JOURNAL OF SOUND AND VIBRATION

An official medium of publication for the Institute of Acoustics

Founder: E.J. Richards

Editors Emeritus: P.E. Doak M. Petyt

Editors

Editor-in-Chief and European Editor:

C. Morfey

Institute of Sound and Vibration Research University of Southampton Southampton SO17 1BJ

E-mail: jsv@isvr.soton.ac.uk

European Associate Editor, Vibration topics, and deputy Editor-in-Chief:

M.P. Cartmell

Department of Mechanical Engineering University of Glasgow University Avenue Glasgow G12 8QQ

E-mail: m.cartmell@mech.gla.ac.uk

European Associate Editor:

A.V. Metrikine

Head of Wave Mechanics Research Group Section of Structural Mechanics Faculty of Civil Engineering and Geosciences Delft University of Technology Stevinweg 1, 2628 CN Delft, The Netherlands E-mail: A.Metrikine@tudelft.nl

Associate Editor, Aeroaoustics:

P. Joseph

Institute of Sound and Vibration Research University of Southampton Southampton SO17 1BJ E-mail: jsv@isvr.soton.ac.uk

Associate Editor, Computational Acoustics:

J. Astley

Institute of Sound and Vibration Research University of Southampton Southampton SO17 1BJ IJК E-mail: jsv@isvr.soton.ac.uk

Americas Editors:

J.S. Bolton and P. Davies

c/o Donna Miller Ray W. Herrick Laboratories Purdue University 140 South Martin Jischke Drive West Lafayette, IN 47907-2031

E-mail: dmiller@ecn.purdue.edu

Australasian Editor and Associate Editors: Y.K. Cheung, L.G. Tham and J. Lam

University of Hong Kong

Submissions c/o:

Journal of Sound and Vibration S&T Editorial Services 1 West, Elsevier The Boulevard, Langford Lane Kidlington, OX5 1GB

E-mail: jsv@elsevier.com

Associate Editor, Signal Processing:

K. Shin

School of Mechanical Engineering, Aandong National University, 388 Songcheon-Dong, Andong, Kyungbuk 760-749 South Korea E-mail: kshin@andong.ac.kr

Book Review Editor:

M.C.M. Wright

Institute of Sound and Vibration Research University of Southampton Southampton SO17 1BJ

E-mail: mcmw@isvr.soton.ac.uk

Editorial Roard

M. Amabili

Department of Industrial Engineering, University of Parma, Parco Area delle Scienze 181/A, Parma 43100,

H. Bodén

KTH SE-10044, Stockholm, Sweden

J. Browniohn

Department of Civil and Structural Engineering, University of Sheffield, Mappin Street, Sheffield, S1 3JD, UK

M.J. Buckingham

University of California San Diego La Jolla, CA 92093-0213, USA

C.J. Chapman

Department of Mathematics, University of Keele, Keele, Staffordshire, ST5 5BG, UK

A. Cummings
Trenwith, Ludlow Road, Little Stretton, Church Stretton, Salop, SY6 6RB, UK

Institute of Mechanics and Machine Design. Cracow University of Technology, A Jana Pawla II 37, Krakow, PL-31-854,

F Dokumaci

Dokuz Eylul University, Bornova 35100, Izmir, Turkey

I.F. Dunne

University of Sussex, Falmer, Brighton, Sussex BN1 9QT, UK

Florida Atlantic University, Boca Raton, FL 33431-0991, USA

NASA Langley Research Center, M/S 461, Hampton, VA 23681-2199, USA

J.M. Fields

10407 Royal Road, Silver Spring MD 20903, USA

Academy of Sciences of Czech Republic Prosecká 76, 190 00 Prague 9, Czech Republic

G.M.L. Gladwell

University of Waterloo, Waterloo, Ontario, Canada N2L 3G1

Florida Atlantic University, Boca Raton, FL 33431-0991, USA

D.J. Gorman

770 King Edward Ave., University of Ottawa, P.O. Box 450, Stn. A., Ottawa K1N 6N5,

M. Griffin

Human Factors Research Unit, Institute of Sound and Vibration Research. University of Southampton, Highfield, Southampton, SO17 1BJ, UK

J.-L. Guyader INSA-Lyon, F-69621 Villeurbanne Cedex, France

Keele University, Keele, Staffordshire ST5 5BG, UK

Department of Aeronautical & Automotive Engineering, Loughborough University, Loughborough, LE11 3TD, UK

H. Hu

Institute of Vibration Engineering Research, Nanjing University of Aeroautics and Astronautics, 29 Yudao Street, Jiangsu 210016, China

A. Kahraman

Department of Mechanical Engineering, Ohio State University, 201 West 19th Ave., Columbus OH 43210, USA

Cardiff School of Engineering (ENGIN6), University of Wales Cardiff, PO Box 925. The Parade, Cardiff, CF24 0YF, UK

G.H. Koopmann

Pennsylvania State University, University Park, PA 16801-1400, USA

R.S. Langley

University of Cambridge, Cambridge CB2 1PZ, UK

Colorado State University, Fort Collins, CO 80523-1374, USA

Department of Mechanical Engineering, University of Wales Swansea, Singleton Park, Swansea, SA2 8PP, UK

R. Lewandowski

Technical University of Poznan, Piotrowo Street 5, Pznan 60-965, Poland

B.A.T. Petersson

Technical University of Berlin, D-10587 Berlin, Germany

S.W. Rienstra

Dep. of Mathematics & Comp. Sc. Eindhoven University of Technology, Den Dolech 2, 5612 AZ Eindhoven, P.O. Box 513, 5600 MB Eindhoven, The Netherlands

A.A. Shabana

Department of Mechanical Engineering, University of Illinois at Chicago, 842 W. Taylor Street, Chicago, II. 60607-7022 USA

R. Singh

Ohio State University, 201 West 19th Ave. Columbus, OH 43210, USA

Department of Mechanical Engineering, Aalborg University, Pontoppidanstraede 101, Aalborg, DK-9220,

School of Engineering, University of California Merced, 5200 N. Lake Road, Merced, CA 95344, USA

E.E. Ungar

Acentech Inc., 33 Moulton Street, Cambridge, MA 02138-1118, USA

D. Wagg

Department of Mechanical Engineering, University of Bristol, Queen's Buildings, University Walk, Bristol BS8 1TR, UK

J. Woodhouse

Department of Engineering, University of Cambridge, Trumpington St., Cambridge CB2 1PZ, UK

K. Worden

Department of Mechanical Engineering, University of Sheffield, Mappin Street, Sheffield, S1 3JD, UK

Department of Architecture, South China University of Technology, Guangzhou, China

G. Yamada

Hokkaido University, Kita-13, Nishi-8, Kita-ku, Sapporo 060, Japan

Y.B. Yang

Department of Civil Engineering, National Taiwan University, No 1 Sec 4 Roosevelt Road, Taipei 10617, Taiwan