

Table of Contents

Organizers, Committees and Preface

1 Steel Structures: Analysis, Design and Construction

Parametric Analysis on Flexural Capacity of Flange-Plate Connections Considering Prying Force Y.Q. Wang, L. Zong and Y.J. Shi	3
Ultimate Bearing Capacity of Headed Studs in Tensile Concrete Slab W.Q. Hou, M.X. Ye and Y.Z. Zhang	11
Structural Configurations and Economic Performance Comparison of Multi-Storey and High-Rise Steel Three-Dimensional Garages Y.J. He, X.H. Zhou and J.C. Hu	16
Nonlinear Analysis and Design of a Guyed Mast: Comparison of Two Design Proposals W.L. Bao and Y. Zhang	20
Mechanical Performance of Large Cantilevered CFT Beam-Column Joint in Jiangyin Magic Cube Time Square F. Wang, Y.F. Luo, X.N. Guo, H. Xu and P. He	25
Research on Ultimate Bearing Capacity of Coupler Steel Tube Falsework with Initial Defect C.M. Hu, Z.S. Ge and W. Jing	32
Vibration Analysis and Evaluation of the Indoor Spiral Steel Stair B. Zhou, X.S. Ren and X.L. Lu	36
FEM Study on Flange Width-Thickness Ratio of Links in Eccentrically Braced Frames X.R. Chen, X.S. Lu, G. Li and J. Zhou	44
Buckling Strength of Tapered Cylindrical Shells under Partial Axial Compression: Effect of Circumferential Weld-Induced Imperfections Z. Wang and Y. Zhao	49
Stability Analysis of Floating-Roof Tanks under Differential Settlement Y. Zhao, X. Lei and X. Zhang	55
Effects of Rare Earths on Austenite Grain Growth Behavior in X80 Pipeline Steel C.J. Liu, H.L. Liu and M.F. Jiang	61
Research on Bearing Capacity of Steel Tube-Reinforced Concrete Column Subjected to Eccentric Compression Load Q.Q. Guo and J.T. Hu	66
Dynamic Performance Analysis for a Butterfly-Shaped Arch Bridge H.Y. Huang, X.R. Yuan and K.H. Cai	74
Constraint Analysis on the Steel Mid Tower of a Tri Tower Suspension Bridge Q. Zhao and C. Xu	79
Influence of Segmented Construction Methods on the Prestressed State of Truss String Structure Roof of Xinjiang Exhibition Center J. Zhang, X.C. Luo, J.G. Cai, J. Feng and X.J. Yang	85
Load-Carrying Capacity Estimation Methods for Cold-Formed Steel Lipped Channel Member Using Effective Width Method X.Y. Yao, Y.Q. Li and Z.Y. Shen	90
Finite Element Analysis of Behavior in Semi-Rigid Steel Frames Q. Wang, L. Wang, B. Jiang, H. Li and Q.F. Liu	102
Plastic Limit Analysis of Ice Coating Transmission Tower-Line Systems J.Q. Chen and W. Wang	106
Effects and Mechanisms of Niobium on the Fracture Toughness of Heavy Rail Steel C.J. Liu, Y.H. Huang, H.L. Liu and M.F. Jiang	110
Effects and Mechanisms of Chromium on Structural Transformation of Heavy Rail Steel Y.H. Huang, C.J. Liu and M.F. Jiang	117
Study on Influences of Thickness of Flange of U Rib on Mechanical Behaviors of Orthotropic Monolithic Steel Bridge Deck System R.D. Luo, M.X. Ye and Y.Z. Zhang	122

Experimental Study on SNCF of Welded CHS-CFSHS T-Joints under Axial Loading D.L. Yang, L.W. Tong and X.L. Zhao	127
Experimental Analysis on Strengthening Materials of Orthotropic Steel Bridge Decks Y.Q. Wang, Z.W. Hu, P. Pan, Y.S. Li and Y.J. Shi	132
Study on the Overall Stability of Single-Layer Spherical Latticed Shell Structures and Its Applications in Engineering F. Wang, Z.G. Zhang and M. Luo	137
Discussion on Several Problems of Designing Steel Tubular Joints F. Wang, M. Luo and Z.G. Zhang	143
Behavior of Four-Line High-Speed Railway Bridge with Two Main Trusses and K-Shaped Brace J. Liang and M.X. Ye	148
Experimental Study on Cast-Steel Joints for Nantong Sports Exhibition Center C.Q. Zhao, J. Ma and H.T. Ma	153
Fire Resistance of Crisscross Concrete-Filled Steel Tube Core Columns in the Different Axial Compression Y.F. Xu, Y. Fu, Y.B. Zhang and X. Zhao	157
Bearing Capacity Experiments and Design Suggestions on New Roof System of Profiled Steel Sheet X.G. Song, L. Chen and Q.L. Zhang	161
Seismic Response of Cable Net Facade R.Q. Feng, J.H. Ye, Y. Wu and S.Z. Shen	165
Effect of Openings on Elephant's Foot Buckling of Large Oil Tanks Z.P. Chen, S.J. Yan, C.L. Yu, G.W. Cao, L. Wang and L.C. Yang	169
Effects Analysis of Bending Stiffness of Cables on Stress Distribution and Curve Shape in Super-Long Single Suspension Cable Structures T.H. Jing and Q.N. Li	173
Test Research on Spatial Hysteretic Behavior of Circular Steel Pipe G.B. Nie, X.D. Zhi and F. Fan	177
Experimental Research on Eccentric Compressive Performance of Steel Tube-Reinforced Concrete Column Q.Q. Guo, Y.X. Zhao and K. Shang	184
Bearing Capacity Calculating of GFRP Tube Filled with Steel-Reinforced Concrete Composite Column Subjected to Eccentric Loading B.L. Chen, L.G. Wang and G.P. Qin	191
Application of Special Shaped Column Composed of Concrete-Filled Steel Tubes Z.H. Chen, T. Zhou and X.D. Wang	196
Full-Process Analysis of Pretensioning Construction of Dalian Gym H.J. Wang, F. Fan, H.L. Qian, X.D. Zhi and E.C. Zhu	200
Hysteretic Behavior of Semi-Rigid Composite Steel Frame with Cross-Stiffened Steel Plate Shear Walls H.C. Guo, J.P. Hao and F. Li	205
A Discussion on some Key Issues for Seismic Design of Concentrically Braced Frames According to Canadian and Chinese Codes W.Y. Zhang and C. Christopoulos	211
Design of the Digital Simulation System for Corrosion Damage on Marine Steel Structures S.L. Lv, C.L. Xu, Z.G. Wang, F. Zhao and X.Y. Tong	222
Damage Assessment of Single-Layer Cylindrical Latticed Shells Based on Degradation of Static Stability Capacity D.B. Yang, Y.G. Zhang, J.Z. Wu, H.T. Zhou and W.C. Liu	227
Study on the Vehicle-Bridge Coupling Vibration of Steel Arch Bridge Z.L. Li, P.Y. Zhou and Z.B. Yun	233
Shear Performance of Composite Steel Plate Shear Walls with Trilateral Constrained by Experimental Study Z. Guo and Y.S. Yuan	239
A Simplified Seismic Design Method on Steel Truss Coupling Beam Q. Hu, Z.H. Deng, Z.Z. Pang and H.Y. Lu	245

Research on the Unloading Process of Long-Span Steel Roof and the Design of Temporary Bracing Structure	251
J.H. Shao, Z.H. Wang and G.Y. Tao	
The Whole Process Simulation and Research on Temperature Field and Thermal Stress for Large Sluice Pier	259
H.B. Wang, S. Qiang, Z.Y. Zhu and Z.Q. Xie	
Sensitivity Analysis of Continuous Web Plate Joint of Steel Beam to CFST Column Based on Correlation	264
J.R. Pan, Z. Wang and C. Su	
Structural Design and Analysis of a Steel Vine Bridge	268
H.Y. Zhang, W. Zhou and B. Gao	
Numerical Investigation on Block Shear of Coped Beams with a Welded End Connection	274
W.W. Sun and F. Wei	
Precise Transfer Matrix Method for Plane-Buckling Analysis of Circular Arch	279
J.P. Sun and Q.N. Li	
Study on 45 Steel „Zero Time Holding” Quenching Technology	283
A.M. Li and M.J. Hu	
Study on Damping Properties of Fiber Reinforced Composite for Stayed Cable	288
Y.L. Du, J.Z. Li and B.C. Sun	
Analysis on Flow-Induced Vibration of Underwater Horizontal Gate	293
W. Wei and H. Ren	
Finite Element Analysis for Unstiffened Overlapped CHS KK-Joints Welded in Different Ways	299
X.L. Wang, W.W. Yang and L. Zou	
Analytic Methods of Main Cable Initial Curve Calculation in Variable Temperature Field	307
X. Ren	
Rational Calculation Model of Interlayer Separation of Complex Roof in Deep Coal Tunnel	313
D.Y. Wu, A.L. Wang and G.K. Wen	
The Passive Energy-Dissipation Study of Braced Steel Frame Structure	318
W.X. Luo, J.S. Lei and Y. Hu	
Analysis on the Chord Side Wall Failure of RHS T-Joints with Axial Compression Branch	323
H.F. Chang, J.W. Xia, H. Chang and F.J. Zhang	
Finite Element Analysis of a Single-Layer Reticulated Dome under Impact Loading	327
L. Zheng and Z.H. Chen	
A Specimen Design of Steel Anchor Box on Arch Pylon of a Cable-Supported Bridge	332
C.Y. Lu, C. Wu and Q.T. Su	
The Formation of Acicular Ferrite and Mechanical Properties Behaviors in a Low Welding Crack Susceptibility Steel	337
L.Y. Lan, C.L. Qiu and D.W. Zhao	
Research on Stress-Strain Curves of Steel under High Temperature	342
H.F. Tong and D.L. Dai	
Research on the Whole Stability of Axially Compression Member of Cold-Formed Thin-Walled Steel Sections in the Effect of Initial Imperfection	346
H.C. Liu and Y.J. Guo	
Flexural-Torsional Buckling of H-Beams with Corrugated Webs	351
Z. Zhang, G.Q. Li and F.F. Sun	
Anti-Seismic Energy Dissipation of Structures with Stress-Dependent Complex Damping with Consideration of Zero Amplitude Damping	358
H.D. Zhang and Y.F. Wang	
Using the Explicit Dynamic Method to Simulate Pile Dynamical Driving Process	366
J.B. Lv, H.L. Fu, H.Z. Li and Z. Liu	
Discussion and Method on Performance Based Seismic Design for Concrete-Filled Steel Tubular Structures	372
W.D. Wang, X.L. Xia and Y.L. Shi	
Energy-Saving System Analysis about the Exterior Building Enclosures of Wenyuan Building	376
Q. Feng	

Partially Double-Layered Dome Structure Linear and Nonlinear Buckling Analysis J.B. Lv, H.L. Fu, Y. Li and Z. Liu	387
Nonlinear Analysis of Eccentrically Loaded Concrete Filled Circular Steel Tubular Columns S. Xia and A.M. Qin	392
Test Study on the Rigidity Degradation and Energy Dissipation of High-Strength Reinforced Concrete Columns with Central Reinforcement S.S. Dong, Z.X. Lei and J.H. Zhao	398
Design Method of the Temporary Support Structure in Building Construction F.K. Zeng, C.M. Hu and X.C. Liu	406
Fatigue Life Estimation of Rib-to-Deck Joints in Orthotropic Steel Decks Y.L. Zhang, Y.S. Li and D.Y. Zhang	410
Experimental and Numerical Studies on Flexural Behavior of Casing Joint of Square Steel Tube M. Ding, Z.H. Hou, X.G. Jiang, Y.Z. He, G.K. Zhang and J.S. Ju	417
Research on Additional Internal Force and Deformation of the Portal Frame Construction Caused by Surface Deformation J.W. Xia, L.Q. Bu, Z.C. Hou and X.W. Liu	421
Stability Analysis of Nantong Sports and Exhibition Center Based on Measured Geometrical Imperfections C.Q. Zhao, J. Ma and D.L. Li	426
Experimental Study for Single-Angle Beam-Column Members Attached by one Leg X.L. Cao, J.P. Hao and C.L. Fan	433
Influence Analysis of Joint's Stiffness on Spatial Reticulated Shell X. Wang and F. Wang	439
Seismic Performance Spectra W.F. Liu and X.P. Fu	443
Determination of Critical Distortional Buckling Load for Thin-Walled C Steel Section C.S. Bao, X.B. Han and W. Wang	454
The Research on the Stress Concentration Factor of T-Joints Subjected to Axial Load J. Zhang, S.Y. Qu, G.D. Zhang and H. Liu	460
Scale Model Test Research on Cable Supported Barrel Vault Structure W.T. Qiao and Z.H. Chen	465
Application of Grouting Technology W. Yi, Y.H. Wang and R. Zhou	471
An Experimental Study on Double-Tube Buckling Restrained Braces with Contact Rings Z.Z. Yin, X.L. Wang and X.D. Li	475
Static and Buckling Behavior of a Beam with Changeable Boundaries Y.F. Luo, R. Yu and W. Yang	481
The Development and Researches of Steel Bridge Towers in China Q. Wang, C.S. Wang, X.X. Wang and Y. Xu	488
Bending Behavior of Hybrid High Performance Steel Beams C.S. Wang, L. Duan, M. Wei, L.X. Liu and J.Y. Hu	492
Design and Construction on the Roof Systems of Guangzhou South Railway Station Y. Liu, P. Sheng and W. Zhen	496
Analysis of the Structure Style Selection for Ocean Engineering Floating Structure W.B. Liu, S.L. Xi, H.S. Cheng and Y.X. Gu	501
Distortional Buckling of Cold-Formed Thin-Walled Channel Beams in Combined Compression and Minor Axis Bending H.G. Luo, Y.J. Guo and Y. Xu	507
Study on Mechanical Properties of the Long Span Cable-Stayed Bridge with Three Main Trusses and Three Cable Planes P.F. Zheng, G.L. Dai and D.P. Li	511
The Experimental Study on the Effect of Expansive Agent on Mechanical Properties of CFST Column with the Creep H.Y. Wang and X.X. Zha	520

Study on Preparation and Performance of Radiation Shielding Aggregate Made from Sludge with High Content of Barium	
X.L. Huang, H. Sun, Q.J. Ding and J.Y. Han	524
Static Analysis of Friction Contact Effect on Valley Cable Force	
Y. Zhang, Y.G. Zhang and Y. Xiang	531
The Research on the Dynamic Response of Arched Corrugated Metal Roof Structure with Ring Hoops	
D.S. Zhang and Y.Y. Li	539
Simulation Method on Progressive Collapse of Shell Model under Severe Earthquake	
H.T. Zhou, Y.G. Zhang, D.B. Yang and J.Z. Wu	544
Design Capacity of T-Strut Subject to Compressive Force	
X.L. Xiong, L.B. Jin and H. Wang	550
Design and Stability Analysis for an Arch-Shell Hybrid Structure, Singapore Cool Dry Conservatory	
Y. Bai, Y.Q. Wang and Y.J. Shi	557
Parametric Analysis on Seismic Behavior of Connections to Concrete-Filled Square Steel Tubular Columns with Three Edges Welded Interior Diaphragm	
Y.M. Xiao and T. Zhang	562
Resisting Seismic Behavior Study of an Adding Cover-Plate Protocol Used For D-Type Eccentrically Braced Steel Frames	
X.Z. Pan, J.P. Hao and J. Gao	567
A Method for Deformation Analysis of Bar-Reinforced Concrete Filled Steel Tubular Columns under Axial Compression	
J.S. Han and S.P. Cong	576
Wind-Induced Vibrating Comfort Analysis of Long Span Sightseeing Bridge of Shenzhen Wan Sports Center	
X.Y. Fu, Z.Y. Huang and X.C. Chen	582
Structural Behaviour of Blind Bolted Connection to Concrete-Filled Steel Tubular Columns	
J.F. Wang, X.Y. Chen and L.H. Han	591
Research on Behaviors of Steel Fiber Reinforced Concrete Filled Steel Tube Columns under Axial Load	
Y.Y. Lu, S. Li and J. Chen	596
The Design Review and Optimization of the Special-Shaped Steel Frame Structure	
K.D. Tang, J. Fu, J. Dai, P. Zhang and R.F. Yu	600
Tests on Strength of Coped Beams with Web Stiffening	
M.C.H. Yam, H.W. Ma and K.F. Chung	605
Push-Out Test on Bond Property of Micro-Expansive Concrete-Filled Steel Tube Columns	
K.C. Xu, M.C. Chen and F. Yuan	610
Finite Element Study on Seismic Performance of Inclined Joint of Cold- Formed Steel with Plate	
M. Chen and Y. Sun	615
Study on Mechanical Behavior of Concrete-Filled Square Tubular Column and Bolt-Weld Steel Beam Joints with Reduced Beam Section	
S.F. Nie, T.H. Zhou, X.B. Liu and X.M. Wang	620
Researching Status and Prospect of Lightweight Aggregates Obtained from Solid Wastes in China	
S.X. Liu, L.L. Shen and F.S. Niu	624
Analysis of Semi-Rigid Joint Frame with Moment-Rotation and Shearing-Deformation Relationships	
S.J. Duan and Y.Q. Zhang	629
Study on Stability Round Stronger Axis of the Column with Composite Section of Double Limbs under Axial Compression	
D.F. Wang, Y.Q. Wang, Y.J. Shi and B. Fang	633
Buckling Analysis of Two-Span Continuous Beams with Lateral Elastic Brace under Uniform Load	
W.F. Zhang, H.Y. Sui, Z. Wang and J. Ji	641
Study on Structural Rigidity of Large Span Three-Tower Cable-Stayed Bridge on High-Speed Railway	
L.X. Yi, Y.Z. Zhang and D. Zhou	646

Experimental Study on Mechanical Behavior of Cold-Formed Steel Three Limbs Built-up Section Members	
T.H. Zhou, S.F. Nie, X.B. Liu and G.Y. Li	651
Study on the Strategy of Elastic Modulus Adjustment of the Elastic Modulus Reduction Method for Limit Analysis of Structures Containing Flaws	
W. Zhang, L.W. Liu and L.F. Yang	655
The Numerical Calculation and Analysis of Burner Zone Membrane Water-Wall Temperature Field of a 600MW Supercritical Boiler under Various Operating Conditions	
C.Y. Li and W.P. Yan	664
Experimental and Finite Element Analysis on the Ultimate Bearing Capacity of Hollow Spherical Joints with Ribbed Stiffener	
J.T. Yu, K.Q. Yu and B. Tang	670
Analysis on the Mechanical Properties of Connections on Cold-Formed Square Steel Column and Beam	
Y. Yao and Y.P. Chu	676
Hysteretic Performance Analysis of Double-Tube Buckling Restrained Braces with Contact-Ring	
Z.Z. Yin and X.L. Wang	681
Research on Hysteretic Behavior of Angle Beam-Column Connections	
F.X. Li	686
Numerical Simulation Analysis on Seismic Behavior of Cold-Formed Beam-to-Column Connections	
Y.P. Chu and Y. Yao	692
Analysis of Influence on Mechanical Behavior of Jiubao Bridge Caused by Construction Process	
G.T. Yang, Q.T. Su and C. Wu	697
Mechanical Properties of a One-Way Beam String Structure with the Cooperation of the Supporting Structure	
Y.J. Nie and T.Y. Li	701
Hoisting Dynamics Analysis of Suspended Access Equipment	
X.J. Zheng, Z. Lu, Z.Y. Xie and Y. Hong	708
Preliminary Study on Post-Fire Behavior of Composite Frame with CFST Columns and Composite Beam	
P.P. Zhang, W.D. Wang and J.X. Wang	713
The Mechanical Behavior Study on Reduced Beam Section and Widened Beam Section Connections of Steel Frames	
Y. Wang, X.L. Liu and Y.S. Yu	717
Mechanical Model Study of a Bolted Endplate Minor Axis Joint	
Z.Y. Wang and Q.Y. Wang	726
Research on Application of BRBs in Steel Frame Structures	
X.R. Chen, L. Zhao and X.S. Lu	730
Test of Expansive Soil Roadbed Improving with Fiber Materials and Numerical Simulation Analysis	
X.G. Wang, B. Hu, Y.L. Liu and H.M. Tang	734
Research on Analysis Method and Distributing Principle of the Optimal Prestress in Sunflower-Patterned Cable Dome	
H.Q. Fang, C.T. Zhou and F. Yang	740
Reliability Analysis of H-Beam Transfer Truss Under Construction Loads	
Z.F. Chen and G.F. Liu	745
Experimental Study of Post-Fire Bearing Capacity of the Circular Steel Tubes with Different Fire-Resistant Coating	
Y. Ji, X.T. Wang, M. Zhou and W.Z. Wang	749
Influence of Restraining Stiffness on Mechanical Properties of Suspen-Dome	
J.M. Guo, S.L. Dong, X.F. Yuan and Y.L. Hou	754
A Second-Order Inelastic Analytical Method on Semirigid Connections Steel Frame	
J. Liu, X.Y. Huang, J.P. Hao, G.G. Zhou and D.F. Peng	760
Shrinkage and Cracking of Cement Composites Containing Internal Curing Stuff	
X.Y. Li, Y.D. Zhao and X.W. Ma	766

Three TMCS Hydrophobic Modification Methods of New Building Insulation Material SiO₂ Aerogels	
W.Z. Zheng, W.G. Ding, B.J. Ouyang, H.J. Chen and Z.Y. Chi	770
Experimental Study on Hysteretic Behavior for Plate-Reinforced Connections	
Y. Wang, S. Feng and X. Gao	778
Research on Fire Resistance Performance of Pre-Stressed Suspended Steel Reticulated Shell	
F.B. Yu, X.T. Wang, M. Zhou and W.Z. Wang	790
Effects of Titanium Microalloying on Steel Feeding and Contraction	
H.T. Wang, J.W. Tan, Z. Chu and C.Y. Sheng	795
Numerical Analysis of Pre-Stressed Steel Trusses Subjected to Fire Load	
X.T. Wang, M. Zhou and W.Z. Wang	799
Motion Analysis of Kinematically Indeterminate Structure Using Inextensional Mechanism: A Unified Approach	
J.Y. Lu and N. Li	804
Second-Order Effect of Staggered Truss and Simplified Formula	
L.F. Lu and L. Lin	808
Stress Analysis of Steel Deck Pavement of Box Girder Bridge under Vehicle Wheel Loads	
L. Xu and Y.P. Wu	812
Parameter Analysis of Compressive Web Members in Plane Tubular Truss with Simple Joints	
X.T. Peng, Q. Zhang and X.X. He	817
Sensitivity Analysis of Manufacture Errors for Cable Dome	
J.H. Zhang, Z.Q. Wang and Y.G. Zhang	822
Research on the Stability of Erecting of Pre-Cast Segmental Box Girders with SPZ1300/48 Gantry	
Z.X. Sun, S.T. Chen and H.W. Xu	828
Finite Element Analysis on Joint of Ultra-High Steel Columns and Steel Core Barrel Outrigger Truss	
L. Dong, W.N. Sui and G.C. Li	834
Corrosion Condition Research and Bearing Capacity Analysis of a Space Truss Base on Corrosive Environments	
X. Yan, T.Y. Li and N. Yang	838
Parameteric Study of Castellated Beam	
P.D. Pachpor, L.M. Gupta, N.V. Deshpande and K. Bedi	842
Calculation and Analysis of the Deflections of U-Section Steel-Encased Concrete Composite Beams	
X.J. Zhou, T. Zhang and Y.Z. Zhang	846
Static Strength of Concrete-Filled Circle Tubular (CFCT) T-Joints under Axial Loading	
S.Z. Song and Y.B. Shao	854
Construction Elements' Research of Steel Box Girder Based on the 6 σ Quality Control Method	
Y.S. Zhang, Y.S. Yao, Z. Zhao and N. Yao	858
Numerical Analysis of Prestressed Steel Box Beams	
Y.M. Jia and D.W. Liang	862

2 Concrete Structures: Analysis, Design and Construction

Property Research of Carbon Fiber Reinforced High Performance Concrete Containing Limestone Powder	
H.F. Li, Y.W. Yun, I.Y. Jang and S.K. Kim	869
Unity Equation of Torsional Capacity for RC Members Subjected to Axial Compression, Bend, Shear and Torque	
J.J. Men, Q.X. Shi and Q.W. Wang	874
Cracking Mechanism of Long Concrete Bedding Cushion and Prevention Method	
Z.Y. Zhu, S. Qiang, M.Z. Liu and H.B. Wang	880
Study on Interface Slips in Concrete Filled Square Steel Tubular Column	
B. Liang, F.S. Meng and R. Mao	888

A Rapid Seismic Evaluation Method of Masonry Buildings Based on Earthquake Damage Q.W. Su and S.C. Zhao	893
Stress-Chemistry Mechanism of Mortars Made with Steel Slag Sand Y.X. Lun, S.S. Liu, M.K. Zhou and X.F. Liu	899
Design of Simple-Supported Reactive Powder Concrete Railway Bridge with Span of 32m Z.G. Yan, W.Y. Ji and M.Z. An	904
Experimental and Numerical Study on Mode I-II Crack Propagation for Small Size Specimens of Concrete W. Dong, H.N. He and Z.M. Wu	908
The Elastic-Plasticity Analysis on Cross-Section Short-Limb Shear Wall Q. Zhang, C.C. Tao, C.B. Wei, J. Zhuang, P. Tan and Y.H. Liang	913
Experimental Study on Bearing Properties of Self-Compacting Prestressed Concrete Beams W. Liu and Z.F. Chen	918
Deflection Analysis of Externally Prestressed Concrete Beam Based on Damage Mechanics H.X. Xiong, Y.Z. Sima and Y.T. Zhang	928
Design Principle of Crack Control of Large Multi-Story Frame Structure and its Application C.H. Ding and J.W. Gu	933
The Primary Exploring of Seismic Property of Different Type Structure House S.Q. Cao and X.F. Xin	937
Study on Concrete Filled Square Steel Tube under Lateral Impact Loading L. Zheng and Z.H. Chen	941
Experiment and Analysis of Flexural Strength for Shrinkage-Compensating Steel Fiber Reinforced Shotcrete W. Huang, Q.Y. Ma and P.B. Cui	947
Study on Stay-in-Place Cement Formwork and the Application X.R. Song, P.G. Liu, D.F. Zhao, Y.T. Qu and X.Y. Zhang	952
Ultrasonic Propagation Characteristics and Damage Evolution of Recycled Concrete under Dynamic Loading X.W. Luo and H.L. Yao	956
Erection of Pearl Bridge by Bear Angle Vertical Swivel Method Z.H. Guo and Z. Zhang	961
Crack Controlling Research of Concrete Foundation for Large Equipment in Winter D.X. Qian	968
Experimental Study of Shear Behavior of High-Strength Concrete Beams with High-Strength Stirrups Q.X. Shi, Y. Tian and W. Hou	972
Experimental Investigation on Effective Bond Length of Flexurally CFRP-Strengthened RC Beams Failed by Intermediate Crack Debonding G.B. Li, A.H. Zhang and W.L. Jin	977
Numerical Simulation of a RC Frame Shaking Table Test Model Based on CANNY L. He and X.G. Ye	981
The Application of Grid-Frame Structures with Specially Shaped Columns in Energy-Saving House Using Phosphorus Gypsum L. Li, K.J. Ma, H.G. Zhang and Y.Q. Lu	987
Prediction of Diagonal Crack Widths of High-Strength Reinforced Concrete Beam by Artificial Neural Network J. Yao, L. Cao and J.F. Huang	992
Test and Finite Element Analysis of Concrete Continuous Beams Strengthened with CFRP Sheets D.H. Cheng, Y.M. Yi and T.F. Wang	998
Uniaxial Stress-Strain Model for Concrete Confined by Rectangular Steel Tubes Y.L. Long and J. Cai	1005
Calculation Analysis on Cracking Load of New Type Composite Wall W. Huang, C.H. Zhang, Q.F. Yao, G.X. Chen and H.Z. Wu	1012
Study on the Durability of Concrete Structure of Aviation Oil Wharf of Shenzhen Airport W.L. Wang, J.H. Zhu and F. Xing	1019

Axial Compression Ratio Limits of HSC Columns Confined with High-Strength Stirrups K. Yang, Q.X. Shi, H. Meng and J.J. Men	1024
Finite Element Analysis of Axially Loaded Confined Concrete Columns H. Meng, K. Yang, Q.X. Shi and J.J. Men	1029
Compressive Test on the Discontinuous Concrete Filled Steel Tubular Column-RC Beam Specimens after Cyclic Reversed Loading Q.J. Chen, J. Cai, X.Q. Zhao, P. Yang and C. Yang	1033
Progressive Failure Research on Foundation Surface of Concrete Gravity Dam C. Jia, F. Gao and Y. Li	1038
Transverse Shearing Strain Energy Calculation of Single Cell Box Girder J.J. Zhao and D.M. Wei	1044
The Intersection Method: A New Approach on the Concrete Aggregate Model J. Liang and Z.K. Lou	1053
Experimental Study on Influence on Structural Mechanical Behavior Caused by Steel Bar Corrosion of Hollow Slab Hinge Joints L.Y. Peng, J. Wei and X. Ban	1058
Displacement Based Seismic Performance Evaluation of Reinforcement Concrete Structures Q.X. Shi, Q.W. Wang and K. Yang	1063
Seismic Behavior Analysis on Reinforced Concrete Core Walls Based on Fiber Model W. Hou, Q.X. Shi and Z.L. Ma	1068
Seismic Response of Superposed Wall Panel with Different Edge Components X. Chong, X.G. Ye, D.C. Wang and X. Lian	1074
Analysis of the RC Slab under Gas Explosion Load Y.L. Han and L.Z. Chen	1080
Experimental Research on Grading of Fine Aggregate in Frame Concrete Z.S. Wang, L.J. Wang and H.L. Su	1085
Experimental Study on the Seismic Behavior of Concrete Composite Bearing Walls M. Xu, Z.F. Chen and W.J. Zhang	1090
Study on Rutting of Asphalt Pavement W. Yi, Y.H. Wang and R. Zhou	1096
Research on Seismic Performance Objectives of High-Rise Diagrid Tube Structures J. Teng, W.L. Guo, B.S. Rong, Z.H. Li and Z.J. Dong	1100
Study on the Application of Cooling Pipe in Thin-Walled Concrete Structure Z.H. Wang, G.X. Zhang, Y. Liu and Y.Z. Liu	1107
Elastic-Plastic Analysis of the Reinforced Beam J.L. Wang	1111
Admixtures in Concrete Crack Control and Construction Technology Optimization R.G. Yu and X.H. Wang	1115
Finite Element Analysis of Vibrating Frequency for Skew Slab Bridge Based on Finite Strip Thought M.L. Yang, G.Y. Xia and J.R. Zhang	1121
Experiment Research on Performance of Low-Temperature Crack Resistance of Reinforced Asphalt Mixtures Y.X. Zhong, X.L. Wang and M.J. Liao	1128
Performance Index Limits of Medium-Height RC Shear Wall Components X.C. Lao and X.L. Han	1134
Prediction Methods for Ultimate Strengths in GFRP Reinforced Concrete Bridge Deck Slabs Y. Zheng and Y.F. Pan	1139
Mechanical Behavior Experiment Research on the Temporary Support Structure in Building Construction F.K. Zeng and X.B. Liu	1143
Field Damage Inspection and Static Load Test Analysis of Jiamusi Highway Prestressed Concrete Bridge in China A.F. Naser and Z.L. Wang	1147
A New Approach for Bearing Capacity of SRC Columns with Bond Failure K. Wu, J.Y. Xue, P.Z. Cao, H.T. Zhao and J.G. Yue	1157

The Effect of Fly Ash on Calcium Leaching Properties of Cement Pastes in Ammonium Chloride Solution	
H. Yang, L.H. Jiang and Y. Zhang	1162
Constitutive Model for Concrete under Multiaxial Loading Conditions	
L. Sun, W.M. Huang and H. Purnawali	1171
Discussion on Drift Limit of Fully Operational Performance Level for RC Structures	
Z.X. Guo, Q.X. Huang and Y. Liu	1175
Numerical Analysis of Reasonable Hinge Joints Size of Reinforced Concrete Hinged Plates	
X.X. Tang, Y. Xu, C.J. Zou and F. Chen	1180
Experimental Study of Ultimate Bearing Capacity of Hinged Plates with Different Configuration Hinge Joints	
X.X. Tang, Y. Xu, Z. Xu and L.L. Li	1186
The Experimental Study of Early-Age Strength and Elastic Modulus of Concrete	
D.X. Zhang and W.J. Yang	1192
Study on Effects of Soil-Structure Interaction to Earthquake Resistance of Bridge	
Y.Y. Fan and Z.Q. Li	1198
The Properties of Oxidated Carbon Fibers Reinforced Cement	
X.F. Xu and Y.Y. Hu	1203
Effects Analysis of Web Cracks on Long-Term Deformation of Large Span Pre-Stressed Concrete Continuous Box Girder Bridge	
F. Shao, D.R. Pan, F. Li and Y.W. Liu	1207
Study of Shear Capacity in Brazilian Prestressed Hollow Core Slabs	
B. Catoia, M.D.A. Ferreira and L.M. Pinheiro	1213
A Numerical Method for Penetration into Concrete Target Using SPH-Lagrange Coupling Method	
X.C. Huang, Y.X. Yan, W.Z. Zhong, Y.Z. Chen and J.S. Zhu	1217
Nonlinear Seismic Response of Special-Shaped Column Frame Structures	
X.B. Han, C.S. Bao, Y. Gao and J.M. Bian	1222
Construction Site Measurement of High or Large-Span Form Strut System	
X.F. Cai, J.P. Zhuang and J.Z. Zhou	1226
Research on Temperature Stress of Large-Area Concrete Beam-Slab Structure	
Y.S. Zhang and Y.Y. Li	1232
The Mechanics Behavior Study of Four-Cell Concrete Rectangle Liquid-Storage Structure under the Thermal Environment	
X.S. Cheng and Z. Zhou	1236
Study on Mechanical Behavior of the Key Components of High-Level Transfer Frame-Shear Wall Structure with Viscous Dampers	
C.X. Wu, Y. Zhou, X.S. Deng and C.Y. Wu	1241
An Analytical Solution for the Elastic Moduli of Concrete with Interfacial Cracks	
X.Z. Zhou, J.J. Ding and J.J. Zheng	1247
Study on Bond Properties of BFRP Bars to Basalt Fiber Reinforced Concrete	
Q.W. Bi, Q.X. Wang and H. Wang	1251
Study on Rupture Angle of Bulk Solid in Large Diameter Silos	
C.B. Chen	1257
Damage Analysis Model for RC Members Based on Level of Material	
Z.H. Li, J. Teng and X.F. He	1262
Measuring and Analysis of Local Stress under Anchorage of Continuous Rigid Frame Bridge	
W.F. Wang, G.Q. Zheng, Z.L. Zhang and X. Song	1268
Analysis on Effectiveness of Landslide Control Based on Internal Force Monitoring of Anti-Slide Piles	
Q.L. Deng and D.P. Zhu	1274
Seismic Performance Evaluation of a High-Rise Building with Lapping Transfer Columns by Shaking Table Tests	
B. Wang, H.J. Jiang, J.B. Li, W.S. Lu and X.L. Lu	1281
An Analytical Solution for Joint of Prestressed and Precast Concrete Segmental Lining	
F.J. Liu, H.H. Zhu and N. Yu	1286

Study on Crack Mechanism for Concrete Bedding Cushion on Rock M.Z. Liu, S. Qiang and Z.Y. Zhu	1291
Simplified Calculation of Temperature Stress of Cast Plate in Frame Structure D.Z. Liang and Y.X. Song	1296
A Study on Parameters Affect Seismic Behavior of Reinforced Concrete Specially Shaped Columns P. Yang and J. Tang	1300
Experiment Study on Concrete Block Model Shaft Lining Used in Freezing Shaft H.L. Jiang and R.H. Liu	1307
FEM Analysis in Thermal Stresses of Basement Wall and Floor D.Z. Liang and Y. Liu	1312
Experimental Study on Inner Reinforced Concrete-Block Composite Shaft Lining H.L. Jiang and R.H. Liu	1316
Structural Behavior of RC Cylinders Confined with High Strength Transverse Reinforcement S.A. Cha, C.H. Moon, S.W. Kim, K.H. Kim and J.Y. Lee	1321
Experimental and Numerical Simulation Study on the Shear Stress for the Interfaces of Anchorage Type Structures Z.X. Zha, W. Peng and X.L. Liu	1325
A Stress Analytical Solution of Steel Reinforced Concrete Transfer Beam B. Liang and M. Yang	1329
Experimental Equipment Research on Uniaxial Compression Stress-Strain Curve of Concrete H.B. Chen, Y.P. Su, Y.M. Zhang and L.N. Wang	1333
Experimental Study on Shear Behavior of Prestressed Concrete Deep Beams with Draped Tendons G.L. Wang and S.P. Meng	1339
Mechanical Behavior of the Slab on Prestressing Tendons Concentrated Arranged along the Columns R. Yao, H.H. Liang and P.H. Zhu	1343
Ansys Analysis of Post-Tensioned Unbonded Prestressed Concrete Board with Open-Hole L.Z. Jin, Q. Fu, X. Cao, N. Deng, Y.H. Chen, M. Chen and X.M. Wan	1349
Mechanical Behavior Analysis of the Unbonded Prestressed Concrete Slabs with Openings Strengthened by Different Methods X. Cao, L.Z. Jin, Q. Fu, H.M. Zhou, Y.Q. Liu and L.J. Lan	1354
Numerical Simulation for Failure Modes of Reinforced Concrete Beams under Blast Loading X.H. Zhang, Y.Y. Wu and J. Wang	1359
Analysis on Shearing Deformation of Sectional Joints Affecting Deflection of Cantilever Constructed Box Girder R.X. Wang, H.J. Li and K.X. Jin	1364
Investigating Vertical Load Distribution and Shoring Systems of Reinforced Concrete Buildings during Construction S.P. Cong, J.S. Han and S.T. Liang	1369
Effect of Specimen Shape and Size on Compressive Strength of Concrete Y. Che, S.L. Ban, J.Y. Cui, G. Chen and Y.P. Song	1375
Research on Complex Shear Wall Bending Design X.Y. Fu and J.X. Qu	1380
Beam-Shell Compound Finite Strip for the Elastic Stability Analysis of Multi-Trough Rectangle Aqueduct W. Xu, L. Huang and B. Wang	1385
Models of Aqueducts with Different Height-Width Ratio on Rigid Buttress F. Leng and D.W. Fu	1391
Calculation and Analysis on Out-Plane Force of Hollow-Shearwall in Large Space Residence L. Cao and W. Weng	1396
Performance of Rubberized High Strength Concrete after Fire F. Liu, G.X. Chen and L.J. Li	1403

Measurement of the Internal Relative Humidity Distribution in Concrete J.K. Zhou, X.D. Chen, J. Zhang and X.W. Kan	1409
Study on Improving Overall Calculation Method of Mix Design Method for Fly Ash HPC W. Shen, F.H. Li and C.J. Lu	1414
Physical Filling Effects of Limestone Powders with Different Particle Size Y.L. Wang, W.D. Wang and X.M. Guan	1419
Nonlinear Static Analysis of RC Shear Wall Structure Based on Opensees Z.H. Pan, A.Q. Li and Y.G. Sun	1425
Experimental Study on the Stress Increment of Prestressed Tendons of Retard-Bonded Prestressed Concrete Continuous Beams Q. Fu, X. Cao, L.Z. Jin, W.X. Zhu, H.X. Yang and Z.B. Shu	1431
Effect of Pier Vertical Deformations on Deflections of Main Girders for High Pier and Long-Span Continuous Rigid-Frame Bridges J.S. Du and H.B. Liu	1436
Bending of Thick Rectangular Plates with Different Boundaries under Concentrated Load Y.J. Chen, G. Li, Z.X. Zhang and B.L. Fu	1440
Fire Behaviors of Restrained RC Beams with Slab G.H. Tang and B. Wu	1445
Investigation on Flexural Behavior of Reinforced Concrete Beams Flexurally Strengthened by Different Methods G.B. Li, A.H. Zhang and W.L. Jin	1451
Investigation into Impact of Column Rectangularity on Shear Strength of No-Stirrup Rc Members in General Shear D. Ren and C.Y. Zhou	1456
Effect of Beam Depth and Longitudinal Reinforcement Ratio on Shear Strength of RC Beams L. Yu, Y. Che, X.F. Zheng, J.X. Gong and Y.P. Song	1460
Research on Mechanical Behaviours of Three-Tower Suspension Bridges from the Perspective of Influence Line P. Liang, X.N. Wu, W.H. Li and Y. Xu	1466
The Effect of the Varied Temperature and Humidity on Creep Deflection in Service Stage of Bridges R. Rao, J.Y. Fu and A.R. Liu	1474
Study on the Seismic Behavior of Hollow R.C Shear Wall Model Building with and without Seams G. Wang, X. Hu, Q.M. Wang and Y.T. Gao	1480
The Experimental Research of Carbon Fiber Confined Concrete Considering Strain Rate under Uniaxial Compression Y.M. Zhang, Y.P. Su and J.Y. Su	1485
Simulation of the Effect of Solar Radiation on Hardening and Hardened Concrete Wall D.H. Huang, S.X. Wu and H.T. Zhao	1489
Experimental and Nonlinear Finite Element Analysis on Seismic Behavior of SRC Column and Steel Beam Planar Frame F.G. Li, G.T. Zhao and F.Y. Li	1495
Parameter Sensitivity Analysis of Vertical Deflection for Long-Span Continuous Rigid-Frame Bridge H.B. Zheng, X.L. Yu, J.L. Hu and Q.S. Yan	1500
Numerical Analysis of Lining Temperature Field of Hydraulic Tunnel under the Highway X.Y. Jia and B.L. Lin	1505
Effect of Detailed Formations on the In-Plane Shear Capacity of Hairpin Connectors in Precast RC Floor Slabs R. Pang, S.T. Liang, X.J. Zhu and Y. Meng	1510
Long Term Deformation Control of Long-Span Pre-Stressed Concrete Continuous Rigid Frame Bridge with Ballastless Track J.A. Cao, M.X. Ye and W.Q. Hou	1515
Three Dimensional Simulation of Steel-Concrete Composite Beams with an Interface-Slip Model S.Q. He, P.F. Li and F. Shang	1520

A Study on the Use of Construction Wastes as Coarse Aggregates on High Performance Concrete	1525
C.M. Ho and W.T. Tsai	
Effect of Elevated Temperature on the Strength and Ultrasonic Pulse Velocity of Glass Fiber and Nano-Clay Concrete	1532
C.M. Ho and W.T. Tsai	
Research on Deformation Capacity Design Method of Steel High Performance Concrete Structural Walls	1540
L. Bai, T.H. Zhou and X.W. Liang	
Study on Mixture Proportion Optimization and Crack Resistance of Concrete of Three Gorges Dam	1547
K.C. Sun and Z.Y. Sun	
Non-Linear FEM Analysis of Steel Fiber Reinforced Concrete Shearwall	1551
J. Zhao, L.J. Wang and D.Y. Gao	
Effect of Curvature Radius and Transverse Distribution of Load on Shear Lag for Curved Box Girders	1555
C.F. Li and W.X. Du	
Study on the Numerical Modeling of the SRHPC Frame	1561
P.J. Hou, S.S. Zheng and L. Li	
Analysis on Flexural Behavior of Concrete Beams with CFRP-GFRP Bars	1565
J.Y. Cai, Y.T. He, Y.Y. Liu and J.L. Xiong	
Cyclic Tests and Simulations of Spatial RC Frame-Shear Wall Structures	1569
S.X. Huang and X.Y. Zhao	
Flexural Capacity Study on Square Tube Filled with Steel Reinforced Concrete Members	1574
T.F. Zhao, H.N. Li and J.H. Yu	
Pure Shear Capacity Analysis on Square Tube Filled with Steel Reinforced Concrete	1578
Y.W. Ou, T.F. Zhao and X.D. Zhen	
The Effects of the No-Load Factors on Static Response of the Gravity Dam	1582
Z.D. Qiu and D.M. Wei	
Study on the Influence Factors of Bearing Capacity of the Fiber Reinforced High Strength Concrete Three-Pile Caps	1586
J. Lei, D.Y. Gao and H. Fan	
Finite Element Analysis of Loading Characteristics of Long-Short Piles Composite Foundation with Cushion	1592
L.Y. Sun, Z.J. Han, X.S. Ge and X.H. Bai	
Research of Calculation Methods for Zero Block of Continuous Beam and Continuous Rigid Frame Bridges	1597
W.H. Li, X.L. Zhai and D.Y. Qi	
Effects of Steel Slag Powder on Performance of Concrete	1605
J.X. Zhang, S.X. Liu, F.S. Niu and Y.M. Nie	
Causes and Control Measures of Mass Concrete Crack of High-Rise Building Basement Foundation Slab	1609
H.H. Feng and X. Wang	
Numerical Solution of Section Stress about Steel-Concrete Composite Beams	1614
H.G. Cheng, Y.L. Yu and Y. Zhang	
Analysis Research of Frame-Supported Transfer Beam with Opening Using Finite Element	1620
J. Yao, Z. Li and M.J. Peng	
Fire Experimental Study of Four-Edge Fixed Reinforced Concrete Slab in Fire	1626
B. Wang, Y.L. Dong and L.T. Gao	
Finite Element Analysis on Twin Tower Building with Large Bases Subjected to Seismic Action	1638
S.G. Qian, Y. Li and J. Song	
Dynamic Mechanical Response Validation of Pavement Structural under Complex Stress State	1645
G.P. Qian, S. Li and L.J. Jiang	
Prodution of Concrete Aggregates with High Strength by Using the Wastes	1651
J.B. Wang and Z.H. Zhou	

Performance Deterioration of High Strength Concrete under Mixed Erosion and Freeze-Thaw Cycling J. Zhang, B. Diao, X.N. Zheng and Y.D. Li	1655
Influence of Environmental Conditions on Temperature Field of Concrete D.J. Shen, H. Luan, D.Q. Jia and L. Zhang	1661
Performance Comparison between High Strength Concrete and Ordinary Concrete under Mixed Erosion and Freeze-Thaw Cycling J. Zhang, B. Diao, Y.D. Li and X.N. Zheng	1667
The Study on Implified Calculation of Cracking Torque of Steel Reinforced Concrete Combined Force J.M. Liu, F. Zhou, J. Zheng and X.Y. Xing	1673
Experimental Study on Interface Shear Capacity of Reinforced Concrete W. Wang, X.Z. Su and Y. Zhao	1678
Nonlinear Stability Analysis of Qijiadu Long-Span Deck-Type CFST Arch Bridge L. Xu and Y.P. Wu	1685
Calculation of Internal Force of Axial Tension Member due to Temperature Variation Accounting for Cracking Y.M. Zhang, G.S. Bian and T. Fan	1692
The Clever Use of Neutron-Axis of the Girder in the Stress Measurement of the Large Span PC Cable Stayed Bridge Y.F. Xu	1696
Ultimate Load Analysis of RC Beam under Combined Action of Axial, Bending and Shear Loading B. Diao, Y.P. Zhang and Y.H. Ye	1702
Freeze-Thaw Deterioration Mechanism of Concrete in Different Multi-Aggressive Solution X.N. Zheng, B. Diao, J. Zhang and Y.D. Li	1708
Equivalent Ductility Damage Model for Seismic Response of RC Structures: Test and Verification G.M. Chang, G.H. Xing and B.Q. Liu	1714
Calculation of Incremental Force of External Steel in Simply Supported Externally Prestressed Beams D. Hu and Z.W. Yu	1719
Research on Transient Temperature of Concrete Surrounding Spiral Case and Temperature Effect on Gaps in a Hydropower Station X.Y. Xu, Z.Y. Ma and H.Z. Zhang	1724
Bilateral Shear Strength of Rectangular Frame Column with Different Stirrup on Two Principal Axis C.M. Dong, L. Jin and S. Jia	1728
The Application of Reinforced Concrete Composite Floor System of Superimposing Box and Net Beam to Zibo Athletes Apartment Z.F. Chen and G.F. Liu	1732
Verification of Adjustment Method of Design Seismic Shear Force of the Frame in RC Frame-Shear Wall Structure J. Han, Y.M. Li, W.X. Chen, W. Jiang and W. Zhao	1736
Stochastic Finite Element Analysis for Shrinkage and Creep of a Concrete Bridge Based on LHS Z.F. Lu and M.Y. Liu	1744
Influence of Reinforcement in Outer Frame Column on the Mechanical Behavior of Multi-Ribbed Frame Grid H.T. Liu, Q.F. Yao and X.L. Wang	1749
Development of the Stress-Strain Relationship for Crack Diffused Concrete Y.R. Li	1753
Research Situation on the Performance-Based Seismic Design Method for Reinforced Concrete Structure Y.L. Qi, X.L. Han, X.P. Peng, Y. Zhou and S.Y. Lin	1757
Experimental Study of Stress-Strain Curves of Lightweight Aggregate Concrete X. Liu and J.T. Kong	1762

Analysis on Causes about Concrete Slab Cracks of Residential Projects and Research on Control Measures	1768
L.Q. Zhang, Y.F. Xu and R.J. Li	
Analysis on the Causes and Control of Pre-Mixed Concrete Floor Cracks	1772
L.Q. Zhang, R.J. Li and Y.F. Xu	
Application of Polypropylene Fiber Concrete in Underground Engineering	1776
X.R. Shao and L.F. Zhu	
Dynamic Load-Displacement Behavior of Rc Shear Walls under Different Loading Rates: Tests and Simulations	1780
N. Xu, B. Xu, X. Zeng, Z. Jiang and J.M. Chen	
Study on Early Cracking Resistance of PC Box Girder Bridge	1786
W.C. Zhong, X.Y. Zhang, H. Zhou and C.S. Zheng	
Vibration Analysis of Reissner-Mindlin Plates Using Quadrilateral Heterosis Element	1793
Z.L. Ru, H.B. Zhao and C.R. Zhu	
Experimental Research and Abaqus Analyses of Eccentric-Loaded L-Shape CFT Columns with Binding Bars	1797
X.Z. Zheng and J. Cai	
Performance of Screen Grid Insulating Concrete Form Walls under Combined In-Plane Vertical and Lateral Loads	1803
M. Abdel-Mooty, M. Haroun, Y. El Maghraby, E. Fahmy and M. Abou Zeid	
Dynamic Load-Displacement Behavior Simulation of RC Columns Considering Strain Rate and Nonlinearity Effects	1811
Z. Jiang, B. Xu, X. Zeng and L. Tang	
Study of Strength Criterion for Dynamic Compression of Concrete under Biaxial Equal Proportion Loading	1819
G. Ping, P. Liu and T. Xu	
The Research and Application on Calculation Model of the Stagger-Jointed Assemble Lining Structure	1823
A.L. Jiang and Z. Yang	
Study on Temperature Distribution Characteristic of Asphalt Mixtures of Bridge Deck	1829
Q.L. You, N.X. Zheng and G.L. Shi	
Structural Assessment of a 40 Year Old R.C. Building	1833
K.A.D.I. Bsisu	
Numerical Simulation of Quasi-Brittle Fracture in Concrete Structures with Extended Finite Element Method	1837
H.C. Qu, X.Z. Xia and Z.Q. Xiong	
A Practical Calculation Method of $P-\Delta$ Effect in Frame Structure	1844
S.Z. Liu and X.Y. Guo	
An Industrialized Multi-Layer Precast Concrete Frame Building with Middle-Joint Beams and Columns	1849
Y. Xu and B.Q. Dong	
Prediction of Internal Stability for Geogrid-Reinforced Segmental Walls	1854
A. Kasa, Z. Chik and M.R. Taha	
Axial Strain of Reinforced Concrete Columns	1858
J.W. Park, S.A. Cha, J.E. Kang, M. Mansour and J.Y. Lee	
The Technology of Asphalt Pavement on Wei He Steel Bridge Deck	1862
X. Gui, X.S. Wang and B.Y. Li	
Design Thermal Gradients for Straddle Track Girders	1870
T. Zhang and H.F. Bai	
Stochastic Gaussian Optimized Inversion of Mechanical Parameters of Reinforced Concrete Single T-Shaped Beam	1874
J. Zhang, W.G. Lan and B. Yu	
Experimental Study on Seismic Behavior of Recycled Concrete Perforated Brick Masonry	1879
Z.G. Guo, W.M. Sun, J. Wang, J.L. Chen and Y.F. Xu	
Calculation of Ductility of Square CFT Stub Columns with Binding Bars Subjected to Eccentric Load	1883
G.Q. Su, J. Cai, X.Q. Zhao and C.H. Zhu	
Experimental Study on the Shear Failurelaw of Gate Slot	1891
J.H. Han, S.F. Wu and W.L. Liu	

3 Novel Hybrid Structural Systems

Behavior of CFT Column Connections with Vertical Plates X.L. Yang, H.L. Wang, Q.C. Ren and P. Dong	1897
Ultimate Load of Composite Beam Based on Effect for Cracks in the Brittle Material on Slip of Shear Connectors Q.X. Liu	1901
Experimental Study on Structural Performance of a Novel Integral Noise Barrier for Urban Rail Transit P. Gao, J.W. Zhang and Y.M. Tu	1905
Finite Element Analysis of Ultimate Load-Carrying Capacity of CFST-CSW Arches J. Gao and B.C. Chen	1910
Applicability Study on Method of Stability Analysis for Suspendome Structures K.R. Shi, Z.R. Jiang and S.T. Wang	1916
Influences of Sag-to-Span Ratio and Pre-Stress of Cable on the New Hybrid Structure Composed of Truss Strings and Shell Y.L. Shen, Z.G. Mu and Z. Fan	1924
Analysis in Seismic Behaviors of the Masonry-Concrete Shear Wall K. Li, G.P. Chen and L. Tang	1928
Numerical Analysis of Post-Tensioned Coupled Wall X.N. Cai, S.P. Meng, J.J. Chen and W.W. Sun	1935
Multi-Tower Effect Analysis of Long-Span Suspension Bridge X.Y. Zheng, Z.D. Feng and Y. Xu	1940
Stress Distribution Regularity Analysis of Ring Plate of Concrete Filled Steel Tube Connections with Exterior Diaphragms C.Y. Lee, L. Luo and Y.J. Guo	1945
Preparation and Characteristic of PSMA/EG Composite Materials G.X. Hou, H.N. Na and X.M. Sang	1951
Dynamic Plastoelastic Time-History Analysis on a Super High-Rise Building Structure of Anhui Y. Huang, X.Y. Song and F.B. Xu	1955
The Analysis for the Static Responses of the through Composite Truss Bridge with Simply Supportation Y.J. Chen and Q.Z. Luo	1965
Research on New Shear Connector in Steel-Concrete Composite Open-Web Plate Frame and Pseudo-Static Analysis of the Construction Y. Huang, X. Ren and W.G. Chen	1969
Wrinkling Analysis of Stiffness Equivalence in Membrane Structures R. Zhao and D.M. Wei	1976
Study on Flexural Behavior of the Steel-Full Depth Precast Concrete Panel Beams Y.M. Dai, C. Li and J.X. Ouyang	1980
Creep Stress Analysis of PC Composed Box Girder Bridge with Corrugated Steel Webs C.L. Shan and L. Yan	1987
Preparation and Properties of PS/PSMA/EG Composite Materials G.X. Hou, S.Y. Liu and X.M. Sang	1991
Finite Element Analysis of Mechanical Behavior of Light-Weight Mobile FRP Bridge X. Huang, Z.G. Mu and P. Feng	1995
Experimental Verification on Bearing Capacity of Concrete-Filled Steel Tube Short Columns Based on Unified Theory J. Ji, W.F. Zhang and H.Y. Sui	1999
Seismic Performance Research of High-Rise Diagrid Tube-Core Tube Structures J. Teng, W.L. Guo, B.S. Rong and Z.H. Li	2005
Study on Stud Shear Connectors Subjected to Single Cyclic Loading X.J. Li, Z.G. Mu, P.A. Li and J.B. Zhang	2013
Experimental Study on Neotype Anchor System in Tower of Cable-Stayed Bridge D.L. Tan, F.J. Qin and D. Jin	2017

Experimental Study on Seismic Performance of SRC-RC Transfer Columns and Extension Length of Shape Steel K. Wu, J.Y. Xue and H.T. Zhao	2023
Model Test on Joint Segment of Steel Truss and Composite Truss D.Y. Xue, Y.Q. Liu, Q. Wang and B. Ma	2027
Nonlinear Stability Bearing Capacity Analysis for Plate-Cone Reticulated Shell F. Wang and X. Wang	2033
Analysis of Long-Term Stress of Steel-Concrete Composite Beams M. Ding, J.S. Ju and X.G. Jiang	2037
Experimental Study on Seismic Behavior of Full-Scale New Steel Truss Coupling Beams Q. Lin, Z.H. Deng and G.X. Tang	2041
Research on Flexural Behaviors of Cementitious Composite Material Formwork without Being Removed Concrete Beams S.X. Zhou	2047
Experimental Research on Concrete-Filled GFRP Tubes and GFRP-Steel Composite Tubes under Axial Compressive Load X.L. Wang and X.X. Zha	2052
Research on Mechanical Behaviors of Composite Frame and Reinforced Concrete Core Hybrid Structures in High-Rise Buildings S.Y. Zhang, G.L. Bai and L.S. Zhao	2056
The Constitutive Relationship of Concrete Core in Circular Concrete-Filled Steel Tubular Columns L.L. Liu, Y.Q. Tu and Y.H. Ye	2063
Analysis of Structural Parameters of Cable-Stayed Suspension Bridges J. Qiu, R.L. Shen, H.G. Li and X. Zhang	2068
Analysis of Seismic Performance of Mega Steel Braced Frame-Composite Steel Plate Shear Wall Structure L. Chen, X. Liu, Y. Zhou and X. Hu	2077
Nonlinear Static Analysis of Staggered Truss Steel-Timber Combined Structure Q. Qu, X.Y. Zheng and X.T. Chen	2082
Finite Element Analysis on the Temperature Field within Steel Tube Reinforced Columns L. Xu and J.G. Sun	2089
A Robust Design of Suspenders in through and Half-Through Arch Bridges R.J. Jiang, Q.M. Wu, Y.Y. Chen, F. Cui and X.W. Yi	2094
Double-Superposition Assumption for Piezoelectric Laminate Beam Theory X.M. Yang	2101
Ultimate Bearing Capacity Research on the Steel Tube Composite Column Filled with Steel Reinforced Concrete S.S. Sun, J.H. Zhao, X.Y. Wei and H.B. Xiao	2106
Structure-Soil Interaction of Buried Corrugated Steel Arch Bridge M.X. Zhang, B.D. Liu, P.F. Li and Z.M. Feng	2112
Experimental Research on the Confinement Effect for the Composite Concrete-Filled Square Steel Tubular Short Columns B. Li and C.Y. Gao	2118
Nonlinear Finite Element Analysis of Beam String Structure Z.R. Jiang, M. Xu, W.N. Duan, K.R. Shi, J. Cai and S.T. Wang	2124
Influence of External Tendons on Dynamic Characteristics of Box Girder with Corrugated Steel Webs J.B. Chen, B.D. Liu and P.F. Li	2131
Experimental Research on PBL Shear Connector for Steel-Concrete Composite Structures L. Xiao, S.Z. Qiang and X. Xu	2137
Sliding Response of Free-Standing Cultural Relics under Earthquakes by Simulation Q. Zhou and W.M. Yan	2142
Vacuum Infusion Molding Process to Produce FRP Shell Used in an Innovative FRP-Concrete Composite Structure P. Zhang, H. Zhu, G. Wu, S.P. Meng and Z.S. Wu	2147
Aseismic Analysis on a Strengthened Chinese Ancient Building by Simulation Q. Zhou and W.M. Yan	2152

Study on Stability of a New Prestressed SINGLE-Layer Spherical Lattice Shell Z.X. Yin, L.M. Tian and Z. Gao	2157
Finite Element Analysis on Dynamic Behavior of Gangue Concrete-Filled Circular Steel Tube Beam G.C. Li, Q.F. Jiang, J. Bai and J. Jiang	2162
Research on Vibration Characteristics and Seismic Response of Shell of LNG Tank J. Ji, T. Yang, W.F. Zhang, L. Chang and H.Y. Sui	2167
Effect of Concrete-Filled in Chord Tubes on Mechanical Behavior of RHS Steel Tube Trusses J.P. Liu, Y.J. Liu and J. Yang	2171
Time-History Analysis of Seismic Response for the Concrete-Filled Steel Tubular Wind Turbine Tower Based on Finite Element Method Y. Wen and F. Zhou	2176
Interface Shear Force of Steel and GFRP Deck Composite Beam under the Effect of Temperature and Creep D.X. Wang, J.H. Huo and L.G. Wang	2181
Loading Capacity of Simply Supported Steel-Concrete Composite Slim Beams L. Yang, Y.Q. Wang and Y.J. Shi	2185
Experimental Research on Seismic Behavior for Lightweight Aggregate Concrete-Filled Steel Tubular Frame C.Y. Gao and B. Li	2194
Finite Element Analysis of Middle Long Columns of High-Strength Concrete Filled Square Steel Tube with Inner CFRP Circular Tube under Axial Load G.C. Li, C.Y. Di and S.J. Li	2199
Effect of Viscous Damper on Seismic Performance of Steel-Concrete Hybrid Structure for High-Rise Building D.J. Shen, S. Qiu, L. Song and C.B. Huang	2203
Dynamic Response Analysis on Steel-Concrete Composite Frame Based on ETABS Y.H. Wu, J.C. Mu, S.Q. Li and H.F. Xi	2209
Analysis of Mechanical Behaviors of a Single Pylon Cable-Stayed and Continuous Rigid-Frame Composite Bridge D.M. Feng, A.Q. Li, J.H. Li and G. Yang	2219
Numerical Method and Experimental Study on the Ultimate Load Carrying Capacity of Four Tube CFST Latticed Columns L.Z. Jiang, W.B. Zhou and J.J. Qi	2224
Experimental Study on Shear Behavior of Light Wall Composed of Oriented Structural Straw Board and Tennon-and-Mortise Connection Frame Q.F. Xie, H.B. Xiong and X.L. Lu	2234
Experimental Study on Residual Load Bearing Capacity of SRC Eccentric Columns after Exposure to Fire J.H. Li, Y.F. Tang and M.Z. Liu	2240
Behavior of Rigid Composite Joint under Combination of Bending Moment and Tensional Force L.H. Guo, S. Gao and S.M. Zhang	2247
Model Test Investigation on Rectangular Section Composite Micro-Pile Structure for Earth Slope Reinforcement X.L. Liu, D.D. Zhang and K. Liu	2256
Research and Application of Level Rotational Construction Technology of DWT Cable-Stayed Bridge S.J. Wang, X. Zhu and Z.D. Gao	2262
Experimental Study on Seismic Performance of RC Composite Core Walls with Steel Tube-Reinforced Concrete Columns and Concealed Steel Trusses under Eccentric Horizontal Loading H.Y. Dong, W.L. Cao and J.W. Zhang	2267
Experimental Study on Seismic Performance of Mid-Rise Composite Shear Walls with CFT Columns and Embedded Steel Plate J.W. Zhang, W.L. Cao, H.Y. Dong and G. Li	2274
Nonlinear Seismic Analysis and Structural Performance Evaluation of a Complex High-Rise Building Y. Chen	2285

4 Structural Optimization

Optimal Design of a Complex High-Rise Building Based on Cost-Effectiveness Criterion Y. Chen	2295
The Truss Structural Optimization Design Based on Improved Hybrid Genetic Algorithm F.G. Jiang and Z.Q. Wang	2304
Optimal Design Research of Shear Wall Structure for Board High-Rise Residential Building E.L. Wang, Z.A. Lu and L. Zhou	2309
Consolidation Settlement Analyses on a Composite Foundation System Combined with Walled and Columniform Soil Improvement W. Li, F. Gao, H. Huang, H. Yamamoto and K. Takeuchi	2318
Structural Design and Finite Element Analysis of Unfolding Process for All Composite Folding Wing of UAV P. Lv, S.L. Lv, G.J. Yang, Q.N. Zeng and X.Y. Tong	2328
Preparation of Exfoliated Graphite by Microwave Using Natural Graphite with Different Particle Sizes K. Yu	2333
Effects of Stable Cable on Ultimate Load-Carrying Capacity of Long-Span Composite Girder Cable-Stayed Bridge with Three Pylons L.F. Wang and M.Y. Liu	2337
Static and Dynamic Behaviours of Three-Tower Suspension Bridges and the Structure Selection of the Mid-Tower P. Liang, X.N. Wu and Y. Xu	2343
Synergistic Effect of MgO-Based Expansive Agent and Shrinkage Reducing Admixture on Compensating the Shrinkage of Cementitious Materials Z.B. Zhang, L.L. Xu and M.S. Tang	2350
Combined Shape and Topology Optimization of Free Form Shells L. Wang, Q.L. Zhang and B. Yang	2356
Optimal Design of Truss-Plate Structures Using Two Improved Random Optimization Algorithms G.Q. Zhong, L.J. Li and F. Liu	2361
Optimization Design of Beam Based on Genetic Algorithm S.L. Qiao and Z.J. Han	2365
Optimization on Closure Scheme of Multi-Span Prestressed Concrete Box-Girder Bridge M. Yuan and D.H. Yan	2369
Comparative Experimental Study on Flexural Property of Reinforced and Conventional PHC Pile J.W. Liu, Z.M. Zhang, R.H. Zhang and S.F. Wang	2376
Application of Genetic Algorithm in Optimum Design of Structure X.B. Liu, F.K. Zeng, F.Q. Li and J. Wang	2381
Prediction of Parameters Error in Method of Construction Control in Cable-Stayed Bridge C.S. Chen, D.H. Yan and D.F. Dong	2385
Dynamic Response Analysis and Optimal Design of a RC Slab to Blast Loads W.B. Sun	2390
Shape Optimization and Seismic Design of Concrete-Filled Square Tubular Column and Reduced Beam Section with Cut Web Y.L. Guo and X.Y. Yao	2397
Parallelizing a Modified Particle Swarm Optimizer (PSO) B. Yang and Q.L. Zhang	2404
Research of Optimization Design on Floating Floor Insulation J.X. Mao	2410
Multi-Target Optimization Design of Earthquake-Resistant Structure Taking Ductility and Cost into Account H.S. Zhao and H. Ji	2415
Optimization Design of Earthquake-Resistant Structure Taking Discrete Variables into Account H. Ji and H.S. Zhao	2420

Coefficient Distribution Method for Minimum Weight Design of Large-Span Determinate Trusses	
W.F. Du, Z.Y. Zhou, S.X. Wang and F.D. Yu	2424
Optimal Grillages by 3-Nodes Triangle Finite Element	
K.M. Zhou and X. Li	2431
Optimization of Structures Using Improved Genetic Algorithms for Discrete Variables	
Y. Tian, Q.X. Shi and C.Y. Zhu	2437
Design of Ocean Data Buoys Based on CFD	
Q.H. Song, X. Tang, Y.M. Lan and Y.C. Liang	2441
The Simulation and Analysis of Energy Saving with Compound Block Used Construction Waste	
G. Chen, D. Meng and Y.L. Fang	2445
Structural Optimization Design of Rear Axle Housing Excited by Dynamic Load	
Q.H. Meng, Y.L. Zhang and H.S. Yu	2449
Analysis on Integral Performance of Unit Glazing Curtain Wall Considering the Contribution of Glass Rigidity	
Y.T. Gao and X. Hu	2454

5 Monitoring and Control of Structures

A Novel Acoustic Emission Technique to Monitor Damage Evolution in Masonry Structures	
P. Antonaci, P.G. Bocca and D. Masera	2461
Damage-Relevant Evaluation in Appraising Dangerous Buildings	
T.H. Qian and S.L. Zhang	2465
An Effective Way to Validate Signal Arrival Time in AE Structural Monitoring	
J. Xu	2471
The Design and Application of Piezoelectric Friction Damper with Self-Powered and Sensing Control System	
N.X. Dai, P. Tan and F.L. Zhou	2477
Effect of Attribute Reduction on Rough-Probabilistic Neural Network for Structural Damage Detection	
S.F. Jiang and Z.Q. Wu	2482
Delamination Patch Detection in FRP Composite with 3×3 Coupler Based Mach-Zehnder Interferometer	
Y. Xu, B.Q. Dong and Y. Jiang	2488
The Influence of Crack on the Dynamic Characteristic and Acoustic Radiation Characteristic of Gear Plate	
R.P. Shao, Z.F. Xu and J. Ma	2493
Applications of Grey System Theory to Construction Control of Cable-Stayed Bridge	
F.W. Wu and C.F. Xue	2502
Study on Damage Performance of Oil Storage Tank in the Basis of Modal Test and FEA	
G.F. Du, C.X. Xu and S.P. Jia	2507
Damage Analysis of RC Beams Strengthened with CFRP Sheets by Acoustic Emission Technique	
D. Masera and P.G. Bocca	2511
Structural Damage Detection through Chaotic Interrogation and Attractor Analysis	
Q.H. Qiu, C. Xu and B. Wu	2515
The Research on the Structure Response of Underwater Blasting on 4-Story Masonry-Concrete Building	
Z.B. Huang, C.M. Lin, J.S. Huang, Y. Chen and F.B. Meng	2521
Assessing the Fracture and Damage Process in Recycled Aggregate Concrete under Compressive Loading by Acoustic Emission	
S.H. Ryu, Y.O. Lee, S.W. Kim and H.D. Yun	2528
The Modal Identification of Structure Using Distributed ERA and EFDD Methods	
Y. Lei and Z.L. Lai	2532
Damage Detection for Truss Structures Depending on Method of Change in Elemental Modal Strain	
Y.M. Li, G.F. Sun, B.Y. Yang, X.Y. Zhou and X.Y. Gao	2537

Trial Study on Methods of Damage Extent Identification Based on Wavelet Transform of Strain Signal J. Fan and H.P. Liu	2543
Using Acoustic Emission to Quantify Damage in High-Performance Fiber-Reinforced Cement Composites under Cyclically Compressive Loading S.H. Nam, Y.J. Song, S.W. Kim and H.D. Yun	2549
Monitoring for Large Cross-Section CFSTs of a Super High-Rise Building with Piezoceramic Actuators and Sensors Q. Huang, B. Xu, B. Li, G.B. Song and J. Teng	2553
Study on the Numerical Simulation of Massive Concrete Sidewall Hydration Heat under Negative Temperature Transient Boundary D.W. Li, J.H. Fan, H.M. Chen, J.H. Chen and R.H. Wang	2560
Experimental Study on Temperature Fields of Dumbbell-Shape Section of CFST Arch Rib and its Effects B. Yang, J.H. Huang, C.J. Lin, X.K. Wen and M.J. Liu	2564
Study on the Effect of Prestress to the Dynamic Characteristics of Truss String Structure Y.Z. Luo and R.F. Tong	2571
Damage Detection for Underground Arch Structure Considering Errors in Baseline Model F. Zheng, J.Y. Xu, Y. Chen and D.H. Zhao	2576
Acoustic Emission Monitoring and Fracture Process of Reinforced Concrete Beams Strengthened in Flexure with CFRP Y.O. Lee, H.D. Yun and S.Y. Seo	2581
Influence of the Tension Variety on Non-Linear Natural Frequency of an Inclined Cable Y.Q. Li, Y.L. Du and S.H. Liu	2585
Analysis and Testing of Dynamic Characteristics of Xinguang Bridge Y.F. Xu	2592
Detection of Concrete Spalling Using Changes in Modal Flexibility N. Hajjhasani and N. Bakhary	2598
A Two-Stage Kalman Estimation Approach for the Identification of Large Size Structural Parameters Y. Lei, D.T. Wu and Y.Q. Jiang	2603
Characteristics of Multi-Storied Brick-and-Concrete Buildings Response to Blasting Vibration of Tunnel Excavation H.L. Wang and T.W. Gao	2608
Influences of Tunnel Excavation Blasting Vibration on Surface High-Rise Building H.L. Wang and T.W. Gao	2613
The Feasibility Study on Adding Roof in Square City of the Ming Tomb B.G. Mu, Y. Wang and X.H. Yang	2618
Posture Adjustment and Control Algorithm for Integral Synchronous Lifting of Bridge Y.Q. Zhang, X.H. Tang, D.H. Chen and B.H. Ji	2625
A Two-Stage Kalman Estimation Approach to Identify Parameters of a Nonlinear Elastic Structure Y. Lei and Y.Q. Jiang	2632
Settlement Monitoring of Passenger Railway Tianjin to Qinhuangdao Y.L. He and R. Shi	2637
The Investigation and Analysis of the Use of Rail Fastening in Shanghai R. Shi and Y.L. He	2641
Experimental Research on Influence of Temperature on PZT-Based Health Monitoring for Smart Aggregates J. Yu and H.P. Zhu	2647
Application of FBG Sensors in Shaking Table Test of Frame-Shear Wall Structure Model L. Sun, H.X. Zhang, D.Z. Liang and Z. Li	2653
Characteristics and Application of BOTDR in Distributed Detection of Pile Foundation C.D. Piao, B. Shi and L. Gao	2657
Application of Neural Network in Displacement Prediction of Dongping Tunnel Z.X. Yin, Z. Gao and Y. Feng	2666
Study of Load Test of Pedestrian Suspension Bridge Y. Liu and D.H. Yan	2670

Application Analysis of Structure Deformation Monitoring Prediction Methods L.T. Zhang and H. Zhang	2674
Effect of Computational Patterns of PCA on Moving Force Identification L. Yu and J.H. Zhu	2678
A Technique Based on Kalman Filter and Least Square Estimation for Time Domain Structural Damage Detection Y. Lei and Y.K. Mao	2683
Investigation Concerning Vibration Reduction of Self-Anchored Suspension Bridge under Vehicle Braking Forces M.G. Yang and Z.Q. Yang	2689
Study on Parameters for Identification of Wavelet Packet Energy Spectrum for Structural Damage Alarming P. Sun, A.Q. Li, Y.L. Ding and Y. Deng	2693
Bidirectional Moving Vehicle Load Identification from Bridge Responses L. Yu and X.G. Wang	2699
A Metamodel Based Damage Identification Method S.E. Fang and R. Perera	2704
Optimized Based on Cloud Model Extension Assessment of Slope Stability F. Guo, W.Y. Xu and F. Xu	2709
Construction Monitoring of Long Span Continuous Rigid Frame Box Girder Bridge G.Y. Wang, J. Liu and Q. Fan	2715
Vibration-Based Crack Identification of Generally Supported Beam Structures Y.X. Zhang, F.H. Xu and C.Q. Wu	2723
Technique Research on Strength Estimation of Pile Foundation Based of Model Analysis Z.J. Wang, Q. Wang, C.H. Liu, K. Hu and D.H. Zhang	2727
Early Age Temperature Rise and Thermal Stresses Induced in Concrete Bridge Pier J.S. Du, X.F. Luo, P.L. Ng and F.T.K. Au	2731
Safety Assessment for Single-Tower Self-Anchored Suspension Bridge X.F. Liang, Y.C. Fu and Y. Xu	2738
A Real-Time Remote Automatic System for Monitoring the Subsidence of Building C.B. Xiong, M. Sun and D.Q. Liu	2742
Negative Selection Algorithm Using Natural Frequency for Novelty Detection under Temperature Variations M. Li and W.X. Ren	2747
Application of Adaptive Control System in High Speed Railway Bridge Construction Control A. Jiang and C.J. Yao	2751
A Comparison of Artificial Neural Network Learning Algorithms for Vibration-Based Damage Detection G. Lyn Dee, N. Bakhary, A. Abdul Rahman and B. Hisham Ahmad	2756
Stress Concentration and Deflection of Box Girder under Shear Lag Effect Y.H. Zhang, Z.J. Yang and S.Z. Liu	2761
Study on Benchmark Structure Damage Identification Base on Frequency Response Function and Genetic Algorithm W.J. Zou, Z. Luo and G.E. Zhou	2765
Effects of Closure Phase on Vertical Density Profile of Fiberboard Y. Zhang and Z.M. Yu	2770
Structural Damage Detection with Cross Correlation Function of Vibration Observations J.Y. Lei, Q.F. Yao and Y. Lei	2776
The Semi-Active Control Considering Structure-Basement-Pile-Soil Interaction Y.T. Li and Z.X. Zhou	2780
Numerical Analysis of Causes and Cures of Longitudinal Reflection Cracking on Side-by-Side PC Box-Girder Bridge Deck Y.Z. Zhuang, T. Ji and B.C. Chen	2787
Swelling Potential Indexes of Swelling Rock in Zhangjiakou District D. Wang, G.X. Yang, F.Q. Wu and J.Y. Dong	2791
Research on the Impounding Test of Trial Span of Cao River Aqueduct H.F. Deng, J. Guo, C.J. Deng, T. Lu and M. Zhu	2798

Finite Element Model Updating Based on Direct Optimization Technique B.D. Ding, H.L. Lv and Y.S. Ji	2804
Studies of Monitoring Technology of High Formwork Bracket Construction of the Memorial Hall for the Battle of Crossing the Yangtze River K.W. Ding, D. Xia and P. Hu	2811
Semi-Active Control on Stay Cable Vibration Based on Fuzzy Logical Theory Z.R. Xiao	2815
Research on Deformation Monitoring of Large Span Hyperbolic-Paraboloid Composite Torsional Shell H. Deng, G.J. Xiao and Y. Cao	2819
Computer Aided Health Monitoring System for Super-Huge Spacial Cable Structures Q.L. Zhang and D.L. Li	2824
Dynamic Time-History Deformation Response Analysis of Long-Span Beam Bridge Subjected to Flowing Ice Z.P. Bai, X.D. Zhang and C.L. Han	2830
Theoretical Analysis for Effects on a Base-Isolated High-Rise Building J.X. Kang and L.M. Zhao	2835
Dynamic Test and Analysis of Concrete Filled Steel Tube Arch Bridge L.X. Wang and S.K. Di	2843
Damage Detection of Plane Member Structures Based on Modal Curvature Difference Method J. Zhang, H. Peng, C.H. You, Y.L. Deng and H.Y. Zhang	2848
A Seismic Effective Method for Double-Layer Reticulated Shell Using Buckling-Restrained Braces C. Wu and X.L. Wang	2852
Elastic Waves in Pipe Resting on Two-Parameter Foundation Z.R. Lin and A. Kasai	2857
A Mixed Control System of 3D High Rise Benchmark Building Model Based on Genetic Algorithm J.L. Zhang, Z. Hong, Q. Lin and J.S. Jiang	2862
Study on the Damage Detection of RC Frame Beams Based on the Vibration Mode Slope Change Rate G. Xue and F.G. Li	2868
Monitoring of External Prestressing Tendons Construction Process of Jiamusi Highway Prestressed Concrete Bridge during Strengthening in China A.F. Naser and Z.L. Wang	2873
Dynamic Test Signal Analysis and Modal Parameters Identification of High-Pier Long-Span Rail Bridge Based on HHT S.Q. Qin, Q.H. Pu and Z. Shi	2880
Sensored Elastomeric Bridge Bearing and its Application Y.Z. Zhuang, G.K. Fu, P.J. Chun and J.H. Feng	2887
Experimental Studies on the Superelastic Properties of SMA Material H. Meng, K. Yang and S.L. Wang	2891
Stress and Strain Concentrations in an Elastic Bar of Circular Cross-Section with Semielliptic Groove Subjected to Tension J. Hou and Z. Yang	2896
The Applied Research on TMD Control in Structures for Seismic Protection H. Zhang and H.Y. Zhang	2903
Analysis of Subharmonic Resonance Response of the Time-Delayed System H. Zhang, X.H. Wu and L. Zhang	2910
Capillary Absorption of Liquid by Powder Compact and its Application on Preparation of Repeatable Cement Compacts Y.Q. Shen and M. Deng	2916
Vibration-Based Damage Identification Method Using Modified Back-Propagation Neural Networks H. Jin and F. Nan	2920
Equidirectional Umbrella Diameter Changing Mechanism for Ultrasonic Inspection of Seabed Pipelines C.Z. Cao, F.Q. Wang, Q.F. Tian, J.L. Zhuang and F.C. Li	2927

Evaluating Identification Indices on Damage Detection by a Fuzzy Analytical Hierarchy Process	
S.L. Zhang, S.F. Chen, H.D. Wang and W. Wang	2934
Steel Bar Corrosion Monitoring by Potentiostatic Pulse Method	
L.J. Kong, G.F. Qiao, T. Zhang and G.P. Song	2941
All-Solid-State Reference Electrode Based on Polymer Composites for Corrosion Monitoring of Steel in Concrete	
L.J. Kong, T. Zhang and G.P. Song	2945
Performance Analysis of Fire-Resistant H-Beam Steel	
J.Q. Qian, J.P. Chen, B.Q. Wu and J.C. Wu	2949
The Stress and Strain Concentrations in Curved Beams of Finite Thickness with End Moments	
L.L. Zhang, Z. Yang, J. Hou and Z.Q. Wang	2953
Finite Element Analysis of Staircase under Earthquake Action	
Q.W. Su	2964
Experimental Study about the Performance of the Piezoelectric Friction Damper	
J.G. Zhang, W.Y. Deng and J. Han	2969
Experimental Study of Buckling-Restrained Brace System with Pall-Typed Frictional Damper	
J.G. Zhang, J. Han and W.Y. Deng	2973
Numerical Analysis and Performance Test of Bidirectional Piezoelectric Control Device	
Y.H. Liu, P. Tan, F.L. Zhou, Y.F. Du and W.M. Yan	2977
Static Finite Element Model Updating for Special-Shaped Bridge Based on Uniform Design Method	
Y.F. Gong, H.B. Liu, Y.C. Cheng and H.L. Wang	2983
Optimal Design of Microseismic Monitoring Networking and Error Analysis of Seismic Source Location for Rock Slope	
N.W. Xu, C.N. Tang, S.H. Wu, G.L. Li and J.Y. Yang	2991
Research on the Evaluation of the Tunnel Leakage Classification Based on BP Artificial Network	
H.Z. Pan, Y.C. Huang and N. Deng	3000

6 Reliability and Durability of Structures

Comprehensive Evaluation of In-Service RC Flexural Member's Reliability Based on Attribute Mathematics	
W.S. Li and Y.H. He	3009
The Pile Bearing Capacity Analysis Based on ANSYS and Reliability Analysis	
Q.Z. Yan, Z. Zhang, T.Q. Liu and Y.H. Wang	3015
Study on Reliability of Jacket Offshore Platform by Seismic Action Based on ANSYS	
Q.Z. Yan, Z. Zhang, L. Cui and Y.H. Wang	3023
Structural Optimization of Offshore Jacket Platform Based on ANSYS	
Q.Z. Yan, Z. Zhang, L. Cui and Y.H. Wang	3029
Structural Reliability Analysis with Uncertainty-but-Bounded Parameters Based on Meshless Method	
W. Zhao, J.K. Liu and Q.W. Yang	3034
Influence of Cover Porosity on Steel Corrosion in Cement-Based Materials	
J.J. Shi and W. Sun	3042
Effect of Sulfate Ions on the Corrosion Behavior of Steel in Concrete Using Electrochemical Methods	
J.J. Shi and W. Sun	3049
The Research of Concrete Durability Design	
X.S. Zhang and J.P. Chen	3055
X-Ray Computed Tomography Studies of 3D Meso-Defect Volume Distribution Changes of Cement Paste due to Carbonation	
J.D. Han, G.H. Pan, W. Sun, C.H. Wang and H. Rong	3061

The Application of Unascertained Theory in Quality Comprehensive Evaluation of Bridge Engineering	3067
H. Dong, Q.C. Gao and H.W. Zhang	
Behavior of Different Corrosion Ratio RC Beams under Fatigue and Monotonic Loads	3074
L. Wang, A.P. Yu and B.C. Liu	
Reliability Research of Masonry Column Strengthened with CFRP Based on Monte-Carlo Method	3079
L. Li, H.Y. Jiang, Y. Zheng, Y.L. Yang and M.Z. Sun	
Efficient Algorithm of Engineering Structural Reliability and its Realization with Matlab	3084
L. Li, H.Y. Jiang, Y. Zheng, Y.L. Yang and M.Z. Sun	
Engineering Structural Reliability Calculation Based on Algorithm of Most Optimization Calculation and its Realization with Lingo	3089
L. Li, H.Y. Jiang, Y. Zheng, J.L. Xu and M.Z. Sun	
Predicting the Remaining Service Life of Reinforced Concrete Members after Fire Exposure	3094
H.L. Wang	
Reliability Analysis of Earth Slopes Using Differential Evolution	3099
F. Kang, J.J. Li and Z.Y. Ma	
Artificial Bee Colony Algorithm for Reliability Analysis of Engineering Structures	3103
H.J. Li, J.J. Li and F. Kang	
Fuzzy Matter-Element Evaluation Method for Reliability Analysis of an Existing Highway Tunnel	3110
Z.X. Gong and J.G. Yang	
Electromagnetic Field in the Chaotic Motion of Thin Plate	3114
L.J. Liu, Z.R. Wang and J.F. Lv	
Fractal Characterization of Corroded Surface Profile in Reinforcing Steel Bars	3118
Y.D. Xu and C.X. Qian	
Freeze-Thaw and De-Icing Salt Resistance of Concrete Containing Mineral Admixtures and Air-Entraining Agent	3122
X.L. Yuan, B.X. Li and S.H. Zhou	
Three Dimensional Numerical Modeling for the Stratified Rock Slope and the Parametric Analysis	3128
G.Y. Lu, Z.Q. Zhu and Q.Y. Liu	
Resistance of Hydrated Cement Paste to Acid Attack and Kinetics Analysis of Corrosion	3133
M. Zhao, X. Zhang and Y.J. Zhang	
Numerical Simulation Method for Predicting Chloride Concentration Distributing around Reinforcement in Concrete	3138
X.L. Wang, G.S. Ma and C.L. Qi	
Environment-Based on Experimental Design of Concrete Structures	3143
L.B. Jin and X.L. Xiong	
The Fractal Character of Corrosion Steel Surface	3150
Z.Y. Kong and S.H. Xu	
Reliability Estimating of Existing Bridge Using Dynamic Monte-Carlo Method	3156
K.K. Peng and P.Y. Huang	
Research Methods of Applicable and Durable Configurations of Concrete Bridge	3161
Y. Xu and X.X. Tang	
The Research of the Effect of Dynamic Load and Temperature on the Diffusion Performance of Chlorideion in Concrete	3167
C.H. Wang, J.Y. Jiang, G.W. Sun, J.D. Han and Y.F. Qiao	
Quantitative Characterization of Effective Porosity in Cement-Based Composite Materials	3174
G.W. Sun, J.Y. Jiang, Y.S. Zhang and C.H. Wang	
Time-Dependent Reliability Analysis of Existing Tunnel Structures Based on the Bayesian Method	3180
J. Guo	
A Key Parameter in a Novel Fatigue Crack Growth Model	3186
L.X. Gu, Z.F. Liu and Z.Y. Xu	
Probabilistic Analysis of Corrosion-Induced Resistance Degradation of Reinforced Concrete Bridge Beam under Incomplete Information	3193
L. Wang, Y.F. Ma and J.R. Zhang	

Influence of Flexural Loading on Permeability of Chloride Ion and Diffusion Coefficients in RC Beams	
J.Z. Zhang, L. Lu, L.Y. Wang and J.D. Wang	3200
The Effects of Carbonation on Damping Capacity of Reinforced Concrete Materials	
T.J. Liu, L.L. Sui and D.J. Zou	3206
Prediction of Chloride Ingress into Concrete by Capillary Absorption	
L.C. Wang	3210
Damage Analysis on a Frame Structure under Repeatedly Blasting Vibration	
W.H. Tan, M. Yu and P.F. Zhang	3214
Durability of E-Glass Fiber Reinforced Polymer Subjected to Freeze-Thaw Cycle and Sustained Load	
S. Li, Y.Y. Lu and H.T. Ren	3219
Probability Evaluation Method for Cable Safety of Long Span Suspension Bridges under Extreme Wind Load	
J. Hu and J.P. Ou	3223
Durability of Ancient Earthen Architecture under Wind Erosion in the Milan Ancient City along the Silk Road of China	
X.D. Wang, H.Y. Zhang, G.S. Yan and Q.Q. Pei	3230
Analysis on Fatigue of Natural Corrosion Steel Bars	
S.B. Li, W.P. Zhang, X.L. Gu and C.M. Zhu	3237
Study on Durability Damage Rules and Aging Prediction Method of Geosynthetics	
Z. Liu and G.L. Yang	3242
Study on Shrinkage of Concrete Based on BP Neural Network	
T.C. Wang, Q.M. Peng, W.L. Liu and L.F. Feng	3249
Residual Life Predication of Reinforced Concrete Elements Based on Time-Varying Reliability	
J. Wang, H.G. Ji, J.J. Wang and Z.J. Zhang	3258
Seismic Assessment of RC Structures in Service Affected by Reinforcement Corrosion	
D.J. Zou, T.J. Liu, H.X. Lv and J. Teng	3263
Reliability Analysis of Hydraulic Tunnel Lining Structure with Stochastic Finite Elements Method	
D.H. Liu, J. Zheng and Z.L. Li	3267
Time-Dependent Reliability Analysis of Existing Double-Curvature Bridge Strengthened with Augment Section Method	
J.T. Kang, N. Wang and Y.J. Huang	3274
A Study on Risk of Durability Failure for Construction Projects of Tunnels and Underground Projects	
H.K. Pan, Z.G. Zhang and L.D. Yang	3280
The Application of the Improved Interval Number Fuzzy Comprehensive Method in Bridge Evaluation	
Z.L. Wei, Q.H. Pu and X.J. Huo	3285
Research on Bending Resistance of Corroded RC Beams	
Q. Wang, G. Xu, G.L. Liang and J. Wei	3292
Durability of BFRP and Hybrid FRP Sheets under Freeze-Thaw Cycling	
J.W. Shi, H. Zhu, Z.S. Wu and G. Wu	3297
Reliability Analysis of PC Structure in Chloride Corrosion Subjoining Cyclic Freeze-Thaw	
Y. Chen, R.G. Liu, W.L. Zhou, Y.D. Zhang, T. Liu, H. Li, S.F. Zhang and C.H. Lu	3301
Study on Permeability of Concrete under Sustaining Tension	
L.G. Ma, Y.S. Zhang and L.G. Song	3306
Water Sorptivity and Permability of New-Old Concrete Composite System	
G.C. Long, K.L. Ma and Y.J. Xie	3311
Study on the Stability of Underground Constructions with Different Locations in Alpine and Gorge Region	
M. Yong, W.S. Zhu, D.J. Yu and L.G. Wang	3320
Study on Statistical Parameters of Resistance of Steel Highway Bridge Reliability Design in China	
K. Li	3324

Condition Evaluation of Existing Long-Span Bridges Using Fuzzy Based Analytic Hierarchy Process	
J. Deng, J. Li and X.Y. Fang	3328
Fatigue Analysis of the Asphalt Mixture Beam Using Damage Evolution Equations	
D. Han, B.G. Zhan and X.M. Huang	3332
Failure Probability of Salt Rock Underground Gas Storage Cavern Based on Random Field Model of Material Parameters	
J. Liu, J. Song and Q.Y. Zhang	3336
Aging Behaviors of Natural Rubber in Isolation Bearings	
H.S. Gu and Y. Itoh	3343
A Least Square Support Vector Machine Approach Based on Uniform Design Method for Structural Reliability Analysis	
X.L. Yu, H.B. Zheng, Q.S. Yan and W. Li	3348
Durability Evaluation Analysis of Reinforced Concrete Structures Based on Extension Method	
J.Z. Liu, J.Y. Xu, E.L. Bai and Z.G. Gao	3354
Damage Analysis of Mianzhu School Buildings in Wenchuan Earthquake	
X.K. Li	3359
Stochastic Analysis of Chloride Profiles in Concrete Structures	
Q.M. Jiang, L.F. Yang and Z. Chen	3364
Study on Operating Vehicle Load Limit of Sub-Health Bridge	
J.P. Zhang, A.R. Liu, G. Wu and K. Zeng	3369
Influencing Factors Sensitivity Analysis of Carbonization Life of River-Crossing Tunnel Lining Structures	
H.M. Chen, D.W. Li and C.J. Ying	3376
Effects of the Concentration of Sodium Chloride on the RCM Test	
M. Lu, Y.B. Yang, J.C. Li and W.Y. Guo	3380
Study on Predicting Service Life of Concrete through Accelerated Permeability Test	
W.L. Li, Q. Tao, W.G. Chai, H. Zhang and Z.G. Li	3385
The Ultimate Bearing Capacity Analysis of P.C. Bridge Based on Material Performance Degradation	
P.F. Xue, D.L. Mao and J.F. Wang	3391
Study on Neutralization Model for Fly Ash Concrete Subjected to Acid Rain	
J.G. Niu, B. Zhang and D.T. Niu	3401
Research on the Process of Concrete Damage under Frost Action	
K.Z. Ma, J.G. Hou and J.Y. Jia	3406
A New Method of Reliability Analysis on Strength and Stiffness for Frame Structure	
Y. Li, B. Sun and W. Zhao	3411
Characterization of Steel/Concrete Interface for a Long-Term Corroded Beam Stored in Chloride Environment	
R.J. Zhang, H.L. Yang, V. L'Hostis, A. Castel and R. François	3415
Experimental Study on Short-Term Rigidity for Reinforced Concrete Beams Strengthened with CFRP Board	
Y. Xu, Y. Xu, J.T. Cai and H.G. Luo	3421
The Effect of Freeze-Thaw Cycles on Mechanical Properties of Concrete	
W.L. Song, X.F. Li and K.F. Ma	3429
Experimental Investigation on Shear Behavior Of GFRP-Concrete Hybrid Beams	
F. Zhao, P. Feng, C.H. Chen and W.J. Lou	3433

7 Structural Rehabilitation, Retrofitting and Strengthening

A Method of Determining Strengthening Design Ground-Motion Parameters for the Existing Building	
Y.H. Ma, G.F. Zhao, J. Cui and P. Tan	3443
Seismic Reinforcement Conception Design of Existing Masonry Structure	
H.W. Qi, M. Li and X.N. Huang	3448
The Finite Element Analysis of Crack Propagating in Bolt-Supported Jointed Rock-Mass	
Z.C. Wang and Q. Yang	3453

Analysis of Subsidence and Bearing Capacity of Consolidated Ground Z.C. Wang	3457
Vibration Control of Plan-Asymmetric Buildings Using Active TLCGD C. Fu	3461
Application of Pile Underpinning for Strengthening Design of Longgan Bridge Y.P. Tan, J. Li, J.H. Zou and H.B. Jiang	3465
Nonlinear Analysis of Structures Supported on Hysteric-Friction Isolation System with Elastic-Plastic Displacement-Constraint Device under Main Shock and Aftershock G.F. Zhao and Y.H. Ma	3474
Application of Energy Dissipation Technology to C-category Frame Structure of School Buildings for Seismic Retrofit of Increasing Precautionary Intensity D.G. Weng, C. Zhang and X.L. Lu	3480
Research on Mechanisms and Ground Uplifting Effects by Grouting Taken the Grouting-Soil-Building Interaction into Account Y. Wang, X.H. Wang and M. Zhang	3488
The Rehabilitation of Pile Foundation of a Concrete Continous Bridge in Guangzhou City H.B. Jiang, L.M. Yang and A.D. He	3499
Mechanism of Debonding Failure between Reinforced Layer with Stainless Steel Wire Mesh and Polymer Mortar and RC Structures H. Huang, J.L. Hou and B.Q. Liu	3504
Research of Stress Concentration and Retrofitted Methods for Orthotropic Steel Bridge Decks Y.L. Zhang, Y.G. Zhang and Y.S. Li	3511
Analysis of Relationship between Pile Quality and its' Bearing Capacity X.G. Wen, A. Sun, H.M. Wu and W.T. Wang	3517
The Reinforcement Design of Special Vertical Irregular Steel-Concrete Composite Structure F.K. Zeng, C.M. Hu and X.C. Liu	3523
Experimental Study on Steel-Concrete Interface Skid Resistance Properties T.L. Yu, X.G. Liu and H.X. Zhang	3527
Application of Flexible Reinforcement on Anchored Cave Dwelling Based on Numerical Calculation with Rheology D.Y. Ji	3532
Reseach on Flexural Behavior of Reinforced Concrete Beams Strengthened with Prestressed Near Surface Mounted CFRP Tendons Y.H. Ding and Y.J. Ma	3537
Out-of-Plane Behavior of Masonry Walls Strengthened with Ferrocement S.P. Chen	3545
Study on Crack Causes and Strengthening Measures of Large Span PC Continuous Box Girder Bridges W. Peng and Z.X. Zha	3551
Research on the Properties of the Concrete Filled Steel Tube Columns with CFRP Composite Materials W. Gu and H.N. Li	3555
Properties of Interface Structure between Ultra-Thin White Topping and Old Concrete Pavement F.R. Zhao and S.F. Wang	3560
Shrinkage Performance of Adherence of New Steel Fiber-Reinforced Concrete to Old Concrete H.Q. Cheng and D.Y. Gao	3569
Research on Hysteretic Behavior of the Concrete Filled Square CFRP-Steel Tubular (S-CFRP-CFST) Beam-Columns (II): Experimental Results and Analysis Y. Che, Q.L. Wang, Y.B. Shao and X. Zhang	3575
Research on Hysteretic Behavior of the Concrete Filled Square CFRP-Steel Tubular (S-CFRP-CFST) Beam-Columns (I): Experimental Study Y. Che, Q.L. Wang, Y.B. Shao and H.T. Mu	3580
Reliability Analysis and Design Suggestion of Concrete Structure Bonded Rebars with Inorganic Material Y.G. Liang, T.B. Gao and Y. Deng	3586

Creep Properties of CFRP-Steel Composites Subjected to Tensile Loads Y.Y. Lu, X.P. Zhang and Z.Y. Tang	3591
Effect of Cycle-Counting Methods on Fatigue Evaluation of Railway Bridges C.S. Wang and L. Hao	3596
Experimental Investigation on Anchorage Mechanisms of Self-Locked Anchor under Combined Tension and Shear Y. Li, D.Z. Pan and L. Zhang	3600
Bearing Behavior of Steel Foot Pipe in Tunnel on Soft Base Y.M. Wu	3604
Flexural Behavior and Ductility of Concrete Beams Strengthened with Near-Surface Mounted GFRP Bars H.X. Zhang, L. Wang and G.R. Liu	3610
Experimental Study on the Steel Bar/Wire Mesh Reinforced Preplaced Aggregate Concrete Composite Strengthening of Concrete Square Columns H.J. Li, Z. Zhen, C.H. Liang, M.S. Dai and X.H. Lu	3615
Prediction of Bond Strength of FRP-Concrete Based on Multiple Linear Regression Method J.L. Huang, P.Y. Huang, Z.W. Li and X.H. Zheng	3623
Experimental Research on the New Method of Complex Reinforcement for Steel Beam L.G. Jia and L.Z. Hou	3629
Experimental Study on Flexural Performances of Concrete Beams Strengthened with Near-Surface Mounted (NSM) FRP Reinforcement L.L. Sui, T.J. Liu, F. Xing and Y.X. Fu	3634
On the Soil-Structure Interaction Numerical Study of Strengthening Design of Sluice within Mining Subsidence Areas H. Chang, J.W. Xia, H.F. Chang and F.J. Zhang	3640
Applications of Muti-Ribbed Walls in the Strengthening of Masonry Structures with Bottom Frame P. Chang and C.Y. Zhai	3645
Reinforcement Method with CFRP in Longmen Grottoes Plank Way Slab X.J. Gao, Y.H. Li and J.H. Li	3649
Numerical Analysis on Settlement Law of an Underpinning Structure Composed of Piles and Beams Q. Jia and F. Gu	3654
Centrifuge Model Tests on Geotextile-Reinforced Slope in Situation of Excavation M. Li, G. Zhang, C.F. Lee and J.M. Zhang	3662
Nonlinear Finite Element Analysis of the Reinforced Concrete Box Girders Strengthened with Carbon Fiber Sheets C.L. Wei, X. Lei and G.H. Wang	3668
Interface Properties of Cracked RC Beams Strengthened with Prestressed Hybrid FRP - Part I: Crack Height Y.C. Guo and J.H. Xie	3673
Numerical Simulation of Bolted-Steel Plates Strengthened Coupling Beams Y. Zhu, Y. Zhou and H. Zhu	3677
The Research on the Stability of the Foundation and Grouting Treatment Effect under the Process of Surface Structures in Old Mined-Out Areas K. Li, T. Li and D.L. Wang	3682
Behavior of Large-Scale Circular and Square RC Columns Confined with Carbon Fiber-Reinforced Polymer under Uniaxial Compression Z.Y. Wang, D.Y. Wang and D.G. Lu	3686
Numerical Analysis of Foundation Settlement for a Fifteen-Story Moving Building Q. Jia, X. Meng and X. Zhang	3694
Friction Loss of Externally Prestressed Concrete Beams with Carbon Fiber-Reinforced Polymer Tendons T.L. Yu and L.Y. Zhang	3701
A Method of Strengthening Concrete Suspension Bridges Y. Ye, S.S. Pan and Z. Zhang	3707
Research on the Effect of Injury Beams Strengthened with Carbon Fiber Reinforced Polymer (CFRP) of the Unloading Degree S.W. Zhao, S.F. Fu and Z.Z. Xu	3713

Degree of Monolithic Secure and its Application in Aseismic Strengthening of Existing Engineering Structure J.M. Duan	3718
A New Widening Method of Reinforced Concrete Box Girder and its Experimental Research Q. Wang, L. Shi and Z. Zhang	3724
Meso-Level Numerical Study on Different Type of Fiber Reinforced Concrete Y.F. Zhang, H. Liu and J.P. Chen	3730
Simulation Study on Concrete Structure Bonding with Steel Plate Y.L. Wang, L.Y. Wu and L.G. Wang	3735
Numerical Simulation Analysis of Pullout Test of Planting Steel - A New Reinforcement Technique J.C. Mu, H.F. Xi, Y.H. Wu, S.Q. Li and G.H. Yang	3739
Simulated Analysis for Strengthening RC Beam Bonding with External Steel Plate L.Y. Wu, Y.L. Wang and F. Hong	3745
Boundary Condition Updating of Bridge Structure Based on Mode Parameters Z. Shi, R.D. Zhao, S.Q. Qin and Y.F. Gao	3749
Study on Field Detection and Monitoring Test for a Project of Large Area Soft Foundation Treatment R.L. Zhang	3757
Experimental Research on Aseismic Strengthening of R.C Cross-Shaped Columns W.L. Tian, H. Dong and N. Jie	3761
Debonding Prediction of RC Beam Flexurally Strengthened with Prestressed FPR J.H. Xie, J.X. Zhao and P.Y. Huang	3766
An Experimental Study on Flexural Behavior of Reinforced Concrete Beams Strengthened with High-Performance Ferrocement H.P. Liao and S.S. Fang	3772
Seismic Behavior of R.C. T-Shape Columns Strengthened with CFRP and Steel Plate M.J. Zhou, J. Niu, W.L. Tian and L. Wang	3777
On-Site Test Study of RC Slabs Strengthened with CFRP and BFRP X.J. Xu, L.J. Li, W.C. Zhou, M. Min and F. Liu	3782
Experimental Study on Anti-Seismic Restoration of Rowlock Walls W.M. Tang, X.B. Li, L.Z. Sun, G.P. Jin, Z.H. Li and Q.H. Zhang	3787
Ground-Penetrating Radar Detection of the Defects in Tunnel Lining Y.H. Liu, D.Y. Wu and J.X. Wang	3794
Experimental Investigation on the Anchorage Mechanics of Anchorage Cable of the late Model with the Pressure Uniform W.J. Lei and G.X. Xu	3798
Mechanical Behavior of FRP-Confined Rectangular Concrete Column P. Wu and F. Yu	3804
Study on Development Strategy of University's Architectural Design Enterprise G.F. Du	3808
On the Relationship between Deteriorated Level of ASR Damaged Concrete and Lithium Migration from Acceleration Lithium Migration Technique Test W.C. Wang, C.C. Liu and C. Lee	3812
Evaluation and Performance of Repair Materials for Rehabilitation of Concrete Structures M.I. Khan, T.H. Almusallam, A.a. Almosa, S.H. Alsayed and Y.A. Al Salloum	3820
Study on Stress-Strain Relationship of FRP-Confined Concrete Filled Steel Tubes F. Yu and P. Wu	3826
Axial Compressive Behavior of CFRP-Confined Concrete Columns Subject to Short-Term Preloading Z. He and J.P. Jin	3830
Local Stiffening of Steel I-Beams by Using CFRP Materials K. Narmashiri, M.Z. Jumaat and N.H. Ramli Sulong	3838
Comparing the Use of CFRP Laminates with Light Gauge Galvanized Steel Plates in Structural Strengthening of Beams Subjected to Flexural Loading K.A.D. Bsisu, H. Yaser, O. Malkawi and R. Ynis	3844

Test Research of Prestressed Concrete Beams with CFRP under Low Cyclic Loading D.B. Jiang and X.J. Gu	3848
---	------

8 Structural Wind Engineering and Earthquake Engineering

Lateral Force Demand of Essential Equipments in Hospital Buildings for Earthquakes C.H. Huang, Y.T.A. Tuan and C.Y. Huang	3855
Analysis for Axial Vibration and Internal Forces of Totally and Partially Embedded Pile Groups with Flexible Caps Q. Ren and M.S. Huang	3860
Earthquake Impact Analyses on Slopes Using Finite Element and Limit Equilibrium Methods Y.H. Ong, A. Kasa, Z. Chik and M.R. Taha	3868
Analysis on Aseismic Performance of the Beijing Yintai Center Z.Q. Zhang, A.Q. Li, Y. Sun and M.Y. Huang	3872
Bridge Buffeting Analysis Based on POD and Aeroelastic Coupling Method Z. Liu and Y.K. Luo	3878
Dynamical Characteristics Research on Cable Dome L.M. Chen and S.L. Dong	3882
Wind Speed Profile and Gradient Height in Typhoons Observed by Vehicular Doppler Radar in South China L.X. Li, Y.Q. Xiao, L.L. Song and P. Qin	3887
The Isolation Effect Analysis of Base and Story Isolation System in Vertical Seismic Action S.W. Duan, X.W. Tao and H.K. Liu	3893
In-Plane Cyclic Test on Framed Dry-Stack Masonry Panel K. Lin, Y.Z. Totoev and H.J. Liu	3899
Parallel Computing Traveling Wave Effect on the Seismic Response of 3D Valley Topography Site under Long-Period Seismic Excitation W. Zhang, M.W. Zhu and T.T. Shan	3904
Interaction of Multiple Semi-Cylindrical Gaps and a Shallow-Buried Cavity R. Zhang and H.L. Li	3910
Large Eddy Simulation of Wind Field around Large-Span Cantilevered Roofs C.Y. Li and D.M. Wei	3914
Investigation on Applicability of Pushover Analysis on High-Rise Diagonal Grid Structural System J. Teng, H.B. Tu, H.L. Mao and Y.L. Qiu	3918
First-Order Nonlinear Pseudo-Beat Vibration Model Identification of High Rise Buildings D.M. Huang, L.D. Zhu and Q.F. Wang	3925
Dynamic Characteristics Research in Frame Structures Subjected to Vertical Vibration Z.H. Nie, H.B. Liu and K. Liu	3935
Seismic Analysis of Continuous Rigid Frame Bridge with Energy-Based Modal Pushover Method Z.Q. Zou, L.P. Zhou and G.J. He	3939
Numerical Simulation of Wind Pressure Distribution on Structure Roofs with Suspension Solar Panels Y. Zhou and Q.L. Zhang	3943
System Identification of High-Rise Building under Unknown Seismic Excitation with Limited Output Measurements Y. Lei, C. Liu and Y.Q. Jiang	3947
Discussion on the Seismic Design Analysis Method of Masonry Building X.S. Ren and Y.F. Tao	3952
Estimating Seismic Energy in Structure with Wavelet Transform M.L. Xiao, L.Y. Ye, Y.F. Li and Y. Li	3958
Long-Period Response Spectrum and Earthquake Response Analysis of Super High-Rise Building Z.X. Zhang and Q.J. Chen	3964

Seismic Behavior Analysis and Seismic Strengthening of Corner Joints without Seismic Details	
H.Y. Zhang, J. Duan and X.M. Chen	3972
3D Temporal Characteristics of Scale Model Responses in Shaking Table Test	
Y.R. Wang, M.Y. Zhang, J.W. Dai, M. Tong and G.C. Lee	3977
Modeling of Hysteretic Damper in Three-Story Steel Frame Subjected to Earthquake Load	
M.S. Masoomi, S.A. Osman and S. Shojaeipour	3981
Study on Disk Spring Two-Storey Rolling Isolator	
J.Y. Sui, W.F. Liu and Y.Y. Zhang	3987
An Experimental Study on Mechanical Behavior of Superelastic NiTi Shape Memory Alloy Bar Subjected to Torsion	
H.J. Zhou, H.H. Huang and H. Zhang	3992
Investigation and Summarization of Buildings from the April 14, 2010 Yushu (China) Earthquake	
B. Wen, P. Zhao and D.T. Niu	3996
Study on Mechanical Properties of a through Tied Arch Bridge Model with Different Wind Bracing Forms	
S.K. Di, F.Z. Bai, A.L. Zhang and H. Li	4000
An Experimental Study on Seismic Performance of Reinforced Masonry Structure with Small-Sized Concrete Hollow Blocks	
H.B. Wang, X. Guo, B.K. Li and H.X. Yang	4008
Experimental Investigation on Mid-Story Isolated Structures	
X.Y. Huang, F.L. Zhou, S.L. Wang, L.H.W. Heisha and X.H. Luo	4014
Seismic Response Analysis of Substation Involving Interaction of Main Structure-Electrical Equipments	
B. Wen and D.T. Niu	4022
Analysis of Earthquake Response on Isolated Building with Limiting Displacement Protective Devices	
J.H. Liu and W.T. Ding	4027
Seismic Reliability of Long-Span Bridges Based on the First Order Reliability Method	
B.Y. Jia, X.L. Yu, H.B. Zheng, Q.S. Yan and W. Li	4032
Dynamical Response of Circular Tunnel with Steel Lining under the Action of Blasting Vibration	
C.P. Yi, W.B. Lu, L. Feng and G. Wang	4037
Seismic Response Analysis of Unequal Altitude Double-Tower Connecting Structure with the Changes of Connecting Beam Location	
J.S. Lei, Q. Ma and B. Xue	4043
Parameter Identification and Numerical Analysis of Shaking Table Tests on Liquefiable Soil-Structure-Interaction	
P.Z. Li, D.M. Zeng, S.L. Cui and X.L. Lu	4048
The Vibration Affects the Adjacent Sensitive Building and its Control Countermeasures	
J.C. Hu, Y.D. Bian and H.F. Wang	4058
Simulation of Flow past Cable with Upper Rivulet on its Surface and Investigation of the Cable Dynamics	
C.Y. Zhou, P. Xie and W.Y. Ji	4064
Seismic Response Analysis of Pier in Deep Water with Wave Effect	
L.L. Jia and Y. Han	4072
Studies and Improvements on Modal Pushover Analysis and Application on Bridge	
Y.N. Mu, L. Shi and Z. Zhang	4076
Numerical Simulation on Wave Forces Acting on Superstructure of Twin-Decks Bridge	
X.T. Zhang, A.R. Chen, C. Wang and K.N. Gao	4083
The Application of Increment-Dimensional Blocks PIM on the Base-Isolated Structure	
X.Z. Zhang, A.H. Han, Z.L. Wu and C. Wang	4089
Time History Analysis of the Non-Symmetrical Special-Shaped Column Structure on Multi-Dimensional Seismic	
D.Q. Xu, X.Y. Wang and M.M. He	4095
Wind-Induced Response of the Solar Chimney	
X.D. Lv, X.F. Yuan and L. Zhou	4100

Experimental Research on Aerodynamic Characteristics of Bridge Deck at Extreme Attack Angles	
F.Y. Xu, B.B. Li, C.L. Huang and Z. Zhang	4104
Research on Torsional Vortex Resonance of a Streamlined Bridge Girder	
F.Y. Xu, Y.N. Li, Z.X. Lin and Z. Zhang	4109
AMD Application for Suppressing the Lateral and Torsion Buffeting Response of Suspension Pipeline Bridge	
X. Chen, F.Y. Xu, W.L. Qiu and Z. Zhang	4114
Numerical Simulation of Backward Facing Step Flow Using Nonlinear Eddy Viscosity Model	
T.T. Wang and Q.S. Yang	4120
Error Study of Displacement Model for Seismic Analysis of Long-Span Structures Subjected to Multi-Support Earthquake Excitations	
W. Guo, Z.W. Yu and Z. Guo	4125
An Improved Three-Strut Model for Masonry Infills in RC Frame Structures	
C.H. Zhai, X.M. Wang, S. Li and L.L. Xie	4129
Seismic Design of R.C. Stairs in Masonry Structure	
Y.B. Cheng, H.W. Du, S.Y. Zhang and L.Z. Xu	4133
Seismic Analysis of Separated Platform Subway Station Structure	
Y. Zhou, Z.W. Wang and Y.F. Wang	4138
Simulation of Non-Gaussian Wind Pressure Fields on Domed Structures	
N.N. Aung and J.H. Ye	4142
Characteristics of Wind Loads on Spherical Shells with Large Rise-Span Ratio	
Y. Qiu, Y. Sun and Y. Wu	4149
Shaking Table Model Test for Vertical Seismic Response of Bent-Type Aqueduct	
Q.H. Duan and M.L. Lou	4156
Nonlinear Seismic Behaviors of Girder Bridge with Single-Column Pier	
W.L. Qiu, L. Zhou and Y. Zhang	4165
Parametric Study of Longitudinal Seismic Pounding Response for RC Girder Bridge Based on Kelvin Impact Model	
H. Jiang, Z.Y. Xiong, X. Zhu and Q.S. Yang	4170
A Novel Concept for Describing the Wind Sensitivity of Structures	
J.S. Zhang, Y. Wu and D. Wu	4174
Analysis of Vibration Control due to Strong Earthquakes	
H.L. Wu	4179
Study on Seismic Performance of Coupled Shear Walls with Vertical Dampers	
C. Pan and D.G. Weng	4185
Seismic Performance of Reinforced Concrete Pier with Inside Concrete Filled Steel Tube	
W.L. Qiu, M. Jiang and L. Zhou	4194
Analysis of Soil-Structure Interaction (SSI) Effects on Seismic Response of Base-Isolated Structures	
C.P. Li, W.Q. Liu, S.G. Wang and D.S. Du	4199
PFC Simulation on Shaking Table Concrete-Faced Rockfill Dam Model Test	
G. Yang, Y.M. Chen and D.Q. Gao	4208
Seismic Damage Prediction of Multistory Brick Buildings Based on RBF Neural Network Model	
L. Wang, L. Sun, D.D. Kong and X.Y. Liu	4213
Seismic Response of the Asymmetric Structure Isolated by the Friction Sliding Bearings	
J.Q. Wang, Y.G. Ding and D.W. Li	4218
Wind Vibration Response Analysis for Plate-Cone Reticulated Shell	
F. Wang and X. Wang	4222
Seismic Behavior of Shifang Telecom Building under Conventional Earthquakes	
X. Hu and Y.T. Gao	4227
Static Elasto-Plastic Analysis of Buildings with Steel Tower on Top under Rare Earthquake	
X. Hu and Y.T. Gao	4232
Design and Optimization of a New Type of Sliding Isolated Bearing and its Application	
W. Huang, W. Shu, L. Zhang and P. Wang	4237

Recent Development in Analytical Models for Earthquake-Induced Pounding between Adjacent Bridge Structures Y.F. Gao, Q.H. Pu and Z. Shi	4244
Dynamic Response on Earthquake Analysis of Bridge Structure Isolated by Lead-Core Rubber Bearing H.X. Yang, H.B. Wang, B.K. Li and J.G. Yao	4251
Seismic Performance of Concrete-Filled Square Tubular Column and Reduced Steel Beam Joints Y.L. Guo and X.Y. Yao	4257
Dynamic Response of Shallow Buried Tunnel Subjected to SH Wave Z.G. Chen	4265
Optimum Control System for Seismic and Aerodynamic Flutter Response of Cable-Stayed Bridge Using Magnetorheological Dampers E.K. Mohamad, S. Raafat and K. Younis	4269
Wind Loading and Wind Effects on the Roof of Harbin West Railway Station D. Wu, Y. Sun and Y. Wu	4280
Wind Loads Simulation of Tall Building Structure Subjected to Wind-Structure Interaction W.B. Bao, Y.Y. Hu and Y. Cui	4286
The Equivalent Damping Ration in Capacity Spectrum Method J. Zhang, D. Gao and Z. Chen	4290
Elastic-Plastic Time History Analysis of Self-Anchored Cable-Stayed Suspension Bridge F. Miao, L. Shi and Z. Zhang	4295
A Study on Dissipation of Cumulative Hysteretic Energy in Reinforced Concrete Frame Structures M.S. Guan, D.J. Han, H.B. Du and X. Wang	4301
Research on the Wind Environment around the Wenyuan Building in Tongji University L. Yang	4309
Study of the Analysis Methods of Wave-Passage Effect Based on ABAQUS J.Y. Zhang, Z.G. Mu and M. Gan	4316
Analysis of Flutter Stability of Cable-Stayed Bridge with Single Cable Plane H.L. Wang, Z. Pan and R.B. Jiang	4320
Study on the Method of Structural Seismic Performance Evaluation Based on the Damage Spectra J. Teng and H.B. Tu	4324
Seismic Performance Evaluation of SRC Frames Based on Incremental Dynamic Analysis Q.W. Wang, Q.X. Shi and J.J. Men	4331
Nonlinear Numerical Simulation of Shaking Table Tests of a RC Frame-Shear Wall Model T. Wang, J.J. Sun and L.Y. Meng	4336
Research on Seismic Isolation Properties for DFPS System N. Ge, H.B. Chen and X.G. Wang	4342
Research on Simplified RC Frame Column Model under Blast Load X.G. Wang, N. Ge, C.M. Wang and Y.P. Su	4346
Evaluation of Intensity Measures for Pulse-Like Ground Motions J. Zhou, K.L. Chen and L.H. Zhao	4350
Probability Distribution Analysis of Structural Response under Non-Gaussian Wind Loads J. Li and X. Wang	4356
Analysis of Dynamic Response of High Rockfill Embankment under Seismic Loads C.Z. Yang	4363
A New Type of Hybrid-Passive-Damper A.R. Liu, Q.C. Yu, Y. Yao and Y.Z. Guo	4367
Effect of Pounding at Expansion Joints on Seismic Response of Long-Span Suspension Bridge under Strong Earthquakes Y.L. Deng and X.J. He	4373
Wind Load Time-History Simulation Study Based on Neural Network W.B. Hu and Q. Li	4378
On Wind-Induced Vibration Respons of Tall Building with Wind-Structure Interaction W.B. Bao, Y. Cui and Y.Y. Hu	4385

Wind Load on Complex-Shape Building C.Q. Wang, Z.L. Li, Z.T. Yan and Q.K. Wei	4389
Comparison and Research on Seismic Performance between Guidelines for Seismic Design of Highway Bridges and Eurocode 8 for Seismic Design of Bridges B.Y. Lu, B.Q. Liu, M. Liu and G.H. Xing	4395
Dynamic Analysis of Slanting Type Five-Span Continuous CFST Arch Bridge without Wind Tied-Bracing H.L. Wang, X.L. Yang, Q.C. Ren and P. Dong	4401
Prestress Rubber Isolator and its Mechanical Properties L.H. Zou, K. Huang, W. Zhang, Y. Rao and L.Y. Wang	4405
Research on Blast-Induced Seismic Action Z.X. Yan, T. Bao and H.Y. Wang	4415
Effects of Spatial Variable Ground Motions on the Seismic Response of Base-Isolated Building Y.Q. Lei and Y.F. Du	4422
The Study on SMA Pseudo-Rubber Metal Damper's Control Efficiency on Aseismic Pounding in High-Pier Bridge in Shaking Table Testing Q.L. Meng, M.Z. Zhang and G.L. Zhou	4429
Research on Prediction Method of Steel Frame-Reinforced Concrete Shear Wall Hybrid Structure Earthquake Response Based on Energy Concept X.Z. Pei and W. Wang	4442
Geotechnical Seismic Isolation System - Experimental Study W. Xiong, H.H. Tsang, S.H. Lo, S.P. Shang, H.D. Wang and F.Y. Zhou	4449

9 Smart Structures

Parameters Analysis of Train Running Performance on High-Speed Bridge during Earthquake Y.S. Lin, L.H. Xin and M. Xiang	4457
Design for Composite Liners of Landfill under Alternating Cycles of Wetting-Drying and Freezing-Thawing H.Y. Wang	4464
Preparation of Residual Soil Samples by Using Modified Method N.H. Baharudin, A. Kasa, Z. Chik, A. Adnan and M.R. Taha	4470
Research on Anti-Rutting Performance of High Modulus Asphalt Concrete Pavement W. Ouyang, G.F. Yu and F.F. Zhu	4474
Position Determination in Three Dimensional Structural Testing System X.F. Wang, F. Xing, M. Obata and Y. Goto	4478
Analysis of a Heat Flux over a Region with a Crack near a Rigid Inclusion X.F. Wang, F. Xing and N. Hasebe	4482
Calculation of Safety Factor of the Slope under Horizontal Seismic Forces Based on the Inclined Slice Method H.Y. Ge, J.S. Tu and J.G. Wang	4486
Gradation Segregation Control in Asphalt Pavement Construction Y.L. Ren	4492
Factors that Contribute to the Generation of Construction Waste at Sites S.N. Mokhtar, N.Z. Mahmood, C.R. Che Hassan, A.F. Masudi and N.M. Sulaiman	4501
Effect of NH₄H₂PO₄ Content on Properties of the Mullite-Based Investment Materials G.L. Yu, N. Li, Y.S. Li and Y.N. Wang	4508
Research on the Factors Affect the Settlement of Soft Pile in Double-Layered Foundation S.M. Zhang, K. Yu, Z. Ding and H.M. Yang	4512
Simplified Method of Active Earth Pressure for Special Inner Support Structure Z.M. Zhang, K. Fang and X.W. Liu	4520
A Destructive Field Study on the Behavior of Pile under Ten S.M. Zhang and G. Wei	4524
Impact of Mandatory Medical Insurance on Construction Contractors in Saudi Arabia A.M. Alsugair	4529

10 Other Related Topics

Experimental Study on Performance of Pressure Sensor and Similar Material Model S.J. Chen, B. Li and W.J. Guo	4537
Axial Strength of Concrete-Filled Square Steel Tubular Columns Reinforced by Inner Circular Steel Tube X.Z. Li, X.Y. Wei and J.H. Zhao	4542
Seismic Performance on Dumbbell-Shape Connection between Steel Beams and Rectangular Concrete-Filled Tubular Column X.L. Wang and Q. Li	4546
New Passivating Method to Galvanized Zn Coatings on Steel Substrate Y.Y. Fan, Y.H. Jiang and R. Zhou	4555
Nonlinear Analysis on Reinforced Concrete Frame Joints under Thermal-Stress Coupling Y.Z. Wang and C.G. Fu	4559
Quantification Methods for Construction Waste Generation at Construction Sites: A Review A.F. Masudi, C.R. Che Hassan, N.Z. Mahmood, S.N. Mokhtar and N.M. Sulaiman	4564
The Seismic Analysis of Kiewitt Shell Based on the SMA Three-Dimensional Isolator J.L. Wang and H.Q. Liu	4570
The Research on Preparation of a New Building Material with EMR and their Properties Y. Wang, W.H. Ye and H.B. Liu	4575
The Analysis on how the Polypropylene Fiber Reinforced Concrete Works S.J. Wang, X. Zhu, W. Wang and J. Li	4580
Experiment Study on Resistance of Ultra-High Performance Cementitious Composites Subjected to the Deep Penetration Scaled Earth Penetrator W.H. Zhang and Y.S. Zhang	4585
The Simulation and Role of Discontinuous Yield Behaviors of Material S.W. Hu	4590
Compressive Strength of Hardening Fluid Concrete by Explosion H.L. Wang, X.M. Li and J.X. Yu	4595
An Analytical Model of Stress-Transfer in the Nano-Composites with Debonding Interface W.L. Zhu, D.M. Luo, Y.L. Zhou and W.X. Wang	4599
Development and Application of High-Performance Self-Compacting Fair-Faced Finish Concrete under Complex Conditions C. Gao	4604
Study on the Cut-and-Fill Roadbed Reinforced by Triaxial Geogrid Q. Ma, J.J. Zheng and J. Zhang	4612