

Table of Contents

Preface and Conference Organization

Chapter 1: Structural Engineering

Optimization and Suggestions of Design for RC Frames with Special-Shaped Columns Based on Chinese Specification M.D. Wang and Z.Y. Ni	3
Structural Strength Analysis of Main Crane Pedestal of the Jack-Up Wind Turbine Installation Vessel X. Zhu, Y.S. Tang, F.X. Li and Y. Zhao	7
Wavelet-Based Multilevel Discrete-Continual Finite Element Method for Local Plate Analysis P.A. Akimov and M.L. Mozgaleva	13
Study on Mechanical Characteristic of Two-Layer Steel Plate Concrete Shaft Lining under Non Uniform Pressure H.B. Cai, H. Cheng and Y.C. Huang	17
Analysis and Design of Cable-Membrane Architectural Structure N. Li and J. Ji	22
Development Status of Modern Bamboo Structure Building J. Guo, J. Tang, Y. Wen, J.L. Zhang and Y.S. Li	26
Mechanics Analysis and Construction Method of Prestressed Concrete Pipe W. Wu and J. Ji	30
Wind Loadings on the Low-Rise Buildings around the Hillside in Atmospheric Boundary Layer J.H. Chen and C.C. Chou	34
Simulation Analysis on Mechanics of Large-Span Enclosure Steel Structure Used in the Subway Station W. Wu and J. Ji	38
An Engineering Mechanics Based Approach to Predict Safety of RC Columns under High Temperatures Y. Yao	42
Wind-Induced Dynamic Analysis and Construction Measures of Large Diameter Spherical Tank B.H. Xu and J. Ji	46
Push-Out Test on Shear Connectors Embedded in UHPC J.S. Kim, S.H. Park, C.B. Joh, J.D.K. Kwark and E.S. Choi	50
The Influence of Initial Guy Cable Prestress on Single-Mast Guyed Towers Mechanical Properties W.G. Yang, K. Zhang, Z.Q. Wang and Y.Q. Ge	55
Finite Element Analysis on Crack Resistance Behavior of the Abnormal Joint of SRC Column and RC Beam J.N. Zhu, K.J. Yang, X.W. Li and R.W. Li	61
Method for Evaluating the Flexural Stiffness Bar of Reinforced Concrete Structures E. Fenollosa, A. Alonso-Durá and V. Llopis	67
Shear Strength of Connections between Concrete Filled Steel Tubes and Beams L. Jian	75
Impact Response and Failure Mode for Single-Layer Geodesic Spherical Domes under Impact Load D.Z. Wang, F. Fan, X.D. Zhi and J.W. Dai	80
Research on the Stiffness of Concrete Filled Steel Tubular Column and Steel Beam Joint with Stiffening Ring L. Jian	85

Preliminary Research on Mechanical Behavior of Steel Frame Filled with Steel Plate Shear Wall after Exposure to Overall Stage of Fire X.K. Liao, F.F. Wei and L.H. Qu	90
Bearing Capacity Calculation of Full-Scale Reinforced Concrete Beam-Column Joints Based on a Strut-and-Tie Model Z.B. Li, F.F. Sun, E.W. Guo and W.J. Wang	95
Research on Ultimate Moment of Top-and-Seat Angle Connections in Semi-Rigid Steel Frames G.H. Li, C.Z. Qi and J. Luo	99
The Correction of Estimation Theory on Cable's Parameters in Prestress-Mega-Brace Steel Frame Structure Y. Wang, S.Q. Yang and W.J. Zeng	104
Design Recommendation for Large Depth-to-Span Ratio and Opening of Single-Layer Spherically Lattice Shells J. Zhang, Y. Shi and G. Xie	109
Study on Influence of Temperature to Section Deformation of Steel Box Girder during Cantilever Installation Z.S. Li, J.Q. Lei, K. Zhang, Y. Xiao and D.J. Lin	114
Dynamical Model Updating Based on Gradient Regularization Method H.L. Xu, J. Xiao and Y.X. Zhang	118
Comparison and Analysis of the Artificial Boundary in Homogeneous Elastic Semi-Infinite Foundation P. Qiang and S. Wu	122
Time-Domain Analysis for Structure Dynamic Response Induced by Human Y.H. Wang and N. Yang	126
Experiment Study and Nonlinear Analysis of a New Skip-Floor Staggered Shear Wall Structure for High-Rise Buildings J.X. Liu, H.N. Wang, P. Li and M.C. Zhu	131
Finite Element Modelling of Concrete-Filled Steel Tube Reinforced Concrete Stub Columns under Axial Compression Z.B. Wang and L.Y. Liu	138
Research on Non-Destructive Testing for Defects of Steel Bar in Concrete J. Yang, W.H. Yuan and J. Tan	143
Numerical Simulation on Bearing Capacity of Steel Reinforced Light Aggregate Concrete Beam J.J. Zhang and Q.Y. Zhang	148
Parametric Analysis on Shear Lag Effects of Box-Girder Beam S.F. Ma and X.D. Zhang	152
Research on the Mechanism of Prestressed Loss for Curving Hole of Prestressed Concrete Structure Caused by Frictional Resistance S. Zhang, K.Y. Zhang, B.Y. Xie and Z.L. Fan	156
Study on Shape Coefficient of Three-Parameters Power Model W. Liu and G.P. Shu	164
Out-of-Plane Stability Analysis of U-Section Pin-End Steel Arch K.T. Xi, J. Li, T.G. Zhou and Q.X. Xu	169
Research on the Joint of Concrete-Filled Steel Tubular Column and Steel Beam Y.Z. Yin and Y. Zhang	174
Research on Dynamic Characteristics of Isolated System for Irregular Structures W.M. Xiang, X.C. Zheng and Y.J. Zhou	179
Calculations of the Elastic Modulus and Internal Stresses of Orthogonal Symmetric Laminated Plates Y.R. Li, H.B. Jiang and Z.Q. Cheng	191
Design of a Steel Pipe Truss for a Hot Spring Spa S.L. Hou, X.D. Yang and M.D. Wang	195
Reinforcement and Fiber to Induce Ductile Behavior of Ultra High Performance Steel Fiber Concrete H. Dong and S.L. Feng	199
Analysis of Transmission Tower Structure with Pushover Method K. Qin, Z.G. Xu and C.G. Deng	203

Analysis of Glass Elements Fasted into the Steel Frame E. Rykalová	208
On the Nodes' Anti-Crack and Load Bearing of SRHC Interior Joint with Different Axial Compression Ratios J. Peng, D.X. Zhang and J.K. Zhang	213
Plastic Analysis on the Semi-Rigid Steel Frame-Composite Steel Plate Shear Wall Structure X.T. Peng, Y.Y. Hou and L. Xia	219
Parameters Study of Steel Concentrically-Braced Frames Using IDA Z.Q. Dong, G. Li and H.N. Li	223
To Improve the Appearance Quality of Concrete Special-Shaped Frame Column H.Z. Zhang, F. Pan, Z.H. Zhang and C.Y. Cheng	227
Flexural Behavior of Prestressed Concrete Composite Slab with Corrugated Steel Web H.T. Hou, Z.L. Lv, H.N. Liu and Y.F. Sun	231
Buckling Analysis Method and Application of a Square Steel Tube Member with Initial Geometric Imperfection under Axial Compressive Load and Bending Moment P. Niu, X.C. Wang, C.F. Jin and Y.Q. Zhang	237
Theory Analysis on Buckling of a Square Steel Tube Member Strengthened by CFRP with the Initial Imperfection C.F. Jin, P. Niu and Y.S. Zhao	241
Study on a New Kind of Pile-Stinging Prestressed Concrete Pipe Pile X.T. Zhao and X.S. Yin	246
The Determination of Friction Coefficient between Parallel Wires in Stay Cables H. Li	250
Analysis of Composite Timber-Concrete Ceiling Structure by Finite Element Method D. Mikolášek, O. Sucharda and J. Brozovsky	254
Test Study on the Mechanical Behavior of Recycled Aggregate Concrete Wall-Beam M. Zhang, X.J. Fu, Y. Wu and H. Sun	260
Finite Element Analysis of Cold-Formed Lipped Channel Columns with Web Stiffener M. Chen, Z.K. Liu and Z.Q. He	264
The Mechanical Behavior Analyses and Optimization on Large Wind Turbine Frustum Tower Structure C.Y. Gao, Z.Y. Gong and B. Li	270
Experimental Study on Mechanical Behavior of Wind Turbine Frustum Tower B. Li, C.Y. Gao and H.L. Sun	275
Experimental Research on Steel Frame Structures of Mobile Buildings X.F. Cai, M.Y. Lian, Z. Zhang, Y.C. Ma and J.Z. Zhou	280
Effects of Geometrical Factors on Wind Pressure Characteristics of Cylindrical Roofs with Wind Tunnel Tests B. Chen and Q.S. Yang	284
Buckling Analysis of Stiffened Plate with Local Imperfections under In-Plane Bending Q.F. Chen and M.Y. Liu	290
Research and Building of Ontology Base for Structural Experiment X.H. Zhang, L.J. Zhao, H.X. He, R.H. Di and W.M. Li	297
Research on the Nonlinear Stability of the Steel Spatial Arch Truss with 120m Span and 0.2 Rise-Span Ratio J. Liu, H.W. Li, Y.N. Sun and X.F. Shu	305
Parameter Influence Analysis of Stability for Suspendome Structure K.R. Shi, Z.R. Jiang and Z.J. Ruan	309
The Calculation of Flexural Capacity of Reinforced Concrete T-Section Beam under the Influence of Fire M. Su and H.J. Gong	315
Study on Flexural Stiffness Reduction Factor of Reinforced Concrete Column with Equiaxial T Shaped Section X.L. Feng, M. Shen, X.Y. Kong, J. Zhang and P.F. Luo	319
The Preliminary Calculation Process of Strut-and-Tie Model H.J. Gong and M. Su	325
The Alcultation Method of Stable Bearing Capacity of Portal Frame X. Chen and H.M. Li	329

Axial Compression Performance Research of RPC Filled Steel Tube Columns Based on the Unified Strength Theory	
Q. Zhu, J.H. Zhao, Y. Li, P. Wu and S. Wang	337
Influence and Analysis on the Bearing Capacity of Reinforced-Concrete-Frame Node in Beam and Plate's Constraint	
T.H. Yang, X. Yu, J.W. Gong, B. Tang, Y.Z. Zhong and X.C. Gong	342
Spectral Characteristics and Correlation of Dynamic Wind Loads of a Typical Super-Tall Building	
L.H. Zhi	347
Finite Element Analysis of Reinforced Concrete Beam-Column Joint under Low Cyclic Loading with Different Load Systems	
H. Ma, X.Y. Sun, Z.B. Li, W.J. Wang, F.L. Zhang and J. Fu	351
Study on Mechanical Property of Reinforced Concrete (RC) Beams under Sea Water	
X.K. Yan, X.S. Chen and P. Chen	355
Study on Ductility Performance of T-Shaped Section Steel Reinforced Concrete Columns	
X. Wang	359
Experimental Research on Load-Bearing Capacity of Frame Columns with Construction Joint under Low-Cyclic Reversed Loading	
X.K. Yan, C. Dong, P. Chen and K. Ma	363
Study on Mechanical Behavior of Steel Plate Support with Oval Bolt Hole in Space Frame Structure under Combined Action of Shear Force and Tensile Force	
M.H. Wang, Y.Y. He and Y. Chen	367
Three-Dimensional Dynamic Analysis on Soil-Structure Applying Mixed Linear-Nonlinear Substructure Method	
N. Jiang and F. Wang	372
Study on Plastic Hinge Length and Limit Curvature of RC Column	
Y.P. Xie, L. Jia and G. Sun	378
Seismic Strengthening of Masonry School Building with Steel Mesh Mortar Splint	
H. Wu, S.C. Zhao and H. Xu	382
Study on Dynamic Characteristics and Parameter Sensitivity of Three Spans Prestressed Continuous Beam	
L.N. Shi, H.X. He, W.M. Yan, Y.J. Chen and D. Zhang	386
Research Progress on Bending Strength Calculation of Biaxial Compression-Bending Reinforced Concrete Column	
C.Y. Liu, Z.B. Li, S. Qu, X.J. Zhou and X.P. Wang	392
Influence of Concrete Strength of the Core of the Joints on the Holistic Resistant Behavior of Super High-Rise Structure	
Z. Yang, X. Yu and Y.Z. Zhong	396
Stimulation Analysis of High Temperature Bearing Capacity of Steel Reinforced Concrete Column Strengthened by CFRP	
C.Z. Qiu and G. Yang	401
Bend-Bearing Capacity of Concrete-Filled Square Steel Tube and T-Beam	
W. Wei, L. Peng and L.G. Wang	406
The Static Wind Load Research of a Flat Box Girder Based on the Numerical Wind Tunnel	
N. Li and J.X. Yang	410
Bending Test of the Composite Steel-Timber Beam	
M. Fujita and M. Iwata	415
Analysis and Prospect of Size Effect on Normal Section Bearing Capacity of Reinforced Concrete Column	
Y.P. Xie, L. Jia and G. Sun	422
Towards Light-Weight Composite Construction: Innovative Shear Connector for Composite Beams	
S.O. Bamaga and M.M. Tahir	427
Study on Failure Mechanism of Reinforced Concrete Frame with Construction Joint	
X.K. Yan, K. Ma, S.D. Wang, Q.Q. Chen, X.L. Hou and L. Qin	434
Failure Mechanism of a Steel Frame under Oblique Seismic Action	
Z.B. Li, L.F. Liu, H.T. Wang and W.J. Wang	438

Analysis and Research on Reinforcement and Reconstruction Method of Adding Shear Wall for Multi-Story Frame Structure	
C.Q. Liu, J.J. Li, C. Chen, Z.B. Tu, X.D. Sun and B. He	442
Simulation Analysis of Longitudinal Shear Bond Performance of Lightweight Aggregate Concrete Composite Slab	
Y.K. Zhang and Z.Z. Song	446
Fatigue Stiffness Analysis of Corroded RC Beams	
Y.H. Chen, M.J. Chen, L.Y. Sun and X.M. Wang	450
Mechanical Behavior Research for the Interior Joint of New Light-Weight Portal Rigid Frame (II)	
Z. Huang, L.Z. Jiang and W.B. Zhou	454
Experimental Research on the Thermal Damage of Concrete	
C. Chen, Y.S. Luo, S.H. Tang and X. Zhang	460
Dynamic Stability Analysis of Steel-Concrete Composite Ribbed Shell under Vertical Step Loads	
W.B. Hu, S.L. Meng and Y.Z. Chang	467
Discussion of the Masonry Structure Building Underpinning Method	
K.Z. Zhao and Y. Han	471
Study of Free Vibration Characteristic of Continuous Box-Girder Based on Hamilton Principle	
W.B. Zhou, L.Z. Jiang and Z. Huang	476
The Research of Test on Steel Frame Beam-Column Connections with Rib Top and Seat Angle and Angle with Two Web Node Energy Consumption	
W. Liu, G.Y. Wang, X. Zhang and H.T. Yu	483
Application and Discussion of Pressure Grouting Technology in Bored Piles	
Y.Q. Feng and L. Zhang	487
Buckling Behavior of Elliptical Shells of Changing Thickness under Uniform Axial Compression	
L. Wan and L. Chen	492
Mechanical Properties of Roller Compacted Concrete under Triaxial Stress State	
H.L. Wang and Y.Q. Ren	497
Buckling Analysis of Short Cylinders of Uniform Thickness under Uniform External Pressure	
L. Chen	501
Analysis of Mechanics Characteristics of Prestressed Steel Column in High Temperature (Fire) Condition	
Q. Sun, Y. Hu and D.T. Wang	505
Mechanical Mechanism of the Post-Grouting Pile	
B. Wang and J. Zhang	510
Deformation Characteristics of Roller Compacted Concrete under Triaxial Stress State	
H.L. Wang and Y.Q. Ren	515
Analysis of Mechanics Characteristics of Prestressed Steel Beam in High Temperature (Fire) Condition	
Q. Sun, W. Tian and D.T. Wang	519
Dynamic Analyses of Semi-Rigid Connection Low Yield Point Steel Frames	
C.L. Ma, S.D. Sun and X.L. Cao	524
The Application of Endochronic Damage Constitutive Model in Cracking Analysis of Mass Concrete	
H.L. Wang and Y.Q. Ren	528
Structural Damage Assessment by an Improved Flexibility Sensitivity Method	
F.J. Lu, Q.W. Yang, J.H. Li, W.M. Jin and Y. Yao	532
Seismic Design of the High-Rise Building Structure and Sustainable Development	
J.Y. Ma, F. Ma, C.S. Hu and Z.X. Wen	536
Experimental Investigation on Flexural Bearing Capacity of Concrete Beams Reinforced with CFRP-PCPs Composite Rebars	
J.F. Liang, M.H. Hu and Z.P. Deng	541
Research on the Seismic Performance of Zipper Frames	
H.F. Yu, T.Y. Wang and L.B. Shi	545

Optimization System Design for Steel Structure Based on Advanced Complex Method J.J. Zhu, Y.R. Zheng, M. Gong and Y. Wang	550
Stiffness and Energy Dissipation of Steel Coupling Beam Embedded in the PSH2C and Normal Concrete Shear Wall S.W. Kim, W.S. Park, N.Y. Eom, H.D. Yun and Y.I. Jang	556
The Experimental Study on Mechanical Performance of Multi-Span Column-Supported Assembly Box Concrete Hollow Floor K.Z. Zhao and G.Y. Wang	560
The Calculation of the Two-Layer Beam Model on an Elastic Basis with Variable Modulus of Subgrade Reaction V.I. Andreev, A.V. Matveeva and E.V. Barmenkova	566
Comparison of Multiple Freeze-Thaw Cycles of High-Performance Concrete Test Beams and Concrete Beams Loaded Test Z.Q. Li, X.C. Zheng and X.H. Cong	570
Study for Dynamic Stability Behavior of I-Section Cantilever Beam under Axis Compressive Load Y.J. Chen and Q.Z. Luo	574
Numerical Study on Precast RC Wall Panels with Angle Steel Boundary Components X.F. Xu and T. Wang	578
Individual Anchored Strength Experimental Research for Prestressed End with Local Area Pressure P. Pang	583
Debonding Behaviors of CFRP Strengthened RC Beams with Weak Interfaces S. Li, X.G. Wang and X.G. Zhou	587
Experimental Study on Flexural Behavior of Different Damages Prestressed Concrete Hollow Slabs Strengthened with CFRP J. Han and Y. Liang	592
Study on Seismic Behavior of Large Bay Brick Masonry Structures with Fewer Internal Longitudinal Walls B.R. Ding, J.J. Sun, Z.W. Liu and K. Du	596
Mechanical Properties of New Type Cold-Formed Steel Box-Shaped Component Welding Section Members S. Wu	601
Research on the Axial Compressive Performance of the Concrete-Filled Steel Shear Wall with Binding Bars L. Chen and X.C. Li	610
Temperature Field Analysis of Steel Reinforced Concrete Column in Fire J.H. Chen, C. Ma, J.H. Li and Q. Qian	615
Predictive Method for Economic Indicators of High-Rise Frame-Tube Structures J.J. Zhu, L. Zhang and Y.Y. Peng	619
The Static Stability Analysis of Single-Story Steel Frames with I-Section Columns Y.C. Liu, W.F. Zhang, J. Ji, D. Xie and J. Du	626
Effects of Crossing Angle on the Behavior of Buried Steel Pipelines Crossing Fault N. Hassani, M. Shadab Far and H. Kordestani	630
Analysis on the Solar Collector Bracket with Finite Element Method J.B. Gu and Y. Li	637
Design on a Total Precast Concrete Parking Structures X.H. Fan, R.Q. Ma and M. Liu	641
Long-Term Deformations of Steel-Reinforced Concrete Columns under Sustained Axial Loads Z.Y. Chen, Y. Wang and J.Q. Wu	645
The Effect of Confinement Method and Specimen End Condition on Behavior of FRP-Confined Concrete under Concentric Compression T. Vincent and T. Ozbakkloglu	650
The Antiknock Property Research of L Steel Reinforced Concrete Special-Shaped Column in the Different Thicknesses of Steel Bone in Blast Loads P.Y. Xu, L.L. Ren and Y.F. Xu	654

An Improved Analysis Method on the Deformation Shape of Curved Plate Girders by Cold Bending	
R.H. Wang, J. Zhu and L. Lu	658
Dynamic Response Analysis of the T-Shaped Steel Reinforced Concrete Column under Different Impact Conditions	
S.Y. Bai, J. Jiang and Y.F. Xu	663
Theoretical Analysis of the Impact on the Rod Bending about the Axial Force	
Z.D. Li and D. Wu	667
The Hysteretic Property Study of Cross Steel Reinforced Concrete Special-Shaped Column in Different Axial Compression Ratios	
Y.F. Xu, R.L. Li and S.Y. Bai	671
Study on the Diaphragm Effect of the Beam Type Bridge	
L. Yang, Z.D. Li and R. Peng	675
The Element Analysis on Hysteretic Property of Cross Steel Reinforced Concrete Special-Shaped Column in Different Rates of Steel Bone	
R.L. Li, Y.F. Xu and S.Y. Bai	679
Failure Mode Attribution Analysis of PBL Shear Connector	
W.J. Zhang, E.X. Du, B.Z. Liu and S.C. Yang	683
Axial Compression Ratio on Seismic Performance of CFPR Steel Tube Composite Columns Filled with Steel Reinforced Concrete	
Y.F. Xu, Y. Wang and S.Y. Bai	687
Design Method on Shear Behavior of Single Tapping Screw Connections in Cold-Formed Thin-Wall Steel Structures	
S.W. Wang and C.J. Wang	691
Summary of Study on Composite Concrete Slabs	
L. Wang and H.Y. Zhang	695
Constitutive Relationship of FRP Reinforced Column Plastic Hinge Zone Based on Pushover Analysis	
G.H. Sheng, F.S. Zhu, J. Zhang and G.S. Zhu	699
Research on Stability of Pretensioned Spherical Reticulated Mega-Structure	
Y.J. He, X.H. Zhou and Y.F. Zhang	704
Analysis of the Shock-Absorbing Performance of Buckling Restrained Brace for High-Rise Buildings	
J.X. Yuan, Q. Zhang, G.H. Qin and R.F. Liu	708
Calculation of Load-Carrying Capacity of Square Concrete Filled Tube Columns Based on Neural Network	
H.G. Gao, H. Cheng and X.F. Cui	713
An Experimental Study on the Flexural Behavior of Post-Tensioned Concrete Beams with CFRP Tendons	
W.T. Jung, J.S. Park and Y.H. Park	717
Encased-Steel-Reinforced Concrete Composite Beam and its Ultimate Strength Analysis	
Y. Suo, X.D. Li and W.N. Yuan	722
FEM Analysis and Experimental Research of Corner Joints in Gabled Frames	
Y. Wang, J. Ma and B.Y. Yu	726
Experimental Study on Lateral Stiffness and Dynamic Properties of Steel Drive-in Storage Racks	
B. Cheng and Z.Y. Wu	730
Hysteretic Behavior of Reinforced Concrete Coupling Beams with Diagonal Headed-Bars	
W.S. Park, Y.S. Chun, H.D. Yun, S.Y. Seo, J.K. Song and H.H. Lee	734
Experimental Analysis on Composite Wall Plate Cracking of Steel Structure in Yunnan Area	
J.W. Shen, Z. Tao, W.Z. Yu and Y. Zhu	738
FE Analysis on the Structural Behavior of Reinforced Concrete Beam Damaged by Fire	
S.Y. Seo and Y.G. Chung	743
Behavior and Design of Web-Slotted Cold-Formed Channels Experiencing Local-Distortional-Global Interactive Buckling	
S. Liu, Q.J. Ma and P.J. Wang	747
Axial Capacity of Steel Angles with Local Deformation	
J. Xie, X.D. Han and A.X. Ge	753

The Strength and Deformation Analysis on the Top Steel-Tube Truss Supporting System of Silo	
T.C. Wang, W.X. Wang, H.L. Zhao and Q.S. Li	760
Mechanism of the Frame-Supported Masonry Shear-Wall Structure with Inter-Story Isolation	
L. Lu and Y. Zhou	765
The Element Analysis on Hysteretic Property of Cross Steel Reinforced Concrete Special-Shaped Column in Different Concrete Strengths	
R.L. Li, Y.F. Xu and S.Y. Bai	771
Research on Practical Design Method of Single-Layer Lattice Shell Components	
F. Wang and X.R. Pan	775
ANSYS Simply Supported Deep Beams Based on the Study of Mechanical Properties	
Y.B. Liu and X.Z. Zhang	782
Deformation Characteristic Evaluation of Large Oil Storage Tanks under the Planar Inclined Foundation	
D.W. Ji, L.X. Wei and X.Y. Li	786
Research on Behavior of Rectangular CFST Stub Columns with Binding Bars under Axial Compression	
H.L. Liu and J. Cai	790
Structural Design of Yunnan Ruili Spa Resort Sightseeing Tower	
X. He, J.X. Song and W. Pan	798
Design Method of Horizontal Braces Unlocated at Middle of Columns with Fixed-Ended Column Base	
J.Y. Zhao and S.C. Teng	803
Finite Element Analysis on Frame Structure of Light Steel Temporary Buildings	
Z. Zhang, X.F. Cai, Y.C. Ma and J.Z. Zhou	808
FEM Analysis of Long-Span Steel Structure Considering Bearings Size Effect and Friction Characteristic	
C. Cui and W.B. Sun	812
The Application of Plate Buckling Theory in the Steel Structures	
Z.L. Wu and H.J. Zheng	818
Analysis on Bearing Capacity of Double Back-to-Back Cold-Formed Thin-Walled C Steel Composite Column with Gusset Plate	
M. Chen, W.W. Lu and K. Liu	821
Finite Element Analysis of Wind Turbine Tower	
X.L. Li and L.M. Ren	825
Advances in Experimental Study on Seismic Performance of Double C Steel Joints with Gusset Plate	
M. Chen and F.F. Sun	829
Experimental Study on Behavior of Shear Walls Built with Precast Two-way Hollow Slabs for Different Axial-Load Ratios	
J.L. Liu, H.C. Cui, M.J. Chu and J.Q. Hou	833
Analysis of Residual Displacement of Combined Base Isolated Structure	
M. Gu, F.Y. Zhang and S. Xu	838

Chapter 1: Structural Engineering

Research on Bearing Capacity Calculation of Parabolic Steel Arch Structure under Full-Span and Half-Span Loading	
Y.B. Jiang and M.W. Xie	845
The Comparative Analysis on Calculation Methods of Vertical Seismic Response to Suspended-Dome Structure	
L. Chen, D.L. Lu and X.G. Yin	849
The Application of ABAQUS in Cast-Steel Joints Elastic-Plastic Analysis	
F. Wang, Z.F. Luo and S.H. Mo	854
Numerical Simulation of Bond Behavior for Adhesive Anchor in Steel-to-Concrete Connection Exposed to Fire	
Q. Xie, C.J. Zhu and H.X. Ju	860

Comparative Analysis of Finite Element Method and Analytical Method on the Truss H.B. Liu, Y.L. Liu and L.H. Zhang	865
Nonlinear Finite Element Analysis on the Abnormal Exterior Joint of Steel Reinforced Concrete K.J. Yang, J.N. Zhu and X.W. Li	869
Calculation Method of Deformation and Inner Force of a Sheet Pile Wall with Relieving Platform Y.L. Hu, G.N. Liu and Y.M. Zhao	875
Numerical Simulation of Deep Beam in Short-Leg Shear Walls Structure B.H. Jin and Z.Y. Zhao	881
Low Tension-Tension Cycle Fatigue Properties of 301 Stainless Steel Thin Sheets S.M. Cui, R.D. Wang, Y.J. Liu, T. Long, W. Zhang and Q.Y. Wang	887
Analysis and Test of the Inflatable Tubes of ETFE Foils Y.F. Chen, W.J. Chen, L.G. Wang and F.L. Zhao	892
Effect of Cushion Layers on Mechanical Characteristics of Spiral Case Structure in Hydropower Station B. Liu, J.H. Liu and Z. Wang	897
Nonlinear Numerical Analysis of Frame Side Joint Z.W. Wan, Y. Zou, J. Kong and C. Li	901
Numerical Analysis and Field Observation of Drawn Force of Sliding Pipe Method for Ultradeep Diaphragm Wall C.H. Zhao, W. Cui and B. Ma	906
Study on the Effect of Grid Column on Seismic Performance of Improved Multi-Ribbed Slab Structure K. Qian, M. Wang, J. Zhang and Q. Yuan	910
Key Technology Analysis of Construction of Joint-Pipe Method for Ultra-Deep Diaphragm Wall C.H. Zhao, W. Cui and B. Ma	915
Experimental Research of Cable in Plate Method P. Pang and X.S. Yin	919
Rationalization of Structural Stiffness of Offshore Platform with Rocking-Wall G.Y. Han, Z.W. Jiang, L.W. Nie and J.G. Zhang	923
Experimental Study on Relationship between Half-Cell Potentials and Load Carrying Capacity of Corroded Reinforced Concrete Shear Walls Z.H. Cui, D.J. Shen, C.B. Huang and M. Li	927
Introduction for Flexible Overall Hoisting Method for Extra Large Solder Ball Grid Roof H.Z. Chen, Y.L. Wang, X.Y. Zhang, G.K. Xie, R.Q. Ma and Q.L. Zhang	933
Relationship between Half-Cell Potentials and Load Carrying Capacity of Corroded Reinforced Concrete Beam-Column Joints M. Li, D.J. Shen, J. Yang and Z.H. Cui	939
Stability Analysis of a New Frame Formwork Support L.W. Nie, Z.H. Liu, G.Y. Han and J.G. Zhang	945
Numerical Analysis of Continuous Beam of Reinforced Concrete under Fire Y.L. Ma	950
Structure Seismic Response Analysis under Pile-Soil-Structure Interaction W. Zhou and M. Chen	954
The Failure Process Analysis of Reinforced Concrete Beams with Different Steel Reinforcement Ratio J.X. Yang and K. Huang	960
Study on Failure Trend of Double Column Deflection Machine Structure on Basis of Static Strength Analysis S.Y. Cao, L. Xuan and Y.S. Sun	964
Numerical Analysis on a New Type Cross-Shaped Frame Joint of Steel Reinforced Concrete Special-Shaped Column X.X. Zhang and W. Pan	969
Study on Failure Trend of Double Column Tri-Axis Deflection Machine Structure on Basis of Static Strength Analysis S.Y. Cao, B.H. Zhang and Y.S. Sun	975

Research on Adhesive Property of Reinforced Concrete Structure Strengthened with Near-Surface Mounted FRP Bars Y.F. Xu, W.T. Guo and T.F. He	980
Analysis of Ductility Features in Bearing Failure Process for Cable-Strut Arch Structures under the Load Combined Full Span and Half Span Loads Y.B. Jiang and G.Y. Liao	986
Study on Bend Performance of Binding Bars Prestressed Steel Box Concrete Beam C.L. Zhou and Q. Zhang	990
Research on Space Frame Structure in Regard of Member Initial Stress M.Q. Liu, J. Xu and X.X. Du	998
Strut- and- Tie Model Method for Partial Compression about Prestressed Tendon Constraint Concrete L. Ji and X.S. Yin	1004
An Experimental Study and Analysis of Full Process of External Prestressing CFRP Concrete Box Girder M.Q. Zhu, H. Pan, F.J. Wei and Q. Liu	1008
Study on Mechanical Performance of Wall-Column Subassembly in New Precast Reinforced Concrete Frame-Shearwall Structure H. Zhang, J.X. Tong, W.J. Zhao and C.Z. Sun	1014
Simulation of Flexural Behavior of Reinforced Concrete Beams under Impact Loading A. Rouchette, W.P. Zhang and H. Chen	1018
Study on Thermal Crack Control of Multi-Tower Large Basement Structures Y.M. Zhang, T. Fan and G.S. Bian	1024
Experimental Study on Behavior of RC Beam Strengthened with Ridged Aramid Fiber Plate Strip S.S. Kim and C.H. Park	1028
Finite Element Analysis of Natural Vibration Frequency for Unbounded Prestressed Concrete Beams F.G. Li and Y. Zhao	1034
Transformation Design of a High-Rise Building X.D. Yang, Q. Wei and J.F. Li	1038
Experimental Study on Natural Frequency Variation Regulations of Simply Supported Externally Prestressed Concrete Beams G. Xue and C.G. Wang	1043
Seismic Time-History Analysis of Gravity Dam Based on Nonlinear Finite Element Method H. Zhu, G. Wang, Z.Y. Ma and Y.K. Su	1047
The Practical Calculation Charts to Determine Column Effective Length of Framework and Bent Framework Z. Sheng and D.H. Zhou	1052
Suspend-Dome Static Behavior Analysis X.Y. Dai, X.Y. Kong and L. Tian	1057
Model Test Research on the Concrete Creep and Shrinkage Effects on the Long-Time Deflection of Steel Concrete Composite Beam S.B. Zhang	1061
A New Designed Hot Tearing Apparatus Based on the Applied Forces R.F. Xu, H.L. Zheng, Y. Zhang, S.P. Ding, S.P. Zhang and X.L. Tian	1066
Effect of Temperature on Electrochemical Behavior of Stainless Steel in Phosphoric Acid W. Shi, S. Xiang, Y.L. Li, M. Yang, Y.N. Hu and Q.D. Wang	1072

Chapter 2: Monitoring and Control of Structures

Stress-Induced Magnetic Signals for Structural Health Monitoring of Civil Infrastructures S. Bao, H.F. Lou and L. Lin	1079
Damage Detection for Cantilever Beam Structures Using Two-Stage Method C.H. Li, Q.W. Yang and X. Shen	1084
Structural Health Monitoring for Steel Structures X. Wang and W.B. Hu	1088

Application and Improvement of PSO Algorithm in Structural Damage Diagnosis H.Y. Guo, Q.B. Wu and Z.L. Li	1092
Application of Strain Mode Difference in the Damaged Beam Damage Detection Y. Wang, J.Q. Wu, F. Ye and K. Ma	1097
Crack Survey and Cause Analysis of a Complex in Huatugou of Qaidam Basin Q. Zhang and W.L. Pu	1102
Analysis of Effective Pre-Stress and Stiffness of the Continuous Rigid Frame Bridge in Service Based on Inversion Theory Z.N. Zhang	1108
Vibration Control of Offshore Platform Based on Outrigger Damping System Y.H. Sun, Q. Niu, L.W. Nie and J.G. Zhang	1112
Nondestructive Testing Method of Vertical Prestressed Finishing Twisted Steel Tension J.J. Cai, J.L. Sun and F. Zhang	1117
Theoretical Research on Two Improved Optimal Sensor Placement Methods W. Liu, W.C. Gao and H. Li	1122
Identification of Fracture Damage of the Space Truss Structure Based on the Combined Application of Wavelet Analysis and Strain Mode Method Q. Wang, H. Liu and Q. Wang	1130
Analysis on Defects Location during Rebar Pull-Out Test by Acoustic Emission Technique L.J. Ouyang, B. Ding, W.Z. Chen and Z.D. Lu	1138
Research of Vertical Prestressed Losses during Construction Process of PC Continuous Box Girder Bridge K.C. Zhang, J.Z. Chen, H.Q. Liu and Y. Zheng	1142
A New Magneticrheological Damper Nonlinear Bingham Hysteretic Model and ANSYS Implementation Z.X. Zhang and F.L. Huang	1146
Deformation Monitoring and Evaluating Technology for Subgrade of Unballasted Track on Lan-Xin Passenger Dedicated Line Q. Su, W.C. Zhang, L.S. Zhang and J. Zhang	1152
<i>In Situ</i> Monitoring Early-Age Properties of Concrete Retaining Wall by Fiber Bragg Grating Monitoring System G.J. Zhang, L. Wang and Y.Z. Su	1159
Nondestructive Testing and Static/Dynamic Loading Detection of a Diseased Fabricated Hollow Slab Bridge X.K. Li, Z.H. Wang, Z.L. Yang and S.B. Zhao	1163
Multi-Sensors Based Inclines Measuring System M.C. Lu, Y.C. Wang, C.P. Tsai, W.Y. Wang and S.F. Su	1168
FBG Earth Pressure Sensors Applied in Surrounding Rock Pressure of Tunnel Z.C. Cai, C. Li, Y.Y. Guan, W.F. Chen, L.J. Guo, F.Y. Chen, Z.G. Zhao and T. Xie	1173
Monitoring Data Analysis of Piezometer in Xiao Langdi Sediment Tunnels X.Z. Wang, J.F. Kang, C.N. Sui and X.P. Xu	1179
Experimental Research on Embankment Hidden Defects Monitoring Using Distributed Optical Fiber Sensor Y. Zhou, P.Y. Zhu and S.Y. Li	1183
The Low Strain Detection Test to Pile-Foundations of a Communication Hinge Engineering H.P. Shao, C.L. Chen, X.L. Wang and Y.P. Zhu	1189
An Application of Stored Procedures in a GPS-Based Slope Online Monitoring System for Open-Pit Mine Z.S. Liu, R.Q. Gao, M. Chen, H.S. Yang, Q. Wang and Y.S. Zhou	1193
A Study on High-Rise Building Structure Selections Using Artificial Intelligence Methods L.Y. Ma, B.X. Gu and G.L. Liu	1198
Testing Technology for Grouted Density and Empty Hole of Prestressed Corrugated Pipe Based on Ultrasonic Wave Q.Z. Wang, H. Qian, S.B. Ma and T.F. Ma	1202
Monitor and Analysis of the Foundation Pit Combination Support of Jinan West Railway Station Ground L.X. Li, M. Gong and Y.J. Zheng	1207
Field Monitoring and Analysis of Reinforcement Concrete Slab T. Yao, Q. Tian, S.Z. Zhang, F. Guo and Y.J. Wang	1217

Concrete Damage Detection Based on Embedded Acoustic Emission Sensors F. Sha, D.Y. Xu, S.F. Huang and X. Cheng	1222
The Alignment Control of Large-Span Continuous Beam Bridge Cantilever Construction Method X.T. Peng, Y. Xiong, Y. Wu and D. Meng	1226
Comparative Study of Model Test and Numerical Analysis on the Temperature Monitoring of Mass Concrete Raft Foundation W. Sun, Q. Wang and C. Ge	1231
Selecting Single Optimal Excitation Position for Spatial Truss Structure's Damage Detection Based on Euclidean Distance J.J. Yan, L.M. Zhang, W.R. Liu, S.J. Du and M. Fan	1236
Construction Monitoring Technology Research on Large-Span V Structure Tied Arch Bridge T. Yin, W. Zhang, Y.B. Zhao and X.L. Sun	1240
Space Rigid Frame Damage Identification Method Based on Modal Analysis H.Y. Jia, P.F. Yue and X.F. Wang	1244
Thermal Gradient and Crack Monitoring of Concrete in Large Foundation during Construction J.Z. Wang, W.S. Cui, Y.H. Shi and L. Qin	1249
The Stability Research of Highway Bedded Rock Slope Based on the Stress Monitoring Y.J. Guo	1253
The Study on Theoretical and Experimental Hysteresis of GLQW-1 Frictional Damper B.Y. Ding, L. Cao, G.H. Dang and T. Xu	1257
Numerical Simulation of Bolt Looseness Monitoring Based on Impedance Method W. Sun and Y. Zhang	1264
A New Damage Alarm Index Based on Frequency Deviation for Structural Health Monitoring Y.S. Song, W.N. Ni and Z.G. Sun	1269
Effect of Backing Materials on the Performance of Cement-Based Piezoelectric Ultrasonic Sensors X.C. Xie, M.M. Li, D.Y. Xu, P.K. Hou and S.F. Huang	1273
Analysis of Group Pile Foundation Environmental Factors Based on Bayes Estimation T. Xue and J.F. Xu	1278
Theoretical Calculation and Experimental Study on Sung Torque and Angle for the Injector Clamp Tightening Bolt of Engine B.H. Xie, M.F. Fu and A.M. Li	1284
Analysis and Experimental Study of Concrete Strength Detection Y. Zheng, X.B. Jia, K.C. Zhang, J.Z. Chen and P. Wang	1289
Study on Seismic Response Control of Self-Anchored Suspension Bridge with TMD L.Z. Zhang, T.L. Chen and W. Xiong	1293
Design and Implement of the Urban Bridge Cluster Monitoring Online Assessment System L.Z. Xi, Y. Li and C. Zhou	1298
Back Analysis on Deformation of Concrete Faced Rockfill Dam Based on Prototype Monitoring S.W. Ji, L. Jiang and Q.H. Shi	1302
Arch Dam Deformation Prediction Model Based on PSO-SVM J.Y. Liu and H.Z. Liu	1306
Experimental Study of Infrared Thermography for Detecting Internal Defect of Mortar Finishing Layer L.Q. Feng, H.X. Wang, D.W. Yan and J.L. Liu	1312
Research on Dam Deformation Analysis Model Considering Multi-Factors H.Y. Wen, L. Zhou, G.Y. Chen, J.Y. Hu and M.L. He	1318
Research on Cable Force Testing Method of Cable-Stayed Bridge Model Test Y.Q. Li and Y.L. Du	1325

Chapter 3: Structural Rehabilitation, Retrofitting and Strengthening

The Research of Several Problems that Merit Attention in Use of Rebar-Planting Anchorage Technique for Reforming and Strengthening Buildings N. Lv and H.M. Li	1333
Analysis on Hysteretic Strain of Load-Carrying Strengthened RC Beams C.X. Li, Z.S. Ding, S.L. Yan and J.M. Chen	1337
A Study on the Quality Assessment System of Reinforced Concrete-Skein Reinforcement Method to Arch Bridges G.M. Li, J. Rui, B. Wang and Z.R. Wang	1341
A Study on the Quality Assessment System of External Prestressing Reinforcement Technology J.L. Xu, Z.L. Yi and J.J. Yang	1347
Structural Analysis and Consolidation Strategy of the Historic Mediceo Aqueduct in Pisa (Italy) M. Andreini, A. de Falco, L. Giresini and M. Sassu	1354
A Study on the Quality Assessment System of Substructure Reinforcement Method W.D. Zhang, Y.J. Xiao and J. Cheng	1358
The Experimental Study on Steel Crane-Girder before and after Reinforcement F.B. Cao, H.G. Wei and Z.H. Cheng	1364
Test on Slip Coefficient of High-Strength Bolted Slip-Critical Connections after Fire M.C. Zhu, Y.J. Jiang, G.B. Lou and G.Q. Li	1368
The Seismic Strengthening of a Middle School Teaching Building Q.X. Yue	1372
Overview of Consolidation Method and Application for the Culvert under the Small or Medium-Sized Earth-Rock Dams J.R. Xue, Y.Y. Zhang and X.Y. Shi	1376
The Research of SFRC Column Reinforced by FRP X.X. Li	1381
The Application of the Technology in Reinforced Frame Beam Complex Material H. Yue and S. Liu	1385
Collapse of the Historic City Walls of Pistoia (Italy): Causes and Possible Interventions M. Andreini, A. de Falco, L. Giresini and M. Sassu	1389
Temporary Preventive Seismic Reinforcements on Historic Churches: Numerical Modeling of San Frediano in Pisa A. de Falco, L. Giresini and M. Sassu	1393
Behavior of Pre-Cracked Reinforced Concrete Beam Strengthened with Prestressed CFRP Plate B. Wang, H. Peng and J.R. Zhang	1397
Study on Experiment of the Wire Rope Bottom Anchoring X.G. Cui, W. Yang and J.W. Ding	1404
Cracking Mechanism and Strengthen Method of Reinforced Concrete Hammerhead Piers G.B. Tang, T.N. Wang and F. Hu	1408
Study on Experiment of Terminal Fixture Connection of Steel Wire Rope X.G. Cui, J. Geng and J.W. Ding	1415
An Experimental Study on the Axial Compressive Behavior of Timber Columns Strengthened by FRP Sheets with Different Wrapping Methods L. Li, S.L. Yuan, J.F. Dong and Q.Y. Wang	1419
Analysis on Stiff Frame in Replacement of Closure Segment for Prestressed Concrete Cable-Stayed Bridges H.J. Li, D.Y. Lu and Q.F. Wang	1423
Analysis of Technology and Economy for Steel Structure Reinforced with Carbon Fiber Sheets J. Wang	1432
Experimental Study on Reinforced Concrete Profiled Pipe Culvert J. Zhang and X.Y. Hu	1436
Rapid Treatment Technique of Diseases of the Rocking Axle Bearing of Railway Simply Supported Beam Bridge J.J. Huang, Q. Su, L.C. Zhang, Y.J. Li and B. Liu	1440
Safety Analysis of Rural Buildings in Chaohu City Anhui Province F. Wang, S.H. Mo and Z.F. Luo	1445

Experimental and Numerical Investigation on Reinforced Concrete Beam-Column Joints X.Y. Wu and Y.Z. Li	1450
Model Test of Valve-Pipe Grouting Technology to Soft Ground X.G. Song, Y.N. Zang, Q.C. Chen, J.Q. Wu and H.B. Zhang	1454
Structural Optimization of Elevated Building Y.Y. Wang and C.C. Wang	1460
The Discussion about Improving the Bearing Capacity of Single Pile for Bored Pile in Sandy and Silt Layer Y.Q. Feng and Y.H. Wang	1469
Study on Flexural Toughness of Steel Fiber Reinforced Concrete in Dam Strengthening Project X.R. Dai, L. Zhu and J.H. Peng	1474
Virtual Reality Techniques for Ancient Building Protection and the Establishment of Database - Taking Foshan Zumiao as an Example Y.Q. Li and G. Zheng	1480
A Discussion about Construction Techniques to Improve Durability of Concrete Bridges in Alpine Regions J. Rui, G.M. Li, B. Wang and Z.R. Wang	1485
Concrete Bridge Structure Crack Analysis and Treatment Countermeasures K. Chen	1490
The Cause and Control of Cracks about the Fly Ash Foam Composite Light Wallboard Y.D. Sun and P.F. Hou	1495
Experimental Study on External Anchorage Technique for Strengthening of the Existing Bridges Y.J. Hu and Y.L. Du	1499
Study of Flexural Property of Prestressed Carbonfiber-Reinforced Plastics (CFRP) Reinforced Concrete Beams B. Wang and G.X. Men	1503
Experimental Investigations of Masonry Columns Strengthened by SGFRP under Eccentric Loads Z. Zhang, Q. Gu and Q.M. Yu	1509
Numerical Simulation of Masonry Walls Retrofitted by Prefabricated Reinforced Concrete Panels Y.Q. Zhang and T. Wang	1514
Study on Renovation and Appraiser of Beijing Hutong Buildings S.X. Hu, H.B. Liu and Z.Y. Yin	1519
Site-Test Research on Shearing Capacity of Bonding Interface between New and Old Concrete X.X. Li and Z.G. Yang	1523
Application of Buckling-Restrained Braces in Prefabricated Reinforced Concrete Frame H.N. Wang, H.B. Liu and J.F. Wang	1527
Seismic Performance of RC Short Columns Strengthened with BFRP B. Ding, L.J. Ouyang, Z.D. Lu and W.Z. Chen	1532
An Experimental Study on Mortar-Filled Buckling-Restrained Mechanism R. Teng, Y.D. Lei and T. Wang	1537
Testing Study on the Bending Capacity of Stone Beam Reinforced with CFRP X. Wei, D. Zhao and W.X. Zhang	1542
Preferred Selection on Strengthening Schemes of Arch Bridge Based on Fuzzy Analytic Hierarchy Method H. Sun, X.G. Li and S.L. Liu	1548
Numerical Investigation on Shear Failure of Concrete Beam Strengthened by Bonded Steel Plate D.G. Wang, Z.X. Wang and B. Xu	1552
Seismic Damage Causes and Strengthening Methods of Museum Free-Standing Cultural Relics J.B. Ji, W.M. Yan and Q. Zhou	1558
Aseismic Constitution Problems and Strengthening Methods of Chinese Ancient Wooden Buildings Q. Zhou, W.M. Yan and J.B. Ji	1563

Chapter 4: Reliability and Durability of Structures

Research of Non-Probabilistic Reliability of Soil Structure of High-Grade Highway Based on Interval Analysis H.S. Mu and L. Gao	1571
The Application of MATLAB-Based Monte Carlo Method in Hydraulic Structures Reliability G. Feng, C. Ma, D.J. Zheng, Z. Yao, L.F. You and D.Z. Tang	1576
Concentration Distribution of Chloride Ion in Cracked Concrete B. Yu, Z.H. Huang, M. Wu, H.L. Sun, L.F. Yang and B. Hong	1581
Performance Evaluation of Existing Reinforced Concrete Bridge Based on Reliability Analysis W. Peng, H.T. Hou, L.L. Wang and W.Y. Ye	1585
Non-Probabilistic Reliability of RC Bridge Retrofitted in Flexure with Externally Bonded Steel Plates S.J. Li and X.Y. Chen	1590
Erosion-Resisting Characteristics of Concrete under Freeze-Thaw Action B. Wang, F.H. Li, J.L. Li, S.A. Cui and Y.W. Zhang	1596
In-Plane Creep Stability Design of Concrete Filled Steel Tubular Arches Using Inverse Reliability Method W. Jiang and D.G. Lu	1601
Influence of Water Content on Dynamic Elastic Modulus of Concrete F.Z. Zhu, T.J. Zhao and T. Guan	1605
Current Situation of Researches on Durability of R.C. Structures Z.Y. Li	1610
Research on System Reliability of Plane Steel Truss H.J. Li and Z.Z. Wang	1616
Research on Carbonation Life Prediction Model of Recycled Concrete Structures B. Wang, S.Y. Wang, S. Wu, X. Wang and X. He	1620
Experimental Study on Strain Performance of Tensile Reinforcement under Fatigue Loads X.X. Tang, J.B. Liang, Y.P. Zhu, X.Z. Tang and Y. Xu	1625
Study on Box-Jenkins Method of Prediction of Chloride Concentration of Marine Concrete Structures E.J. Li and X.G. Zhou	1629
Experimental Research on Residual Strength of Concrete under Fatigue Loading and Corrosion of Magnesium Nitrate X.H. Meng, Y.X. Zhang, J.H. Zhou and R. Xu	1637
Pipeline Support under the Loads of Comparative Analysis K.Q. Yang, K. Chen and Y.P. Zhu	1641
Structural Reliability Analysis with Multi-Failure Models Using High-Dimensional Model Representation W.T. Zhao, L. Jia and C.K. Niu	1648
Research on Structural Present State and Damage Reasons of Ancient Tibetan Buildings P. Li, N. Yang and Y. Wang	1652
Simply Supported Slab Bridge Damage Identification Based on Curvature Mode Method L. Zhang	1657
Research on Bending Behavior of Corroded PC Beams Y.H. Zeng	1662
Safety Assessment Method Based on Response Spectrum Analysis of Building Structures to Blasting Vibration C. Chen, D.Q. Gan and Y.B. Zhang	1669
Probability Function Estimation of Rock Random Variables Using Chebyshev Orthogonal Polynomial F.Q. Gong, S.Q. Hou and T.Y. Wu	1673
Study on System Reliability of Gravity Dam Q. Xu, J.Y. Chen and J. Li	1677

Cause Analysis and Countermeasures of Early-Age Cracks on Cast-in-Place Slab with Ready Mixed Concrete	1683
C.T. Ke, Y.B. Chen, H.B. Gao and X. Cao	
Effect of Curing Temperature on the Properties of Concrete at Early Age	1687
P. Zhu and X.G. Zhou	
The Research of Predicting the Carbonation Depth of Concrete with Time-Series Analysis	1694
G.Z. Li and X.G. Zhou	
Comparison of Two Approaches in Reliability Analysis for the Network of Trentinos Bridge Management System	1700
Y.C. Yue, J.X. Ma, J. Gao, D. Zonta and M. Pozzi	
Research on the Impact Factors of Reliability and Comparison in the Design of Building Structures	1706
H.W. Feng and Y.M. Wu	
New Alternative Methods for Design of Joints and Elements of Timber Structures	1710
K. Vavrusova	
Study on Shear Resistance and Durability of CFRP Reinforced Concrete Beams	1714
S. Chen	
48"900lb Full-Welded Ball Valve Ultimate Bearing Capacity Optimal Design	1718
C.L. Mo and Y. Chen	
Study on Reliability of Bracing Structure for Foundation Pit by Excel Optimization Algorithm	1722
Y. Liao	