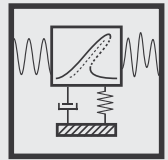


Mechanical Engineering

Multidisciplinary Engineering

Materials Science and Technology

Vibroengineering Procedia



VP Vibroengineering PROCEEDIA

Vibroengineering PROCEEDIA Volume 61 contains papers presented at the 75th International Conference on Vibroengineering in Trieste, Italy, April 13, 2026. The main theme of the Conference is “Structural Dynamics, Vibrations and Monitoring in Civil Engineering: Challenges, Methods and Applications”.

Aims and Scope

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

The list of principal topics:

- Measurements in engineering
- Mathematical models in engineering
- Acoustics, noise control and engineering applications
- Mechanical vibrations and applications
- Fault diagnosis based on vibration signal analysis
- Vibration control, generation and harvesting
- Seismic engineering and applications
- Modal analysis and applications
- Vibration in transportation engineering
- Flow induced structural vibrations
- Oscillations in biomedical engineering
- Chaos, non-linear dynamics and applications
- Oscillations in electrical engineering
- Fractional dynamics and applications
- System dynamics in manufacturing system modeling
- Dynamics of smart and functionally graded materials

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

More information is available online <https://www.extrica.com/journal/vp>

Vibroengineering PROCEEDIA is referred in:

Scopus: ELSEVIER Bibliographic Database.

EI 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;
Science in Context.

ResearchGate: <https://www.researchgate.net>

Scilit: <https://www.scilit.net>

Dimensions: <https://www.dimensions.ai>

Semantic Scholar: <https://www.semanticscholar.org>

Google Scholar: <https://scholar.google.com>

CORE: <https://core.ac.uk>

Ulrich's Periodicals Directory: <https://ulrichsweb.serialssolutions.com>

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

cnplINKer (CNPIEC): <http://cnplinker.cnpeak.com>

WanFang Data: <https://www.wanfangdata.com.cn>

TDNet: <https://www.tdnet.io>

WorldCat Discovery Services: <https://www.oclc.org/en/worldcat-discovery.html>

Crossref: <https://search.crossref.org>

Content is archived in **Martynas Mazvydas National Library of Lithuania**

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

E-mail: publish@extrica.com

Publisher: Extrica

75th International Conference on VIBROENGINEERING

April 13, 2026, in Trieste, Italy

The main theme of the conference: **Structural Dynamics, Vibrations and Monitoring in Civil Engineering: Challenges, Methods and Applications**

General Topics of the Conference:

- Mechanical vibrations and applications
- Fault diagnosis based on vibration signal analysis
- Seismic engineering and applications
- Vibrations in transport engineering
- Vibration control, generation and harvesting
- Acoustics, noise control and engineering applications
- Flow induced structural vibrations
- Modal analysis and applications
- System dynamics in manufacturing system modelling
- Materials and measurements in engineering
- Mathematical models in engineering
- Vibration Engineering
- Robotics and Mechatronics
- Vibration problems in smart Transportation Systems and Logistics
- Energy (topics related to vibroengineering)
- Artificial Intelligence and Machine Learning in vibroengineering
- Signal Processing and electronic circuits (topics related to vibroengineering)
- Electronics and power systems (topics related to vibroengineering)
- Data analysis and visualization (topics related to vibroengineering)

Chairs:

Chiara Bedon University of Trieste
Flavio Stochino University of Cagliari

Scientific Organizing Committee Members

Nicola Chieffo University of Huddersfield
Corrado Chisari University of Campania "Luigi Vanvitelli"
Cristoforo Demartino University of Rome Tre
Izabela Drygala Cracow University of Technology
Giovanni Fabbrocino University of Molise
Antonio Formisano University of Naples Federico II
Marco Fasan University of Trieste
Giada Gasparini University of Bologna
Carmelo Gentile Politecnico di Milano
Antonino Maria Marra University of Florence
Enzo Martinelli University of Salerno
Giuseppe Quaranta University of Rome – La Sapienza
Fabio Rizzo Polytechnic University of Bari
Filipe A. Santos NOVA School of Science and Technology, Universidade NOVA de Lisboa
Martina Sciomenta University of L'Aquila
Marco Simoncelli Politecnico di Milano
Mislav Stepinac University of Zagreb
Filippo Ubertini University of Perugia

VP Vibroengineering PROCEDIA

AUGUST 2021. VOLUME 37, PAGES (2108-27421-184), ISSN PRINT 1392-8716, ISSN ONLINE 1392-8716

Contents

MECHANICAL VIBRATIONS AND APPLICATIONS

- TRAJECTORY-ORIENTED SYNTHESIS OF A PLANETARY-TYPE VIBRATION EXCITER FOR VIBRATORY TECHNOLOGICAL EQUIPMENT** 1
VITALIY KORENDIY, OLEH PARASHCHYN, OLEKSANDR KACHUR,
VIKTOR LOZYNKYI, SERHII HREVTSOV, NATALIYA HEMBARA
- DESIGN OF A NEW TYPE OF VIBRATING SCREEN WITH ADJUSTABLE MULTIPLE VIBRATION PARAMETERS** 11
LINGCHAO MENG, LIAO WU, YUFENG DU, JIANHUI SHI, ZHENQIAN WANG
- ACCELERATION-DRIVEN CAM PROFILE SYNTHESIS FOR A CAM-TYPE VIBRATION EXCITER WITH AN ELASTICALLY COUPLED OSCILLATING MASS** 17
VITALIY KORENDIY, VLADYSLAV KYRYCHUK, INHA SVIDRAK,
OLEH KOTSUMBAS, ROMAN PELO, VASYL BRYTKOVSKYI
- SENSITIVITY OF SDOF STEEL-PLATE RESPONSE TO EQUIVALENT PRESSURE-TIME HISTORIES FOR VENTED DEFLAGRATION LOADS** 26
FRANCESCO PINNA, MARCO ZUCCA, MARCO SIMONCELLI
- ### FAULT DIAGNOSIS BASED ON VIBRATION SIGNAL ANALYSIS
- BRIDGE HEALTH MONITORING, STRUCTURAL ASSESSMENT AND DYNAMIC RESPONSE WITH REMOTE CONTROLS** 33
MUHAMMAD ZIAD BACHA, MARIO LUCIO PUPPIO, GIORGIO SERRA,
MAURO SASSU
- BRIDGE HEALTH MONITORING, STRUCTURAL ASSESSMENT AND DYNAMIC RESPONSE: OVERVIEW AND PERSPECTIVES** 39
MUHAMMAD ZIAD BACHA, MARIO LUCIO PUPPIO, GIORGIO SERRA,
MAURO SASSU

VIBRATION CONTROL, GENERATION AND HARVESTING

- ANALYSIS OF DYNAMIC VIBRATION ISOLATION PERFORMANCE OF BELL PLATE-COMPRESSED MAGNETORHEOLOGICAL FLUID MOUNT** 45
LINGYUN WEI, ZHIHONG LIN

SEISMIC ENGINEERING AND APPLICATIONS

- IOT-ENABLED STRUCTURAL HEALTH MONITORING: A CASE STUDY IN THE CAMPI FLEGREI SEISMIC AREA** 51
FRANCESCO NIGRO, DOMENICO SANTANIELLO, ANGELO LORUSSO,
FRANCESCO COLACE, ENZO MARTINELLI
- VIBRATION TESTS TO IDENTIFY NUMERICAL MODELS OF MASONRY ARCH BRIDGES WITH BACKFILL FOR NON-LINEAR SEISMIC ANALYSIS** 58
ELISA MONTIS, SALVADOR IVORRA, MARIA CRISTINA PORCU
- BIVARIATE REGRESSION MODEL FOR THE NATURAL VIBRATION PERIOD ANALYSIS OF MASONRY MINARETS** 65
MARCO FASAN, MARIAM A. SALLAM, HANY M. HASSAN, CHIARA BEDON
- TOWARDS DYNAMIC MONITORING FOR TREEFALL RISK ASSESSMENT AND RISK REDUCTION ON CIVIL INFRASTRUCTURE OPERABILITY** 71
MARCO CIVERA, ALESSIO RUBINO, UMBERTO GARLANDO, ELENA BELCORE

MODAL ANALYSIS AND APPLICATIONS

- OPERATIONAL MODAL ANALYSIS FOR STRUCTURAL IDENTIFICATION OF REINFORCED CONCRETE BRIDGES: TWO CASE STUDIES** 79
FLAVIO STOCHINO, FAUSTO MISTRETTA, MICHELE SERRA, ARNAS MAJUMDER
- MODAL CHARACTERISTICS ANALYSIS OF STEERING GEAR SYNCHRONOUS BELT UNDER PRE-TENSION BASED ON ABAQUS** 86
XIAOFEI DU, YIFEN LIU

VIBRATION IN TRANSPORTATION ENGINEERING

- STUDY ON THE IMPACT OF NEW PIER CAP CONSTRUCTION ON ADJACENT HIGH-SPEED RAILWAY SUBGRADES** 92
TIAN HAO GONG, YUN LONG YAO
- EXPERIMENTAL INVESTIGATION OF VIBRATION AND STRUCTURE-BORNE NOISE IN INTEGRATED RAILWAY STATION BUILDINGS** 99
ZHIHONG LIAO
- AN INERTIA CHANNEL DESIGN METHOD FOR A HYDRAULIC DAMPER SPECIFICALLY USED IN HIGH-SPEED RAILWAYS** 108
JIANQIANG GUO, YU CAO, XINYING WANG, SHUANG WANG, YAN HU
- SMARTPHONE-BASED ASSESSMENT OF ROAD SURFACE ROUGHNESS USING ACCELEROMETER DATA AND GIS MAPPING** 115
IMAD UD DIN AHMED

FLOW INDUCED STRUCTURAL VIBRATIONS

FLOW-INDUCED FLAPPING OF THIN FLEXIBLE PLATES	123
MARIO PISTIS, VICTOR A. EREMEYEV, GIORGIO FOTIA, ANTONIO CAZZANI	

MATERIALS AND MEASUREMENTS IN ENGINEERING

RESEARCH AND IMPLEMENTATION ON DYNAMIC MEASUREMENT METHOD FOR THE VIBRATING WIRE INSTRUMENTS	130
LIANGMING MAO, XIU JIANG, BO FENG	
EXPERIMENTAL STUDY ON RESIDUAL STRESSES IN STUD WELDING BASED ON X-RAY DIFFRACTION AND THE BLIND-HOLE METHOD	137
WEI LI, YANGMING XU, YUHAO LIU, HEYUAN ZHOU, SICONG WEI, XU HAN	
DYNAMIC ASSESSMENT OF THROUGH-CRACKED LAMINATED GLASS ELEMENTS UNDER REPEATED IMPACTS	144
NICOLA CELLA, CHIARA BEDON	
MECHANICAL RESPONSE AND DAMAGE EVOLUTION OF CFRP LAMINATES UNDER COUPLED THERMAL-IMPACT LOADING	151
FENGFENG WANG, JINYU ZHOU, LEI LI	
MONITORING AND CONTROL TECHNOLOGIES FOR THE FULL-PROCESS CONSTRUCTION OF A LONG-SPAN CABLE-STAYED BRIDGE	158
ZHENTIAN YANG, XIAOTANG WANG, WANJING FU	
RESEARCH ON NEGATIVE ION-FUNCTIONAL INORGANIC ARTIFICIAL STONE	166
CHI LEI, HAIJUN XU, ZHIGUO ZHOU, HESONG HU, XIAOPENG WU, ZHIJIE ZHANG, MINGFENG ZHONG	

MATHEMATICAL MODELS IN ENGINEERING

RESEARCH ON THE FEASIBILITY AND FORCE CONTROL MEASURES IN THE CONSTRUCTION PROCESS OF LONG-SPAN CONTINUOUS RIGID FRAME BRIDGE WITH LOW PIERS	172
YONGXIANG LIU, CHENG YIN, XIONGFENG GAO, HAO PENG	
PARAMETER CHARACTERISTICS OF SINGLE CRYSTAL SILICON SOLAR CELL MODEL BASED ON MATLAB	178
PENG ZHANG, QINXIAN ZHENG, JIALE DOU	

<<Contents>>

<<TheEnd>>

SHORT DESCRIPTION ABOUT THIS CATEGORY

Vibroengineering is an abbreviation of two words: vibration and engineering. Vibration phenomena play an important role in a wide range of mechanical, structural, electromechanical systems. Vibration engineering covers such topics as mechanical vibrations and applications, fault diagnosis based on vibration signal analysis, seismic engineering, acoustics and noise control, energy harvesting and vibration generation.

Every consecutive Volume of Vibroengineering Procedia is dedicated to a separate conference in the series of International Conferences on Vibroengineering.