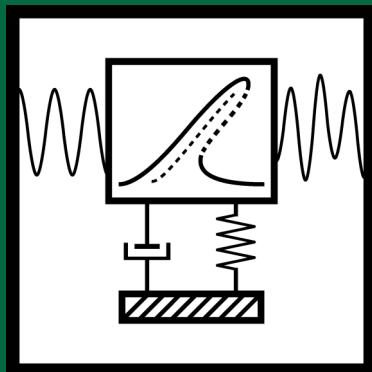


December 2017, Volume 19, Issue 8
Pages (5657-6521), NoP (2698-2758)
ISSN 1392-8716

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. Bansevičius

Kaunas University of Technology, (Lithuania)

ramutis.bansevicius@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)

l.institut@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)
Blagonravov Mechanical Engineering Research Institute, (Russia)algimantas.fedaravicius@ktu.lt
rganiev@nwmtc.ac.ru

R. Ganiev

National Formosa University, (Taiwan)
Vytautas Magnus University, (Lithuania)
Association Spektr – Group, (Russia)
Vilnius Gediminas Technical University, (Lithuania)
Izhevsk State Technical University, (Russia)
Technical University of Liberec, (Czech Republic)
Vilnius Gediminas Technical University, (Lithuania)
Universidad de los Andes, (Colombia)
University of Roma La Sapienza, (Italy)
Kaunas University of Technology, (Lithuania)
Kaunas University of Technology, (Lithuania)
Blagonravov Mechanical Engineering Research Institute, (Russia)allen@nfu.edu.tw
v.kaminskas@if.vdu.lt
v.klyuev@spektr.ru
genadijus.kulvietis@vgtu.lt
velyalin@mail.ru
rudolf.martonka@tul.cz
rimas.maskeliunas@vgtu.lt
lui-muno@uniandes.edu.co
nicola.nistico@uniroma1.it
vytautas.ostasevicius@ktu.lt
arvydas.palevicius@ktu.lt
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

Khmelnitskiy National University, (Ukraine)

iftomm@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@sau.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. Vakhguelt

Nazarbayev University, (Kazakhstan)

anatoli.vakhguelt@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@lsmuni.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

Mao Yuxin

Zhejiang Gongshang University, (China)

maoyuxin@zjgsu.edu.cn

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 <http://www.jvejournals.com>

The journal material is referred:

CLARIVATE ANALYTICS (former 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>

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

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

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

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

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

Publisher: JVE International Ltd.

JVE Journal of Vibroengineering

DECEMBER 2017, VOLUME 19, ISSUE 8, PAGES (5657-6521), NUMBERS OF PUBLICATIONS FROM 2698 TO 2758. ISSN 1392-8716

Contents

MECHANICAL VIBRATIONS AND APPLICATIONS

2698. EFFECT OF ELECTRODE LOCATION AND THICKNESS RATIO OF FLANGE AND WEB ON I CROSS SECTION PIEZOELECTRIC CANTILEVER BEAM FOR ITS ACTUATION CAPABILITY	5657
ATUL, VINAYAK RANJAN, NAND KISHORE SINGH	
2699. RIGID-FLEXIBLE COUPLING DYNAMICS SIMULATION OF PLANETARY GEAR TRANSMISSION BASED ON MFBD	5668
CHIYU HAO, GUANGBIN FENG, HUAGANG SUN, HAIPING LI	
2700. AN ANALYSIS ON STRIP VIBRATION COUPLED WITH TORSIONAL VIBRATION OF MAIN DRIVE SYSTEM OF ROLLING MILL	5679
CHONGYI GAO, GUOJUN DU, RUI LI, XIAOQIANG GUO	
2701. TORSIONAL VIBRATION ANALYSIS OF CRANK TRAIN WITH LOW FRICTION LOSSES	5691
LUBOMÍR DRÁPAL, PAVEL NOVOTNÝ	
2702. EFFECTS OF CASIMIR FORCE ON MULTI-FIELD COUPLED NONLINEAR VIBRATION OF ORTHOTROPIC MICRO FILM	5702
XIAORUI FU, LIZHONG XU	
2703. A NOVEL HIGH-STRENGTH LARGE VIBRATING SCREEN WITH DUPLEX STATICALLY INDETERMINATE MESH BEAM STRUCTURE	5719
ZHENQIAN WANG, CHUSHENG LIU, JIDA WU, HAISHEN JIANG, BAOCHENG SONG, YUEMIN ZHAO	
2704. DYNAMICAL ANALYSIS OF A THIN-WALLED RECTANGULAR PLATE WITH PRELOAD FORCE	5735
QIONG WU, HANJUN GAO, YIDU ZHANG, LONG CHEN	
2705. INFLUENCE OF SUPPORT STIFFNESS ON AERO-ENGINE COUPLING VIBRATION QUANTITATIVE ANALYSIS	5746
MEIJIAO QU, GUO CHEN, JUNFEI TAI	
2706. BENDING OSCILLATIONS OF A CYLINDER, SURROUNDED BY AN ELASTIC MEDIUM AND CONTAINING A VISCOUS LIQUID AND AN OSCILLATOR	5758
LEV I. MOGILEVICH, VICTOR S. POPOV, DMITRY V. KONDRATOV, LEV N. RABINSKIY	

2707. LOAD SPECTRUM GENERATION OF MACHINING CENTER BASED ON RAINFLOW COUNTING METHOD	5767
CHUANHAI CHEN, ZHAOJUN YANG, JIALONG HE, HAILONG TIAN, SHIZHENG LI, DONGLIANG WANG	
2708. VIBRATION DISSIPATION OF AN AXIALLY TRAVELING STRING WITH BOUNDARY DAMPING	5780
EN WEI CHEN, JUN WANG, KAI ZHONG, YIMIN LU, HAOZHENG WEI	
2709. STUDY ON THE EXPERIMENT AND DYNAMICAL CHARACTERISTICS OF VIBRATING ICEBREAKING SYSTEM	5796
YANG LIU, JU QIAN ZHANG, QIANG MA, CHENG DONG LIU, BANG CHUN WEN	
2710. A PARAMETER OPTIMIZATION METHOD FOR STRESS SIMULATION OF DOUBLE HORSE HEAD PUMPING UNIT DYNAMICS MODEL WITH CABLE	5810
LONG QING ZOU, GUI JUAN CHEN, QIAN ZOU, HAI YANG ZHAO	
2711. ANALYTICAL MODELING OF A THIN-WALLED CYLINDRICAL WORKPIECE DURING THE TURNING PROCESS. STABILITY ANALYSIS OF A CUTTING PROCESS	5825
ARTEM GERASIMENKO, MIKHAIL GUSKOV, ALEXANDER GOUSKOV, PHILIPPE LORONG, ALEXANDER SHOKHIN	
2712. DYNAMICS ANALYSIS OF THE PITCH CONTROL REDUCER FOR MW WIND TURBINE	5842
CONGFANG HU, CHENG'GONG SHEN, RUITAO PENG, RUI CHEN	
FAULT DIAGNOSIS BASED ON VIBRATION SIGNAL ANALYSIS	
2713. EEMD-BASED CICA METHOD FOR SINGLE-CHANNEL SIGNAL SEPARATION AND FAULT FEATURE EXTRACTION OF GEARBOX	5858
JUNFA LENG, SHUANGXI JING, CHENXU LUO, ZHIYANG WANG	
2714. STUDY ON COUPLING EFFECT BETWEEN THE TIME-VARYING GEAR BACKLASH AND THE DIFFERENT TIME-VARYING MESH PARAMETERS ON THE GEAR SYSTEM	5874
HAI XU, LING LI CUI, DE GUANG SHANG, YONG GANG XU	
2715. REMAINING LIFE ASSESSMENT FOR BOILER TUBES Affected BY COMBINED EFFECT OF WALL THINNING AND OVERHEATING	5892
SARKEN D. KAPAYEVA, MAREK J. BERGANDER, ANATOLI VAKHGUEL'T, SERIK I. KHAIRALIYEV	
2716. HYBRID RESIDUAL FATIGUE LIFE PREDICTION APPROACH FOR GEAR BASED ON PARIS LAW AND PARTICLE FILTER WITH PRIOR CRACK GROWTH INFORMATION	5908
XIN LIU, YUNXIAN JIA, ZEWEN HE, LEI SUN	
2717. FAULT DIAGNOSIS OF ROTOR USING EMD THRESHOLDING-BASED DE-NOISING COMBINED WITH PROBABILISTIC NEURAL NETWORK	5920
DONG LIU, HONGTAO ZENG, ZHIHUAI XIAO, LIHONG PENG, O. P. MALIK	
2718. A NOVEL INTELLIGENT FAULT DIAGNOSIS METHOD OF ROTATING MACHINERY BASED ON DEEP LEARNING AND PSO-SVM	5932
PEIMING SHI, KAI LIANG, DONGYING HAN, YING ZHANG	
2719. SEQUENTIAL FAULT DETECTION FOR SEALED DEEP GROOVE BALL BEARINGS OF IN-WHEEL MOTOR IN VARIABLE OPERATING CONDITIONS	5947
HONGTAO XUE, MAN WANG, ZHONGXING LI, PENG CHEN	
2720. EFFECTS OF MISALIGNMENT ON THE NONLINEAR DYNAMICS OF A TWO-SHAFT ROTOR-BEARING-GEAR COUPLING SYSTEM WITH RUB-IMPACT FAULT	5960
XIN LU, JUNHONG ZHANG, LIANG MA, JIEWEI LIN, JUN WANG, JIE WANG, HUWEI DAI	
2721. APPLICATION OF DETERMINISTIC RESAMPLING PARTICLE FILTER TO FATIGUE PROGNOSIS	5978
WEIBO YANG, SHENFANG YUAN, JIAN CHEN	

2722. FAULT DIAGNOSIS OF ROLLING ELEMENT BEARING BASED ON WAVELET KERNEL PRINCIPLE COMPONENT ANALYSIS-COUPLED HIDDEN MARKOV MODEL	5992
HONGCHAO WANG, FANG HAO	
2723. FEATURE EXTRACTION METHOD BASED ON VMD AND MFDFA FOR FAULT DIAGNOSIS OF RECIPROCATING COMPRESSOR VALVE	6007
YAN LIU, JINDONG WANG, YING LI, HAIYANG ZHAO, SHUXIN CHEN	
2724. LIFTING LOAD MONITORING OF MINE HOIST THROUGH VIBRATION SIGNAL ANALYSIS WITH VARIATIONAL MODE DECOMPOSITION	6021
FAN JIANG, ZHENCAI ZHU, WEI LI, SHIXIONG XIA, GONGBO ZHOU	

VIBRATION GENERATION AND CONTROL

2725. ADAPTIVE MESH REFINEMENT METHOD FOR OPTIMAL CONTROL BASED ON HERMITE-LEGENDRE-GAUSS-LOBATTO DIRECT TRANSCRIPTION	6036
HUMIN LEI, TAO LIU, DENG LI, JIKUN YE	
2726. THE NET POWER CONTROL OF HYDRAULIC-ELECTRICITY ENERGY REGENERATIVE SUSPENSION	6049
BIAN GONG, XUEXUN GUO, LIN XU, ZHIGANG FANG	
2727. ANALYSIS OF NONLINEAR SUSPENSION POWER HARVEST POTENTIAL	6065
JIN QIU ZHANG, JUN YAO, MING MEI ZHAO, XIN LI	
2728. DYNAMIC ANALYSIS AND CONTROL OF STRIP MILL VIBRATION UNDER THE COUPLING EFFECT OF ROLL AND ROLLED PIECE	6079
ZHAOLUN LIU, JIAHAO JIANG, PENG LI, GUIXIANG PAN, BIN LIU	
2729. STUDY ON ACTIVE VIBRATION ISOLATION SYSTEM USING NEURAL NETWORK SLIDING MODE CONTROL	6094
LIHUA YANG, KAI SU, SHUYONG LIU, HAIPING WU, HAIFENG LI	
2730. ACTIVE VIBRATION ISOLATION USING A SIX-AXIS ORTHOGONAL VIBRATION ISOLATION PLATFORM WITH PIEZOELECTRIC ACTUATORS	6105
SHUAI WANG, ZHAOBO CHEN, YINGHOU JIAO, XIAOXIANG LIU	
2731. THE EFFECT OF LUBRICANT INERTIA ON FLUID CAVITATION FOR HIGH-SPEED SQUEEZE FILM DAMPERS	6122
TIESHU FAN, SINA HAMZEHLLOUIA, KAMRAN BEHDINAN	

SEISMIC ENGINEERING AND APPLICATIONS

2732. SIMPLIFIED CALCULATION METHOD FOR TRANSVERSE SEISMIC RESPONSE OF AQUEDUCTS CONSIDERING FLUID-STRUCTURE INTERACTION	6135
YING CHEN, JIAN HUANG, WENXUE ZHANG, YUNKAI LI	
2733. TRANSVERSE FAILURE MODES AND CONTROL STRATEGIES OF SUPER LONG-SPAN CABLE-STAYED BRIDGE UNDER EXTREME EARTHQUAKE	6152
WEN XIE, LIMIN SUN	
2734. INCREMENTAL DYNAMIC ANALYSIS OF SDOF BY USING NONLINEAR EARTHQUAKE ACCELEROGrams BASED ON MODIFIED INVERSE FOURIER TRANSFORM	6170
ALIREZA FAROUGHI, MAHMOOD HOSSEINI	
2735. ADOPTING METHOD OF KEY BLOCK AND ENERGY DISTRIBUTION TO PREDICT THE SLOPE STABILITY UNDER BLASTING	6183
QINGWEN LI, LU CHEN, LAN QIAO	
2736. ENERGY ABSORPTION CHARACTERISTICS OF CEMENT-SOIL UNDER CONFINING PRESSURE BASED ON SHPB TEST	6198
CHANGHUI GAO, QINYONG MA	

2737. AN EXPERIMENTAL STUDY ON THE SHEAR PROPERTY DEPENDENCY OF HIGH-DAMPING RUBBER BEARINGS	6208
JU OH, JIN HO KIM, SEUNG CHUL HAN	
2738. SEISMIC BEHAVIOR OF BIFURCATED CONCRETE FILLED STEEL TUBE COLUMNS WITH A MULTI-CAVITY STRUCTURE	6222
QIYUN QIAO, HAIPENG WU, WANLIN CAO, XIANGYU LI, WEIBIAO YANG	
2739. SEISMIC FRAGILITY ANALYSIS OF CONTINUOUS BRIDGES WITH UDCMEJ UNDER THE EXCITATION OF SEISMIC SEQUENCE	6242
JIAN GUO WANG, YU TAO PANG, WAN CHENG YUAN	

MODAL ANALYSIS AND APPLICATIONS

2740. VIBRATION MODAL SHAPES AND STRAIN MEASUREMENT OF THE MAIN SHAFT ASSEMBLY OF A FRICTION HOIST	6252
CHI MA, LULU ZHANG, CONGWANG BAO, YUQIANG JIANG, XINGMING XIAO	
2741. THREE-DIMENSIONAL OPERATIONAL MODAL ANALYSIS BASED ON SELF-ITERATION PRINCIPAL COMPONENT EXTRACTION AND DIRECT MATRIX ASSEMBLY	6262
TIANSHU ZHANG, CHENG WANG, YIWEN ZHANG	
2742. THE MODAL ANALYSIS OF THREE-DIMENSION GUN BARREL USING ISOGEOMETRIC ANALYSIS AND ITS APPLICATION TO OPTIMIZATION	6277
QINGSI CHENG, GUOLAI YANG, CHENCHENG YU, QUANZHAO SUN	
2743. VIBRATION CHARACTERISTICS AND MODAL ANALYSIS OF A GRINDING MACHINE	6288
DYI CHENG CHEN, MING FEI CHEN, JING HAO KANG, CHIA CHUN LAI	

VIBRATION IN TRANSPORTATION ENGINEERING

2744. ULTIMATE SHEAR PERFORMANCE AND FRICTION SLIDING RESPONSE OF LAMINATED ELASTOMERIC BRIDGE BEARINGS	6301
YUE LI, QIAN LI, QIQI WU	
2745. IMPACT OF ROAD SURFACE ROUGHNESS AND MAGNETIC FORCE ON THE IN-WHEEL MOTOR MAGNET GAP	6313
DI TAN, YANSHOU WU, FAN SONG	
2746. STUDY ON AERODYNAMIC CHARACTERISTICS AND RUNNING SAFETY OF TWO HIGH-SPEED TRAINS PASSING EACH OTHER UNDER CROSSWINDS BASED ON COMPUTER SIMULATION TECHNOLOGIES	6328
HONG WU, ZHI-JIAN ZHOU	
2747. NONLINEAR DYNAMIC ANALYSIS ON MAGLEV TRAIN SYSTEM WITH FLEXIBLE GUIDEWAY AND DOUBLE TIME-DELAY FEEDBACK CONTROL	6346
JUNQI XU, CHEN CHEN, DINGGANG GAO, SHIHUI LUO, QINGQUAN QIAN	

FLOW INDUCED STRUCTURAL VIBRATIONS

2748. NUMERICAL SIMULATION OF THE RELATIONSHIP BETWEEN UNDERWATER JETS OSCILLATION AND SHOCK WAVE	6363
YUNLONG TANG, SHIPENG LI	
2749. SIMULATION ANALYSIS ON INNER FLOW FIELD AND OPTIMIZATION DESIGN OF AIR KNIFE	6374
JIAN QING CHEN, KE CHEN, XIAN MING CHEN	

OSCILLATIONS IN BIOMEDICAL ENGINEERING

- 2750. RESEARCH ON DYNAMIC CHARACTERISTICS OF SPIRAL BASILAR MEMBRANE AFTER REPLACING ARTIFICIAL AUDITORY OSSICLE BASED ON THE RECONSTRUCTED HUMAN EAR MODEL** 6390
YU WANG, HONG MEI XUE

CHAOS, NONLINEAR DYNAMICS AND APPLICATIONS

- 2751. CHAOS ANALYSIS OF SHIP ROLLING MOTION IN STOCHASTIC BEAM SEAS** 6403
SHENGHONG LI, KANGKANG WANG

OSCILLATIONS IN ELECTRICAL ENGINEERING

- 2752. PROPAGATION OF ROTATIONAL WAVES IN A BLOCK GEOMEDIUM** 6413
VLADIMIR I. EROFEEV, ANNA V. LEONTYEVA, IGOR S. PAVLOV
2753. EFFICIENT FPGA-BASED FIR – ARCHITECTURE AND ITS SIGNIFICANCE IN ULTRASONIC SIGNAL PROCESSING 6423
KUMAR ANUBHAV TIWARI, ARMANtas OSTREIKA, JURATE PLATUZIENE
2754. DESIGN AND IMPLEMENTATION OF DC SOURCE FED IMPROVED DUAL-OUTPUT BUCK-BOOST CONVERTER FOR AGRICULTURAL AND INDUSTRIAL APPLICATIONS 6433
SATHISH KUMAR SHANMUGAM, ARUMUGAM SENTHILKUMAR

ACOUSTICS, NOISE CONTROL AND ENGINEERING APPLICATIONS

- 2755. NUMERICAL COMPUTATION FOR THE IMPACT OF FLOW RATE AND ROTATIONAL SPEED ON THE FLOW-INDUCED NOISE OF THE CENTRIFUGAL PUMP** 6455
YUE WANG, BI FENG SONG, WEN PING SONG, JUAN REN
2756. NUMERICAL COMPUTATION FOR THE IMPACT OF PANTOGRAPH ANGLES ON THE NEAR-FIELD AND FAR-FIELD AERODYNAMIC NOISES OF PANTOGRAphS 6471
JIA WEI TAN, BIN BAI, XIANG YU XU, XIAO LEI YANG
2757. A NOVEL MPP-NSGA ALGORITHM AND ITS APPLICATION IN OPTIMIZATION FOR RADIATED NOISES IN THE AIRCRAFT CABIN 6485
JIE LI, WEI XING LIU, YU ZHU ZHANG, LING ZHANG, SHAN SHAN LI
2758. NUMERICAL INVESTIGATION ON AERODYNAMIC NOISES OF THE LATERAL WINDOW IN VEHICLES 6502
YE-GANG CHEN, XIANG-HONG WANG, YAO-MING ZHOU

RETRACTION: NUMERICAL STUDY FOR SINGLE AND MULTIPLE DAMAGE DETECTION AND LOCALIZATION IN BEAM-LIKE STRUCTURES USING BAT ALGORITHM 6519**RETRACTION: MULTIPLE DAMAGE DETECTION AND LOCALIZATION IN BEAM-LIKE AND COMPLEX STRUCTURES USING CO-ORDINATE MODAL ASSURANCE CRITERION COMBINED WITH FIREFLY AND GENETIC ALGORITHMS** 6520**RETRACTION: RAPID EARLY DAMAGE DETECTION USING TRANSMISSIBILITY WITH DISTANCE MEASURE ANALYSIS UNDER UNKNOWN EXCITATION IN LONG-TERM HEALTH MONITORING** 6521

