

Table of contents

8 Stochastic dynamics

Computational methods in stochastic structural dynamics <i>G.I.Schuëller, C.G.Bucher & H.J.Pradlwarter</i>	599
Digital filters for the simulation of two-dimensional random fields in structural dynamics <i>Pol D.Spanos & Marc P.Mignolet</i>	607
A non-Gaussian stochastic linearization technique based on the cumulant-neglect closure method <i>Wenlung Li</i>	613
Reliability of stochastic loaded constructions <i>H.Friedrich & C.Lange</i>	619
Stochastic representation of footbridge vibrations taking into account feedback effects <i>H.Grundmann & M.Schneider</i>	623
Spatial correlation effects in random vibration of structures <i>Milos Novak</i>	631
Stochastic nonlinear hysteretic finite element analysis <i>H.J.Pradlwarter</i>	637
Statistical modelling of dynamic loads imposed by occupancies <i>C.Rebelo, R.J.Scherer & J.Eibl</i>	645
On the calculation of higher order spectral densities <i>R.H.Peinelt</i>	653
Stochastic dynamic analysis of marine structures subjected to sea loads <i>T.Moan, B.J.Leira & A.Olufsen</i>	661
Statistical linearization: Multiple solutions and their physical significance <i>J.B.Roberts</i>	671
Markov models and range counting in random fatigue <i>Steen Krenk & Henrik Gluwer</i>	683

9 Soil-structure-fluid-interaction

Vibration isolation by trenches in homogeneous and layered soils <i>D.E. Beskos & I.G. Vardoulakis</i>	693
Vibration transmitting behavior of the soil <i>Nawawi Chouw, Rong Le & Günther Schmid</i>	701
Effectiveness of trenches or screens for scattering surface waves <i>D. Le Houédec, S. Malek & J. Picard</i>	709
Experimental investigation on reduction of impact vibrations through ground by means of shallow vertical trenches <i>R. Ciesielski & A. Zięba</i>	717
Soil-vibration and radiation of energy under a harmonic load on the soil-surface <i>Gerhard H. Müller</i>	723
Seismic site effect and soil structure interaction <i>Denis Aubry & Didier Clouteau</i>	731
Dynamic response of elastic structures in unilateral soil contact with friction <i>H. Antes & B. Steinfeld</i>	739
Damping of vibrations of arbitrarily shaped foundations on layered soil <i>Rainer Zinn</i>	747
Structural analysis under technical seismic excitation <i>D. Makovička</i>	755
Behaviour of berthing structures under dynamic loads <i>Abdellah Alem & Jean-Georges Sieffert</i>	763
Methods of dynamic analysis of structural systems <i>C.C. Spyrakos</i>	771
Vibratory driving of tubes into dry granular soil <i>H. Schmieg & P. Vielsack</i>	779
Consistent frequency-independent stiffness, damping and mass matrices to model the unbounded soil <i>John P. Wolf</i>	787
Influence of the geometrical effects of the soil on structure-soil-structure interaction <i>Nawawi Chouw & Günther Schmid</i>	795
Dynamic response of tunnel structures <i>O. von Estorff & H. Antes</i>	803
Seismic analysis of dams including soil-structure-fluid interaction <i>J. Dominguez, F. Medina & O. Maeso</i>	811
A multi-component-continua theory for the analysis of dykes and breakwaters under dynamic impact <i>Th. Hartmann & U. Meißner</i>	819

On the dynamics of a viscous, incompressible flow past an elastically supported, circular cylinder at small Reynolds numbers <i>Jörg Wauer</i>	827
Visualization of dynamic change in configuration of underwater particle assemblage <i>Kazuo Konagai & Choshiro Tamura</i>	837
Hydrodynamic pressures on a flexible quay wall <i>R.S.Steedman & X.Zeng</i>	843
Fluid-structure interaction for arch dams <i>Benedikt Weber</i>	851
Interaction behaviour of foundation systems subjected to dynamic loads by means of centrifuge model tests <i>Gerhard Thiel, Michael Kotthaus & H.L.Jessberger</i>	859
 10 <i>Numerical modelling and computational aspects</i>	
An integral equation approach to the vibration problem of thick plates <i>J.T.Katsikadelis, A.J.Yotis & E.J.Sapountzakis</i>	869
On the vibration of circular plates having two elastic point supports <i>S.Azimi</i>	877
An iterative three-dimensional solution of the free vibration problem of homogeneous orthotropic hollow cylinders <i>Kostas P.Soldatos & Terry D.Hawkes</i>	883
The residual variable method and its applications in shell-fluid interaction problems <i>N.Akkas</i>	891
3-D modelling of buildings for nonlinear seismic analysis <i>Sanjeev Srivastav & John F.Abel</i>	899
Earthquake response of shearwall-frame building structures <i>Riko Rosman</i>	907
Dynamic contact between adjacent structures using a formulation with Lagrange multipliers <i>M.Papadrakakis, H.Mouzakis & S.Bitzarakis</i>	913
Vibrations of thin-walled prismatic structures under simultaneous static load using Generalized Beam Theory <i>R.Schardt & D.Heinz</i>	921
Dynamic large deflection analysis of 3-D beam structures <i>Pao-Hsii Wang, Hwei-Yao Sheu & Shuenn-Jeng Lai</i>	929
Nonlinear vibrations of Mindlin beams <i>Jerzy Rakowski</i>	937
Nonlinear finite element implementation on multi-processor systems <i>D.R.J.Owen, J.S.R.Alves F. & G.P.Mitchell</i>	943

Dynamic analysis and high speed simulations with a fast vectorized algorithm <i>K.-H. Elmer</i>	953
Optimization of multi-component-systems under dynamic conditions <i>Bernd W. Zastrau</i>	961
Modified component mode synthesis for aircraft structures <i>N. B. Roozen, A. O. H. van Berlo, A. de Kraker & D. H. van Campen</i>	969
Numerical calculation of traffic induced vibrations in roadway bridges <i>S. Drosner & G. Sedlacek</i>	977
Free vibration of structural systems with stochastic coefficients <i>Hazim S. Zibdeh & Kamal A. F. Moustafa</i>	985
An incremental linear complementarity approach for the earthquake response of cable-braced structures <i>A. A. Liolios & E. G. Galoussis</i>	991
Dynamic behaviour of an one-dimensional system with connected SDOF-systems <i>H. Kreuzinger</i>	997
Free vibration of guyed masts with additional masses <i>J. Angerman & T. Chmielewski</i>	1003
A modal synthesis method based on analytical eigensolutions of the substructures with condensation of modal degrees of freedom <i>H. Irretier & M. Sinapius</i>	1007
Dynamics of a multiple pendulum consisting of N open-chain rigid systems <i>Dimitrios E. Panayotounakos</i>	1015
Dynamic inelastic analysis of plane steel structures taking into account the effect of rate-dependent behavior <i>V. Brandt, N. Gebbeken & H. Rothert</i>	1023
Nonlinear steady state vibration of grids by harmonic balance method <i>R. Lewandowski</i>	1031
The choice of the optimum parameters of the dynamic systems, considering an example of the unique die forging hammers <i>B. V. Pleskatch</i>	1037
Dynamic failure of RC slabs – Analytical model and experimental verification <i>Z. Bittnar & P. Řeřicha</i>	1043
 11 Material and system properties	
An elastic-viscoplastic constitutive law for the description of finite deformations <i>O. T. Bruhns & F. Szepan</i>	1049
Experimental studies on the dynamic behavior of reinforced concrete beams with additional steel fibers <i>D. Heiland, S. Bausch & F. Stangenberg</i>	1055

Spectral and fatigue estimation of structures by permanent measuring <i>W. Baumgärtner</i>	1063
Micromechanics in IC-technology <i>A. Kunow-Baumhauer</i>	1069
Use of the dynamics of multibody systems for resolving safety-problems in steel constructions <i>D. Neuenhaus & G. Sedlacek</i>	1077
Static and dynamic thermoelastic analysis of laminated plates according to a new transverse shear and normal deformable theory <i>Kostas P. Soldatos & Isaac Elishakoff</i>	1083
The influence of different parameters on the vibrations of simply supported roadway plates in tunnels <i>R. Thiede</i>	1091
Underground traffic highly isolated <i>G. Weber</i>	1097
 12 Wind engineering	
Wind loads and the response of flexible structures: Models and simulations <i>G. Augusti & C. Borri</i>	1107
Dynamic wind effects on porous and flexible claddings of buildings <i>N. J. Cook</i>	1115
Dynamic response of cantilevered structures to wind turbulence <i>H.-J. Niemann</i>	1123
Fatigue caused by wind pressure buffeting on surface elements of high rise buildings <i>J. Wacker & E. J. Plate</i>	1133
Wind induced vibrations of guyed masts <i>G. Hirsch, G. Nonhoff & H. Volkmar</i>	1139
Response of long-span bridges under turbulent wind <i>Friedrich J. Wall</i>	1147
Calculation of wind-induced flutter-vibrations in standards <i>G.-E. Rosemeier</i>	1155
Measurement of wind load and response of a guyed mast <i>U. Peil & H. Nölle</i>	1161
Static and dynamic wind actions on structures – The basis and the background <i>H. Ruscheweyh</i>	1169
Dynamic wind effects on the waiting Ariane carrier rocket on launch pad <i>G. Grillaud & J. Gandemer</i>	1177
Nonlinear design to wind load using the L. R. C.-method <i>M. Kasperski</i>	1183

Gust loading factors for wind response of simple dynamic systems <i>G.Bartoli & P.Spinelli</i>	1191
Aspects on dynamic response of tension cable structures due to wind loads <i>G.D.Stefanou</i>	1199
List of participants	1207
Author index	1213