEL OF SLEWING BEARING	4340
HUA WANG, YAN TANG, RONGJING HONG	
2201. A HYBRID APPROACH OF SYMBOLIC AGGREGATE APPROXIMATION AND BITMAP: APPLICATION TO FAULT DIAGNOSIS OF RECIPROCATING COMPRESSOR VALVE	4354
LIXIANG DUAN, YULONG ZHANG, XUDUO WANG, JINJIANG WANG	
2202. NONLINEAR RESPONSES ANALYSIS CAUSED BY SLANT CRACK IN A ROTOR-BEARING SYSTEM	4369
XUELIAN CHEN	
2203. A NOVEL FAULT DIAGNOSIS APPROACH OF GEARBOX USING AN EMBEDDED SENSOR FIXED GEAR BODY	4388
SHAOHUI NING, ZHENNAN HAN, ZHIJIAN WANG, XUEFENG WU	
2204. NONLINEAR ANALYSIS OF BRAKING DELAY DYNAMICS FOR THE PROGRESSIVE GEARS IN VARIABLE OPERATING CONDITIONS	4401
PAWEŁ LONKWIC, ARKADIUSZ SYTA	
2205. A HYBRID ARTIFICIAL NEURAL NETWORK WITH DEMPSTER-SHAFER THEORY FOR AUTOMATED BEARING FAULT DIAGNOSIS	4409
KAR HOOU HUI, CHING SHENG OOI, MENG HEE LIM, MOHD SALMAN LEONG	
2206. RESEARCH ON DYNAMICAL CHARACTERISTICS OF PLANETARY GEAR SYSTEM WITH TOOTH PITTING	4419
XIANGYANG XU, SHAOJIANG DONG, CHANGRONG LIAO, YOUCHUAN TAO, ZEYIN HE	
2207. MULTI-FAULT DIAGNOSIS FOR ROLLING ELEMENT BEARINGS BASED ON INTRINSIC MODE FUNCTION SCREENING AND OPTIMIZED LEAST SQUARES SUPPORT VECTOR MACHINE	4430
QINGBIN TONG, BAOZHU HAN, YUYI LIN, WEIDONG ZHANG	
2208. ROLLING BEARING FAULT FEATURE EXTRACTION UNDER VARIABLE CONDITIONS USING HYBRID ORDER TRACKING AND EEMD	4449
HONGKAI JIANG, QIUSHI CAI, HUIWEI ZHAO, ZHIYONG MENG	
2209. DYNAMICS STUDY AND DIAGNOSTICS WITH VIBRATION ANALYSIS FROM WORM GEAR MANUFACTURED BY REVERSE ENGINEERING TECHNIQUES	4458
YACINE BENABID, SAID MANSOURI	

- 2210. A FAULT DIAGNOSIS METHOD COMBINED WITH ENSEMBLE EMPIRICAL MODE DECOMPOSITION, BASE-SCALE ENTROPY AND CLUSTERING BY FAST SEARCH ALGORITHM FOR ROLLER BEARINGS** 4472
FAN XU, YAN JUN FANG, RONG ZHANG, ZHENG MIN KONG, RUO LI TANG
- 2211. RAPID EARLY DAMAGE DETECTION USING TRANSMISSIBILITY WITH DISTANCE MEASURE ANALYSIS UNDER UNKNOWN EXCITATION IN LONG-TERM HEALTH MONITORING** 4491
YUN-LAI ZHOU, MAGD ABDEL WAHAB
- 2212. STUDY ON THE DIAGNOSIS OF RUB-IMPACT FAULT BASED ON FINITE ELEMENT METHOD AND ENVELOPE DEMODULATION** 4500
NANFEI WANG, DONGXIANG JIANG, YIZHOU YANG, TE HAN
- 2213. IMPROVEMENT OF THE DURABILITY OF ROLLING BEARINGS IN HIGH-SPEED DRIVE SYSTEMS** 4513
PIOTR DEUSZKIEWICZ

VIBRATION GENERATION AND CONTROL

- 2214. ELECTROMECHANICAL COUPLING CHARACTERISTICS AND SYNCHRONIZATION CONTROL OF TWO-HAMMER SYNCHRONOUS VIBRATION SYSTEM** 4523
XIN LAI
- 2215. INFLUENCE OF MOTOR CONTROL CHARACTERISTICS ON LOAD SHARING BEHAVIOR OF TORQUE COUPLING GEAR SET** 4539
MING LI, YANG YANG, MINGHUI HU, DATONG QIN
- 2216. APPLIED RESEARCH OF THE MULTI-STAGE TORSIONAL VIBRATION DAMPER ON CONTROLLING THE GEAR RATTLE** 4550
LEI WANG, XUN-CHENG WU, WEI-WEI ZHANG

SEISMIC ENGINEERING AND APPLICATIONS

- 2217. CYCLIC TESTING OF REINFORCED CONCRETE COLUMNS WITH DOUBLE OR ONE-SIDE HEADED SHEAR REINFORCEMENT** 4563
TAEHUN HA, SUNGHO LEE, SUNG-CHUL CHUN
- 2218. SEISMIC PERFORMANCE EVALUATION AND IMPROVEMENT FOR DAMAGED REINFORCEMENT CONCRETE PIERS USING A FIBER STEEL COMPOSITE PLATE** 4574
KYOUNGBONG HAN, DOOYONG CHO, JINSOO KIM

MODAL ANALYSIS AND APPLICATIONS

- 2219. FREE VIBRATION ANALYSIS OF TAPERED COLUMNS UNDER SELF-WEIGHT USING PSEUDOSPECTRAL METHOD** 4583
GOPINATHAN SUDHEER, PILLUTLA SRI HARIKRISHNA, YERIKALAPUDY VASUDEVA RAO
- 2220. EXPERIMENTAL RESEARCH AND NUMERICAL SIMULATION OF INFLUENCE OF PRE-STRESS VALUES ON THE NATURAL VIBRATION FREQUENCY OF CONCRETE SIMPLY SUPPORTED BEAMS** 4592
JIE LI, FENG ZHANG
- 2221. DYNAMIC ANALYSES OF OSTEOBLAST VIBRATIONAL RESPONSES: A FINITE ELEMENT VISCOELASTIC MODEL** 4605
LIPING WANG, CORY J. XIAN

VIBRATION IN TRANSPORTATION ENGINEERING

- 2222. NON-LINEAR DYNAMIC ANALYSIS OF REINFORCED CONCRETE BRIDGE COLUMNS UNDER VEHICLE IMPACT LOADINGS** 4617
WOOSEOK KIM, YOSEOK JEONG, KYEONGJIN KIM, JAEHA LEE
- 2223. MODELING AND ANALYSIS OF THE VIBRATION CHARACTERISTICS OF A NEW TYPE OF IN-ARM HYDROPNEUMATIC SUSPENSION OF A TRACKED VEHICLE** 4627
CONGBIN YANG, XIAODONG GAO, ZHIFENG LIU, LIGANG CAI, QIANG CHENG, CAIXIA ZHANG
- 2224. A RAIL-BORNE PIEZOELECTRIC TRANSDUCER FOR ENERGY HARVESTING OF RAILWAY VIBRATION** 4647
M. Y. GAO, P. WANG, Y. CAO, R. CHEN, C. LIU
- 2225. RESEARCH ON THE VIBRATION CHARACTERISTICS OF THE COMMERCIAL-VEHICLE CABIN BASED ON EXPERIMENTAL DESIGN AND GENETIC ALGORITHM** 4664
LI-YA WANG, YANG ZHAO, LAN-PING LI, ZHENG-YIN DING

FLOW INDUCED STRUCTURAL VIBRATIONS

- 2226. RESEARCH INTO THE CHARACTERISTICS OF HORIZONTAL GASEOUS JETS UNDERWATER** 4678
YUNLONG TANG, SHIPENG LI
- 2227. DYNAMIC RESPONSE PREDICTION OF NON-OBSTRUCTIVE PARTICLE DAMPING USING PRINCIPLES OF GAS-SOLID FLOWS** 4692
XIAOFEI LEI, CHENGJUN WU

OSCILLATIONS IN BIOMEDICAL ENGINEERING

- 2228. NEW MIXED ADAPTIVE DETECTION ALGORITHM FOR MOVING TARGET WITH BIG DATA** 4705
DE-GAN ZHANG, SHAN ZHOU, JIE CHEN, SI LIU
- 2229. AUTOMATIC SYSTEM FOR MEASURING SHIFTS AND DEFORMATION OF DENTAL PROSTHESES** 4720
MAREK KUCHTA, MIROSLAW SIERGIEJCZYK, JACEK PAŚ
- 2230. EFFECT OF VIBROACOUSTIC THERAPY ON PAIN MANAGEMENT IN ADOLESCENTS WITH LOW BACK PAIN** 4729
VILMA DUDONIENE, LINA VARNIENE, TOMAS AUKSTIKALNIS, EGLE LENDRAITIENE, JUSTAS CERKAUSKAS, JUOZAS RAISTENSKIS
- 2231. THE EFFECT OF ACCELEROMETER MASS IN MECHANOMYOGRAPHY MEASUREMENTS** 4736
SOONJAE AHN, ISU SHIN, YOUNGHO KIM
- 2232. MODAL AND DYNAMIC RESPONSES OF THE HUMAN HEAD-NECK COMPLEX FOR IMPACT APPLICATIONS** 4743
BIN YANG, LI BO CAO, YONG TANG, NING SUN, KWONG-MING TSE, HEOW-PUEH LEE

CHAOS, NONLINEAR DYNAMICS AND APPLICATIONS

- 2233. AN IMPROVED HOMOTOPY ANALYSIS METHOD WITH ACCELERATED CONVERGENCE FOR NONLINEAR PROBLEMS** 4756
HONG-WEI LI, JUN WANG, LI-XIN LU, ZHI-WEI WANG

2234.	A STOCHASTIC AVERAGING METHOD ON THE STRONGLY NONLINEAR DUFFING-RAYLEIGH OSCILLATOR UNDER GAUSSIAN COLORED NOISE EXCITATION	4766
	GEN GE, ZEPENG LI, QIAN GAO, JINJUAN DUAN	
2235.	NONLINEAR DYNAMIC ANALYSIS OF A COUPLED LATERAL-TORSIONAL SPUR GEAR WITH ECCENTRICITY	4776
	ZHAOHUI REN, JIALIN LI, KAI WANG, SHIHUA ZHOU	
2236.	BIFURCATION AND CHAOS CHARACTERISTIC ANALYSIS OF SPUR MICRO-SEGMENT GEAR PAIR	4792
	KANG HUANG, YANGSHOU XIONG	
2237.	STABILITY AND SLOW-FAST OSCILLATION IN FRACTIONAL-ORDER BELOUSOV-ZHABOTINSKY REACTION WITH TWO TIME SCALES	4812
	JINGYU HOU, XIANGHONG LI, JUFENG CHEN	
2238.	NONLINEAR DYNAMIC CHARACTERISTIC OF THE SPINDLE-CUTTER SYSTEM	4824
	XIANGSHENG GAO, YIDU ZHANG, MIN WANG	
2239.	UNCERTAINTY REPRESENTATION AND QUANTIFICATION FOR A NONLINEAR ROTOR/STATOR SYSTEM WITH MIXED UNCERTAINTIES	4836
	LECHANG YANG, JIANGUO ZHANG, YANLING GUO	
	ACOUSTICS, NOISE CONTROL AND ENGINEERING APPLICATIONS	
2240.	NOISE SUBSPACES SUBTRACTION IN SVD BASED ON THE DIFFERENCE OF VARIANCE VALUES	4852
	XIAOMING ZHANG, JIAN TANG, MEIJUN ZHANG, QUNCE JI	
2241.	NUMERICAL INVESTIGATION ON NOISE REDUCTION FOR AN IN-LINE FAN EQUIPPED WITH HELMHOLTZ RESONATOR	4862
	SHEAM-CHYUN LIN, YU-CHENG CHEN, YEN-JIANG CHEN, HUNG-CHENG YEN	
2242.	INFLUENCE OF WEB PLATE HOLES ON THE RADIATION NOISE CHARACTERISTICS OF WHEELS OF THE HIGH SPEED TRAIN	4870
	XUN-QIAN TONG, JUN LIN, GUAN-YU ZHANG, XI ZHU	