

Table of Contents

Preface, Conference Organization and Organizing Committees

Chapter 1: Geological and Geotechnical Engineering

The Distribution Laws of Interlayer-Gliding Structure Controlled by Panji Anticline and the Research of Quantitative Evaluation in Seams Q.L. Le	3
Study on the Application of Rotary Drilling Pile Construction in Expansion Project of Railway Station Z.L. Lu, L. Wu and Q.J. Zuo	10
Creep Characteristics of Mudstone under Devastating or Integrated States by Uniaxial Tests S. Zhong, C.X. Liu, Z.H. Liu and L. Wang	16
Test Investigation on Mechanical of Unsaturated Loess Y. Zhu and Y.X. Chen	22
GA-Optimization on Weiling Space of Steel Sheet Piles Construction R.J. Zheng, S. Fu and J. Guo	28
Analysis of Soil Consolidation Characteristics Caused by Pit Dewatering H.F. Tong	33
Study on Expansion and Deformation Characteristics of Expansive Soil in Yunnan Province Y.X. Zhou, C. Tang, M. Zhang, R.Q. Yue, Y. Ma, H. Yang, S.L. Fang, Z.L. Tang, W.J. Jiang and D.D. Li	37
Pile Samples Selection Method Based on Self-Organizing Maps Neural Network S.S. Liu and Y.L. Fan	41
Fracture Splitting Mechanism of Jointed Rock Mass under Compressive-Shear Stress and Grouted Pressure X.L. Jiang and H. Yang	45
The Finite-Element Analysis of Characteristics of Soil Slope Seepage Field Change in Rainstorm Condition Z.M. He, W. Wu, L. Zeng and Z.X. Cai	50
Study on the Stability Analysis Method of the Anchored Soil Slope Based on the Theory of Plasticity Limit X.Q. Wang, W.T. Yang and Y.H. Zhang	54
The Experiment Study on Thermal Conductivity of Loess-Like Soil L.L. Guo, Z.Z. Mei and B.Q. Zhou	59
Tension-Type Anchor Numerical Calculation by Energy Method S.S. Liu and X.L. Jiang	63
CT Investigation of Fracture Mechanism of Soil-Rock Mixtures H.F. Sun, Z.K. Yang, M.X. Xing, Y. Ju and Y.M. Yang	67
Analysis of the Effects on Optimization Design about Double-Row Piles Retaining Structure Y. Wang, Y.T. Yang, F. Yu and G.L. Hu	72
Application of TEM in Goaf Exploration S.J. Feng, S.G. Sun and W.B. Liu	79
Test Study on the CBR of Lime Improved Expansive Soil after Long-Term Immersion Y. Dong and B.T. Wang	84
Fluid-Solid Coupling Analysis the Safety and Critical Distance of the Water-Filled Faults C.H. Zhao	88
Discussion on Stability Analysis Method for Tailings Dam S.R. Lv	93
Prestressed Anchor Cable and Concrete Bored Pile Combined Support Technology D.X. Qian and H.T. Zhang	97
Engineering Application of Detections on Backfill Compactness S.M. Zhang and L. Zhang	101

Nonlinear Analysis of Settlement for Cohesionless Soil Foundations Based on <i>In Situ</i> Tests R.P. Li and J. Liu	107
Stability Analysis of the Cutting Slope Considering the Influence of Water Content of Soil Q. Ma, H.L. Xiao, Q.Z. Hu and L.H. Li	115
Numerical Simulation of Vertical Ground Stress Distribution along Fault Trend Direction in a Metal Mine Y.X. Wang and G.Z. Deng	119
The Coupled Thermo-Hydro-Mechanical Behavior of Saturated Fractured Solids S.H. Guo	123
A Preliminary Analysis of Main Factors Affecting Stress-Strain Behaviors of Frozen Soil with High Water Content S.J. Zhang, Z.Z. Sun and H.M. Du	128
A Structural Failure Model for the Rock Mass with a Discontinuous Weak Structural Plane X.H. Chu, Q.H. Jiang and B. Wang	135
Choosing the Supporting Scheme for Foundation Pit through Analytic Hierarchy Process L. Peng, D.S. Zhao, J. Cao and K.Y. Jiang	139
Numerical Analysis on the Evolutionary Features of Deformation and Failure Modes of Slope X.S. Tang, Y.R. Zheng and H.M. Tang	144
Theoretical Study on Thaw Settlement of Saturated Frozen Soil F. Ming, D.Q. Li and K. Zhang	155
Finite Element Analysis of Composite Soil-Nail Retaining Structure in Foundation Pit Engineering J.H. Huang	163
Evaluation on Bearing Capacity Improvement of Cast-<i>In Situ</i> Bored Piles Using Post-Grouting Technology J. Cai, Y.Y. Wang, X.H. Wang and H.W. Yan	168
Uniaxial Compression with Acoustic Emission Experimental Study on Rock Damage Process J.H. Liu, X.H. Liu and W. Han	173
Tailings Dam Stress and Deformation Research Based on the Theory of Elastic-Plastic Theory Z.W. Li	177
The Combined Guiding Hole Technology of Large Diameter DTH Hammer and Long Screw-Pile Driver Q.X. Liu and L. Fan	181
Evolution of Meso-Structure of Intact Loess during Wetting X.W. Fang, C.N. Shen, P.J. Cheng and L. Wang	188
Nonlinear Dynamic Analysis of the Foundation Soil and the Gravity Pier Y. Liu and M.X. Shao	192
Parabolic-Apex Numerical Back-Analysis of Mechanics Parameters of Surrounding Rock J.C. XU and Y.W. Xu	196
Study on a Calculation Method of Critical Embankment Height on Natural Soft Foundation Considering the Effect of Crust Layer F. Zhu, G.F. Zhan and L. Nie	202
The Influnce of Velocity for a Moving Load on the Vibration Isolation Using Pile Group M.Q. Xu and B. Xu	210
Analysis on Stability of Reinforced Soil at Shield Departure Area D.H. Rui, Y. Wang, C.H. Zhang and Y.S. Chen	215
Research on FLAC 3D Numerical Simulation of Working Mechanism of Compaction Pile Composite Foundation Y.Q. He, H.Q. Zhang, B.C. Liu and Y. Wu	220
Stability Analysis of Duchuanbian Collapse Z.L. Zhou and C.W. Liu	224
The Analysis of Pile Deformat on Impact Factor of Pile Retaining Wall in Expansive Soil Area B. Wei, J. Fan, Y.H. Chen, X. Zheng and G.Q. Sheng	230
Evolution Laws on Longitudinal Slope of Gully Affected by Debris Flow Erosion H.L. Pan, L.Q. Wei, S. Yang and G.Q. Ou	235

Slope Stability Analysis under the Condition of Seepage Y. Jin	241
DEM Simulation for the Effect of Rolling Resistance on Shear Band H.X. Tang, X. Zhang and X.H. Chu	246
Numerical Simulation of Storage Tank Foundation Treated by Water Filling Preloading Method Y.M. Zhang and X.D. Zhang	250
Study on the Influence of Active Earth Pressure Caused by the Ditch behind Retaining Wall G.Q. Sheng, Y.H. Chen, F. Sun, B. Wei and Y.L. Pan	255
Estimation of Strength of Massive Jointed Rock Mass Based on Generalized Hoek-Brown Criterion F.S. Han	259
System of Groundwater Flow in Multilayer Pore-Fissure Media with Weak Permeability Layer Y.É. Deng, H.H. Jiang and J. Yu	263
The Model Test about Over-Consolidated Soils' Stress and Deformation as Water Pressure Increasing G.C. Sun, J.B. Peng, Q.Z. Lu, H.T. Dai, X.H. Sun and X.S. Li	267
Evaluation on a Novel Phosphorus Fractionation Method in Acid Soils H.J. Lei, X. Liu, B.D. Xi and D.W. Zhu	272
Research the Problem about the Silted Deposition of the Broken Model S.Y. Huang, Z.G. Yin, J.G. Zhang, Y.S. Ren and J.H. Zhou	279
Subgrade Stability Analysis with Rainfall Infiltration L.J. Zhou	284
Nonlinear Damage Creep Model of Coal or Rock Containing Gas X.B. Yang, Y. Li, H.H. Guan, T.Y. Li and J.S. He	289
Determining the Reasonable Single-Well Proration in Gas Reservoir by the Method of Dynamic Production K. Zhang, H.T. Li, Y.F. Zhou and A.H. Li	297
Numerical Simulation of Soil-Structure Dynamic Interaction System under Blasting Load W.L. Gao, B. Huang and C. Wang	303
The Technique of Deep Foundation Pit and Pile Foundation Construction R. Li, Y. Qiao and Y.J. Liu	308
Stability Analysis of High Filling Slope Effected by Precipitation Duration Z.R. Liu and S.F. Luo	312
Design Method for Embankment under Consideration of Wind Erosion in Non-Wind-Eroded Area X.P. Yao, H.B. Xu, L.E. Zhang and K.F. Liu	316
The Settlement Prediction of Pile Foundation Based on Grey Linear Regression Model J.K. Liu, J.P. Wang, M. Zhu and X.J. Hou	320
Bio-Mediated Soil Improvement under Various Concentrations of Cementation Reagent L.M. Lee, W.S. Ng, C.K. Tan and S.L. Hii	326
Xingtai City Coal the Mine Environment Geological Problems and Countermeasures L. Li, S.L. Wang, F.Y. Wang, J.K. Ren and X.P. Jia	330
Shear Strength Change of Different Water Content after Thawing Remolded Soil W. Jiang and B.X. Gu	334
Research of Forecasting Method for Horizontal Displacement of Deep-Seated Subgrade Y.K. Guo, G. Cheng and X.Y. Le	338
Application and Research of Slope Flexible Protection System in Engineering X.P. Ou, S.Q. Zhou, Z.H. Wang, K. Ruan and B. Li	344
A New Method of Simulating Arbitrary Slip Surface in Soil Slope Y.W. Zhou, X.J. Cai and J.B. Chen	350
Study on Incipient Motion of Consolidated Cohesive Fine Sediment J. Wang, W. Guo, H.T. Xu, Z.W. Jin and Y.J. Zhou	354
Reinforcement Scheme and Numerical Simulation for Sequential Excavation of the Deep Foundation Pit R.L. Lu and Q.H. Jiang	359

A New Yielding Bolt for Rock Support in High Stress Rock Masses G. Wang, X.Z. Wu and Y.J. Jiang	366
Statistic Damage Constitutive Model of Loessial Soil Considering Damage Threshold X. Xie, D.H. Wang and F.S. Zhao	370
Demolishment in Laterite Embankment by Calcium Hydroxide H.S. Yang, H. Wei, Y.Z. Yan, Y.T. Hu, H. Wang and Y. Wang	376
Fitting Analysis of Soil Strength Parameter Based on the Finite Element Method B. Yang and L.Y. Wang	382
Deterioration of Laterite Engineering by Chloride Ion G. Chen, H.S. Yang, J.Y. Li, Y.Z. Yan and L. Shao	389
The Strengthening Scheme Optimization of a Homogeneous Earth Dam K.D. Tang, Z.S. Xu and G.J. Wang	393
Study on Horizontal Wells and ERW Drilling Technology of Carrying Cuttings C. Ma, L. Li and Y.P. Yang	397
A Study on the Microstructure Characteristics and Precipitation Law of Dredger Fill X.Q. Liu, W.B. Pei, Y.T. Zhang and D.J. Zuo	401
Study on Failure Characteristics of Basalt Subjected to Triaxial Cyclic Loading X.L. Leng, J.J. Liu, Z. Cui and Q. Sheng	405
Numerical Evaluation of the Active Earth Pressure Acting on Rigid Retaining Walls S.L. Feng, J. Li and P.L. Li	410
The Properties and Influence of Dirt Band during the Fully Mechanized Top Coal Caving in Thick Coal Seams J. Shen, W.D. Pan, L. Lin, X.M. Li and L.J. Fan	414
Test Analysis of Groundwater Withdrawal and Land Subsidence in Tianjin Airport Project C.B. Xiong, M.J. Xiao and X.R. Shi	418
Dynamic Penetration Tests (DPT) at Gravelly Soils Liquefaction Sites Z.Z. Cao, X.Y. Xu and X.M. Yuan	425
Study on Strength Reduction Method with Two Reduction-Factors P. Yang, Z.Y. Zhu and Z.Y. Zou	429
A Laboratory Study of Stratified Characteristics of Cohesive Sediment Movement in the Lower Energy Conditions J.S. Wang, X.L. Chai and L. Chen	434
Cause of the Floor's Crack in the Large Locks Built on Soft Foundations Z.H. Cao, J.J. Lian and Z. Xiao	440
Test Study on Strength Characteristics of Unsaturated Silt Y.L. Qian, F.Y. Wang and X.W. Li	446
Dynamic Design Height of Embankment Preloading Soil in Dongting Lake District Y.Y. Li, Z. Yi and Z.S. Liang	452
Study on Concrete Dam Temperature Evaluation Based on Distributed Optical Fiber Temperature Y.Y. Huang, D.D. Liu, L.X. Qu and Y.H. Zhou	457
The Application of Table Operations Method in Earthwork Blending H.H. Wan and T.H. Xu	463
Effect of Impurity Content on Elastic Modulus and Poisson Ratio of Salt Rock X.L. Zong, C.H. Yang, J.J. Zuo, J.B. Xu and G.D. Ji	467
Vertical Load Mechanism Analysis and Experimental Research on Super-Long PHC Pipe Pile in Soft Clay L.J. Zhou, Z. Lu and W.J. Wang	471
Effects of Load Type on the Mechanical Properties of the JLU Series Lunar Soil Simulant J.Q. Li, R.Y. Shi, M. Zou, L. He, Y.J. Yang and H. Li	479
Research of Slope Stability Analysis Considering Rainfall Infiltration J.H. Liu, Z.M. Chen and W. He	487
A Further Study on Soil Slope Stability Analysis by Finite Element Slip Surface Stress Method H.J. Li, Y.Y. Zhang and Z.W. Yan	492
In Situ Measurement of Ground Vibration Induced by Inter-City Express Train Q.M. Liu, X. Zhang, Z.J. Zhang and X.Z. Li	502

Study on Soft Soil Consolidation by Simulate Vacuum Preloading with Computer Tomography	
L.T. Mao, T.Q. Liu, L.M. Wen and Z.X. Yuan	508
Research on Three-Dimensional Roughness Characteristics of Tensile Granite Joint	
F.T. Sun, Q.R. Jiang and C.X. She	514
Study on Deformation Prediction of Landslide Based on Grey Theory and BP Neural Network	
R.Y. Li, Y.F. Ruan, S.S. Li and Y.H. Wu	520
Numerical Test Study on the Mechanical Behavior of Rock Creep Fracture	
H.P. Yuan, L.G. Zhu, Y.J. Zhai and S.M. Chen	526
3D Numerical Analysis of Soil Structure Interaction Behaviors of Pipe Jacking Construction	
W.T. Liu and X.Y. Lu	534
Meso Analysis on Soft Soil Uniaxial Consolidation Experiment with CT	
L.T. Mao, D. Zhao, K. Zhou, Z.X. Yuan and J.L. An	539
Analysis of the Interaction between the Various Influencing Factors on the Low Temperature Compressive Characteristics of Sulphate Saline Soil	
X.H. Guo, B. Han and G.D. Wu	545
Experimental Study on Moisture Migration in Unsaturated Loess under Freezing Effect	
T.H. Wang, H. Zhang and X.S. Lu	552
An Investigation into Nonlinearity of Foundation Soil of Gravity Retaining Wall Based on an Inversion Method	
H.Y. Xi, J.H. Zhang, J. Sun, J. Li, Y.Q. Wang, X.M. Chen and F.T. Wang	557
The Research of Calibration of the Rainfall in Laboratory Landslide Test	
Y. Huang, C.X. Shi and T.Z. Bo	562
Strength and Deformation of Silt Foundation Effected by Groundwater Level Fluctuation	
L. Zhang, X.W. Lei, Q.S. Meng and X. Yang	571
Numerical Simulation on Vertical Earth Pressure Distribution for Culverts under High Fills	
H. Fan, B.K. Ning and L. Gong	577
Cause and Stability Analysis of Daomakan Lanslide in Xiangjiaba Reservoir	
Y. Qin, J.B. Wei, H.C. Zheng and Y.L. Cui	581
Study on Process Mineralogy and Concentrating of a Certain Kyanite Ore in Xingtai	
J.X. Zhang, M. Chen, S.B. Wei and X.G. Wang	586
Summary and Application of Slope Stability Analysis Based on GIS	
G.L. Liang, Z.H. Xu and X.H. Dong	590
Stability Evaluation to Mined-Out Region	
L.Y. Peng, Y.Y. Zeng and G.C. Su	594
Study on the Frost Heave Characteristics of Artificial Frozen Soil Under Different Freezing Mode	
J.H. Chen	599
Review of Cumulative Deformation Models of Geotechnical Material under Cyclic Loading	
Z.D. Ding, L.M. Peng, C.H. Shi and J. Huang	604
Determining Range of Saturated Ground around Leakage Pipeline Using Unsteady Seepage Numerical Analysis	
X.G. Li and C.J. Duan	609
Analysis of Collapsible Loess Microstructure at Fractal Theory Based	
M.Y. Shi, Z.F. Chen and H.Y. Zhang	614
Research on Earthwork Calculating Methods Based on 3D Laser Scanning Technology	
B.X. Zhou, J.P. Yue and J. Li	618
The Influence Analysis of Groundwater Environment on the Strength of Cement-Stabilized Soil	
S.H. Lv, M.R. Dong, J.J. Yang and J.L. Miao	622
Research Advance in Fluid Flow through a Single Rock Fracture	
B.H. Guo and C.X. Tian	628
Practice Research on Wet-Collapsible Loess Foundation Treatment by High Energy Dynamic Compaction	
Q. Li, C. Tang, L. Fu, X.M. Cao, P.Z. Chen, G. Wang, Q. Yang, Y. Xiong, Y. Ma, B. Wang, D.M. Li and Y. Jiang	635

Directional Blasting Demolition Technology of 150m-High Reinforced Concrete Chimney and 75m Cooling Tower S.X. Xu and D.Z. Chen	640
Numerical Modeling of Soil-Pile Interface Behaviors of a Pipe Group Foundation under Complicated Load S.H. Hu, S. Fang and Y.F. Chen	645
Effect of Soil Moisture on Soil Temperature Field Near Buried Pipe J. Li, J.P. Fu and W.G. Xie	650
Shake Table Modeling of Laterally Loaded Piles in Liquefiable Soils with a Frozen Crust Z.H. Yang, X.Y. Zhang and R.L. Yang	654
Combination GM(1,1) and Stochastic Poroelastic Theory to Prediction the Land Subsidence in Yunlin and Jiayi Area, Taiwan K.W. Chen, C.H. Lee, S.J. Wang, C.H. Tu and J.W. Chen	659
Analysis of Settlement of Composite Foundation with Sparse Pile to Control Settlement J.H. Zhang, Z.Y. Yin and J.L. Zheng	664
Settlement Analysis of Foundation Base on Finite Element Method X. Song, H. Zhang and G.S. Xu	670
Analysis of Behavior of Composite Foundation with Sparse Pile to Control Settlement J.H. Zhang, Z.Y. Yin and J.L. Zheng	674
Parameter Analysis of Foundation Settlement Considering Interaction between the Pile and Soil X. Song, H.F. Lu and G.S. Xu	680
The Test Analysis on Frost Heave Characteristics of Carbonated Saline Soil W.H. Wang, W.D. Zhao and Z. Wang	684
Stability Analysis of Soil Slope and the Design of Anti-Slide Piles during Unsteady Seepage Y.Q. Li, H. Jing, Q.H. Wang and J.F. Chen	689
Monitoring and Analysis of Fine-Grained Frozen Soil Temperature and Permafrost Table for Transmission Line Foundation S.J. Ding, Y.F. Cheng, X.L. Lu and Y.P. Yang	694
Application of Nanomaterials in Reservoir Protection L. Li, Y.M. Li, Y.P. Yang and C. Ma	699
Numerical Analysis of the Ground Anchor and Row Piles in Mudstone Dip Slope W.T. Liu, H.Y. Tsai and M.H. Tu	703
Experimental Research on the Liquefaction Potential of Tailings Silt in Zhuziqing Tailings Dam J.Y. Hu, J.B. Xie, W. Li and C.H. Li	708
Numerical Simulation Analysis on Effects of Freezing and Thawing on Workover Rig Anchor Pile Bearing Performance J. Zhu, L.Q. Zou and H.L. Fu	714
Study on Soil Pressure of High Fill Retaining Wall in Construction Stage P. Li and X. Song	718
Analysis on Rheological Properties of Peat Soil in Kunming Area Y.P. Guo, X.N. Wang, Z.F. Lai and J.Q. Lv	722
Estimation of Rock Mass Deformation Modulus in Gas Pipeline Area Based on Different Methods Y. Zhao, L.Q. Wang and Y. Liang	727
Comparison and Analysis of Identification of Soil Stratigraphy in Shanghai between CPTU Test and Laboratory Test J.P. Wang, Y.N. Wu and Y. Liu	732
Identification for Bolt-Surrounding Rock System Based on Wavelet Neural Network J.Q. Hu, Y.X. Zhang and J.G. Chen	738
Characteristics of Cast-<i>InSitu</i> Concrete Pipe Pile under Lateral Load Z.T. Ma and Y.P. Wang	743
Pseudo-Static Approach to Single Rammer Energy Calculation in Dynamic Compaction of Saturated Soft Soil Foundations J.F. Liang, F. Wang and G. Bao	747
Grid Service Behavior in Geogrid-Reinforced and Pile-Supported Composite Foundations F. Wang, J.F. Liang and G. Bao	751

Experimental Study of Time-Frequency Effect of Rocks X.L. Wan and S. Zhang	755
--	-----

Chapter 2: Structural Engineering

Energy Attenuation Model in Granular Structure H.Y. Jiang, J.B. Lu and Q.S. Mu	763
Study on Homogenization Process of Masonry Using Numerical Simulation Based on Periodic Boundary Conditions C.X. Yang, J.M. Shen and W.J. Yang	768
A Sufficient Condition for Irregular Shearlet Frame X.G. Zhu and G.C. Wu	774
Unifying Section of Chord Member of Transmission Tower Based on Recursion Method D. Wu, Y. Xiong and L. Cui	778
Experiment and Theory Study on Ultimate Bearing Capacity of Reinforced Concrete Tubular Hollow Continuous Slab Z.H. Zhang, W.J. Yang and Z.G. He	782
The Analysis of Impact Coefficient on Reinforced-Concrete Bridge C.X. Qi, F. Xia and R.F. Zhang	786
Research on the Rigid Homogenization Theory of Masonry Structures Based on Regular Tessellation Theory C.X. Yang, Y.Y. Wu and W.J. Yang	790
An Analytical Study on Evaluation of Lap Splice Length of GFRP Rebar According to Reinforcement Ratio H.J. Yun, H.K. Choi and C.S. Choi	799
Direct Shear Responses of Insulated Concrete Sandwich Panels with GFRP Shear Connectors H.D. Yun, S.J. Jang and Y.C. You	803
Characteristics of Wind Loads on Long-Span Roof F.B. Chen, Q.S. Li, J.Y. Fu and J.R. Wu	807
Research on Skeleton Curve of CFST Frame Structure X.L. Sun	813
Virtual Power for Solving the Displacement of the Curved Bar Y.F. Tang and Y.S. Zhang	817
Space Simulation for Pier-On Mass of Pre-Stressing Box Girder at Earlier Hydration Age G. Zhang, C.J. Wang and S.H. He	821
Application of Structural Loess Binary-Medium Mode in Localization Shear Band H.R. Li, F. Feng and Q. Wang	825
Discuss on Precast Concrete Tube Column H.Y. Ding, C. He and P.Y. Zhang	833
A New Foundation Countermeasure in West Antarctica Peninsula Area W.M. Xiang, P. Jiang and X.C. Zheng	838
Slope Strengthening by Using a Grid Beam System F. Yang, B. Chen, C.F. Song and P.Y. Li	842
Test Study on Bearing Behaviors of Piles Considering the Influence of Caves S.G. Huang and H. Cao	848
Design Analysis of Unbonded Prestressed Concrete Two-Way Slab J.S. Liu	853
A Settlement Compensation Method for Design of Settlement Controlled Piled Raft Foundations under Vertical Loadings C.H. Wang, J.N. Cao and L.L. Zhao	857
Determination of the Average Wind Pressure of Circular Flat and Saddle Roof Building Based on the Numerical Wind Tunnel Method C.H. Wang, H.J. Li and J.F. Wu	865
Base-Isolated Multi-Storey Reinforced Concrete Frame Structure Modal Analysis C.H. Wang, H.J. Li and J.F. Wu	869

Study on Testing the Relative Density of Coarse Aggregate by Vacuum Method instead of Basket Method Z. Li and F. Zhu	872
Temperature Field Analysis of Space Grid Structures G.Y. Wang and N. Wang	877
Structural Analysis of the Shallow-Buried Station by Using Load Structure Method Y.S. Cao and Y.S. Zhang	881
The Typical Methods of Using Section Steel Reinforced Concrete Beams and Slab X.H. Li, C.W. Wang, C.X. Yue and J.D. Cai	885
Analyses of the Elastic Modulus Values of Masonry Y.S. Ni, W.J. Yang and Y.H. Jiang	889
Experimental Analysis on Shear Behavior of Sand-Concrete Interface C.F. Zhao, B.L. Yu and C. Zhao	893
The Ultimate Strength of the Concrete-Filled Tubular (CFT) Section Columns Y.B. Kwon, I.K. Jeong and I.K. Kwon	899
Study of Ultrasonic Wave Propagation Characteristics in Multilayer Bonded Structures C.A. Ai, Y. Liu, Z.G. Xu and J. Li	903
Design of Steel-Bamboo Composite Structure System Y.F. Du, Y.S. Li, B. Yang and J.G. Huang	908
Elastic Analysis on Post-Local Buckling of Steel Plates in Thin-Walled Rectangular Concrete-Filled Steel Tube Columns S.C. Guo and H.F. Liu	912
Impact of Environment Temperature Reduction on Force Performance of Steel Silos Y.D. Sun and Y.P. Wang	917
The Key Points in the Design of Supporting Structures for Dual-Track Tracking CSP System Y. Zhang, F.B. Xu and B. Song	921
Three Types of Stress-Strain Relationship's Comparison of Circular Tubed Reinforced Concrete in FEA X. Hu and Z.L. Chen	930
Research on the Residual Stresses in Cold-Formed Hat-Shaped Section H.C. Liu and F. Zhao	934
Ultimate Capacity of the K-Type Overlapped Rectangular Hollow Section Joints J.L. Liu and F.P. Zhao	939
Numerical Simulation of the Influence of Weld Model on the Response of Stiffened Plates under Blast Loading X.M. Zhu, H. Zhan and Z.G. Jiang	943
Behaviour of Laced Curved Concrete-Filled Steel Tubular Members Subjected to Axial Compression L.Q. Zheng, Y.F. Zheng and S.L. Guo	949
Analysis of Ultimate Loading Capacity of Inner Concave Cable-Arch Structure with Different Arch Rise-Span Ratio Y.B. Jiang and G.Y. Liao	954
A Study on Ductility of Lightweight Aggregate Concrete Shear Wall W.C. Chen, W.J. Yang and Y. Li	958
Research, Application and Promotion of New Isolation Layer S.P. Shang and H. Zhou	962
Foundation Pit Support Design and Construction of a Complex Building in Changchun H. Xiong, L.X. He and Y.F. Ma	968
Experimental Research on the Effects of Pipe Diameter on Axial Compression Properties of GFRP Tubes Reinforced Concrete Column Y.F. Zhang, S.K. Liu and D.W. Zhao	972

Chapter 2: Structural Engineering

Simulation Method of Soil Resistance on the Pushover Model of Group Pile Foundations Y.L. Zhang and T.B. Li	981
---	-----

Analysis on Hot summer and Cold Winter Areas of the Thermal Bridge Hybrid Structure X.H. Zhang, J.X. Liu and H.Z. Zhang	986
Research on Method of Non-Linear Static Pushover Analysis and Influential Mechanism of Displacement Ductility of Single Pile X.C. Chen, X.L. Yue and Y.L. Zhang	990
Experimental Research and Finite Element Analysis on the Axial Pressure Bearing Capacity of Steel skeleton-Steel Pipe Reinforced Composite Concrete Columns Y.Y. Li and B.S. Yang	995
Summary of joint Connection of Prefabricated Shear wall Structural System J.H. Cui and J. Ye	999
The Vibration of the Raft-Superstructure on the Saturated Soil under Moving Load by Using a Semi-Analysis Method C.B. Cheng, M.Q. Xu and B. Xu	1003
Establishment of an Oxidation Ditch Model Based on Flow Pattern and ASM1 M. Lan, X.L. Liu, W. Li and J. Zhao	1007
Vertical Deflection of Simply Supported Box Beam with Corrugated Steel Webs Including Effects of Shear Lag and Shear Deformation W. Ji and S.Z. Liu	1012
Impact Performance Analysis and Optimization of X-Sandwich Panels L. Wang and A.Q. Ye	1017
Comparison between New Concrete Filled Steel Tube Frame Structure and Steel Frame Structure Y. Wang, M. Li, J.H. Xu and Z. Zhang	1024
Study on Seismic Performance of Infilled Frame of Underlying Weak Layer G.Y. Lei, Y.Y. Zeng and C.G. Jin	1028
Study on Common Problem and the Design of Granary Railway Canopy Q.X. Liu and Y. Zhao	1034
Arrangement Principle of Hoop-Layers of Imitating Bamboo Drum Type Tridimensional Parking Structure Y.J. He, X.H. Liu and X.H. Zhou	1040
Nonlinear Buckling Behaviour of Imperfect Cylindrical Shells under Global Bending in the Elastic-Plastic Range L. Chen, Y.L. Peng and L. Wan	1045
Estimation Theory on Cable's Pretension in Pre-Stressed Mega Brace and Steel Frame Structure B.J. Tang, S. Gu and J. Ma	1053
Experimental Analysis on Low Temperature Welding Construction Method of Big Span Steel Truss Structure C.S. Xiang, J. Liu and Q.F. Li	1058
Dynamic Analysis and Optimization Design on Storage Silo of Concrete Mixing Plant X.X. Zhou, Y.L. Tang, C. Liu and G.Y. Hu	1062
Effect of Axial Compression Ratio on Ductility and Bearing Capacity of Specially Shaped Columns with HRB500 Reinforcement Y.J. Li and P. Liu	1066
The Connection Technology between Steel Structure and Wooden Antiqued Components K. Wang and H.G. Lei	1070
The Elastic-Plastic Analysis on Prestressed Concrete Cable-Beam Structure System X.Y. Xie and X.S. Yin	1074
Demolition of a Complex Brick-Structure Chimney with a Height of 56 Meters without Recoil by Demolitional Blasting P. Huang, N.X. Wang and L.H. Zhou	1078
The Effect of Submarine Pipelines' Distortion when Original Parameters Are Changed during Laying H.H. Geng and J.Y. Wu	1082
Based on Experiment of Constitutive Model of Load-Bearing Insulation Masonry X.J. Liu, L.X. Liu and Y.M. Wang	1089
Performance of Frame Structure Composed of Steel Reinforced Concrete Beam and Angle-Steel Concrete Column under Horizontal Loading K. Wang, H.H. Luo and W.Z. Zheng	1094

Statistical Analyses of Steel Frame Structure Drift Angle H.H. Xia, W.F. Liu and Y.Q. Gao	1102
Experimental Research and Finite Element Analysis on the Bonding Behavior of CFRP-Concrete Interface H. Peng, S.Y. Yu, C.S. Cai and W.W. Liu	1109
Soil-Structure Interactions of Tube-in-Tube System of Tall Buildings Based on ODE Solver M.C. Liao, Z.Y. Xiao and Y.Q. Gong	1118
Composite Support Structure of Continuous Arch Internal Support Design and Calculation and Analysis of Engineering Example H.X. Li, Y.Q. Guo and Y.W. Wang	1125
Optimum Design on Raft Foundation with Considering the Interaction of Structure and Foundation and Soil X.Q. Wang and D.X. Zhang	1131
Study on Reinforced Concrete Masonry High-Rise Building by Abaqus X.J. Sun, H. Zhang, D.G. Lu and F.L. Wang	1135
Arrangement of Cable on Prestressed Cable-Beam Structure System X.Y. Xie and X.S. Yin	1141
Hysteretic Property Analysis of the Different Ribbed Steel Deep Beams X.S. Yuan, H. Zheng and X.T. Xi	1145
A Practical Design Method for Energy Dissipation Structure M. Chen, G.J. He and C. Liu	1150
Dynamic Characteristics of Single-Layer Spherical Aluminum Alloy Reticulated Shell Y.P. Li, D. Ouyang and J.C. Xu	1154
Study of the Combined Effect of Steel Reinforcement and Expansion Agent on the Crack Resistance of Ready-Mixed Concrete G. Chen, S. Yuan, Y.B. Peng and W.J. Yang	1159
Study on Bond-Slip Performance of Corroded Reinforced Concrete Members Y. Liang, X.Y. Luo, Y. Ou and A.Z. Wan	1164
The Vibration of Pile Groups Embedded in a Layered Poroelastic Half Space Subjected to Harmonic Axial Loads by Using Integral Equations Method C.B. Cheng, M.Q. Xu and B. Xu	1170
Study on Elasto-Plastic Stability Bearing Capacities for K6 Single-Layer Reticulated Shells under Fire Conditions Y. Bai, J.L. Zhai, Y.J. Shi and Y.Q. Wang	1174
Super High-Rise Building (H =266m) of New Concrete Core Tube and Assembly Integral Spatial Steel Grid Cassette Tube in Tube Hybrid Structure Research and Design K.J. Ma, D. Peng and S.J. Qin	1179
Experimental Study of RC Beams Strengthened with Prestressed near Surface Mounted Helical Rib Steel Wire C.S. Zhang, H.M. Hao, M.X. Zhang and Y.H. Ding	1189
Contact Nonlinear Numerical Simulation of Steel and Concrete in Wind Turbine Foundation C.F. Wang, W.R. Lv and W. Luo	1194
Torque Calculation of Crossing Cantilever Beams with Equal Spans Y. Li, W.R. Lv and W. Luo	1200
The Structural Static Analysis of Multi-Grooves Rectangular Aqueduct R.C. Ji, T. Xu and J. Yan	1206
Effect of Slab Quality on the Microstructure and Performance of Q345C Hot Rolling Strip Used for Pipe Pile Foundation H.H. Luo, D.H. Zou, Z.F. Wang, H.X. Dong and Z.B. Dong	1210
Numerical Simulation on the Overall Dynamic Response of One High-Rise Steel Frame D.G. Chen, Y. Yao, H.J. Wang, Y.J. Deng and J. Zhou	1215
Method of the Snow Load for Design of the Low Rise Roof Structures in the Different Country Codes F.H. Li, M. Gu, Z.H. Ni and S.Z. Shen	1220
Finite Element Analysis on the Bearing Capacity of Tube-Plate Joint with Different Width-Thickness Ratio J.F. Yang, Y.L. Peng, X.B. Wei and J.B. Cui	1224

The Influence on Horizontal Ties of Steel Coupling Beams S.W. Kim, W.S. Park, N.Y. Eom and H.D. Yun	1229
Interval Finite Element Analysis and Sensitivity Study of Engineering Structure S.J. Liu, W.F. Duan and H.C. Wang	1233
The Study of the Crack-Resistant Plaster Mortar of Sand Autoclaved Aerated Concrete Blocks Z.W. Fu and S.H. Zeng	1237
Determination of Torsional Mode and Analysis of Torsional Resistance H.B. Gao and Y.S. Zhang	1242
The Theory and Case Study of Axle Load Identification Based on <i>BWIM</i> of Orthotropic Steel Deck G. Yang, W.Z. Chen and J. Xu	1247
Theoretical Research on the Debonding of CFST Short Column under Axial Compression J.C. Su and Y.N. Wen	1255
The Imperfection Sensitivity of Sheet Space Structure Based on the Contact Interactive T.J. Jin, X.M. Guo and W. Sun	1260
Creep Analysis of Steel Structures in High Temperature Using Finite Element Method Y.S. Liu and Y.C. Wu	1267
Statistic Analysis of Tensile Fabric Structures Features S. Mirhadi and M.R. Maghareh	1271
Settlement Analysis of Piled-Raft Foundation Using Numerical Method W.T. Liu and C.Y. Lin	1276
Research on the Method for Force Finding of Prestressed Cable Net F. Zhang	1282
Push-Down Analysis of RC Frame Structure with Damaged Column S.Y. Seo, J.H. Kim, J.Y. Yeon, H.J. Park and K.B. Choi	1286

Chapter 3: Tunnel, Subway and Underground Facilities

Construction Control Technology of Drilling and Blasting Method in Multi-Arch Tunnel J.L. Zhao	1293
Analyse on the Causation and Classification of Usual Damages of Highway Tunnel S.Y. Shang	1297
The Dynamic Response Analysis on the Surrounding Ground of Underground Structure G.D. Zhang, J.L. Zhang, J.L. Cao and W. Luo	1301
Forecast Study on Large Deformation of Surrounding Rocks in Mountain Tunnels G.H. Zhang, S.J. Wu and L.B. Chen	1307
The Influence of the Twin-Parallel-Tunnels Passing through Construction on Buried Oil & Gas Pipeline P. Ren, Y.P. Li, K.L. Jiang, H.J. Wang and M. Liu	1312
Application of Ground Penetrating Radar in Detection of Tunnel Lining Structure Fracture and Processing Measures Q.N. Chen, X.C. Huang and J.X. Li	1318
Construction Simulation and Monitoring Data Analysis on Influence of Tunnel Excavation on the Treatment Structure of Karst Cave H. Liu and X.Z. Deng	1323
Intrinsically Safe in the Tunnel Construction under Complex Geological Conditions H. Liu and Z. Xie	1327
Study on Finite Element Algorithm of Jointed Rock Mass in Tunnel in Blasting and Model Building H.Y. Zhang, Q.Y. Yu and N.J. Zhou	1331
The Measurement of Water Bursting Volume of Jianfeng Mountain Tunnel and Treatment Techniques of Water Bursting J. Huang, G.M. Li, B. Wang, H.Z. Liu and R.G. Song	1335
Analysis of Difference in Axial Force of Anchor in Shallow-Buried Loess Tunnel with Large Cross-Section Q. Li and Z.M. Su	1343

Deformation and Stability Study of PBA Extension Method Based on Air Defense Tunnel J. Jia, S.H. Zhou, X.P. Yao and C. Shen	1347
Structural Analysis and Study on Support Technology of Refuge Chamber of Mine F.W. Li, L.Z. Jin, H.R. Han and X.C. Zhang	1356
Simulation of Stress Concentration and Drilling Relief of Deep Tunnel Boring Face Z.T. Ma, T.X. Wang and S.J. Liang	1362
A Geophysical Prospecting and Survey Research on Maojingba Tunnel Project H.S. Mu	1366
Simulation and Analysis of Frost Heave Force for Tunnel Lining J.X. Liu, Q.J. Hu, Y.T. Liu and Z.W. Long	1374
Study on the Arrangement of Baffles Attenuating Blast Waves inside Tunnels H.Q. Lu, W.Q. Liu and T. Zhao	1380
The Construction Technology Development of Immersed Tunnel S.Y. Li	1385
Research on Similar Materials Simulation Test for Protective Coal-Seams of Group B Coal-Seams of Panyi Coal Mine of China F. Cai and Z.G. Liu	1389
Research of New Filling and Mining Technology Using Waste Rocks in Steep Coal Seams C.W. Zang, C.L. Ma and X.A. Zhuang	1395
Adverse Engineering Properties of Banxi Group Slate along Changsha Metro Line 2 C. An	1401
Study on the Blasting Vibration Characteristics of Shallow Tunnel under Unsymmetrical Pressure W.X. Gao, X.M. Sun, B.H. Hou and N.N. Chen	1405
Research on Effect of Grouting Circle on Seepage Field of Subsea Tunnel Y. Wang, X.H. Wang and J.R. Chen	1409
Analysis of the Displacement Caused by Shield-Driven Construction Adjacent to the Existing Tunnel L. Zhu, H.W. Huang and J.Y. Zhao	1413
The Probe Technology and Counter Measures of Goaf of Colliery Area in Tongluoshan Tunnel X.B. Zhang	1419
Research on Safety Inspection of Electric Cable Tunnel with Masonry Structure C.M. Zhai, Q.H. Han, Y. Lu and R. Jin	1423
Numerical Analysis of New Shield Tunnel on Mechanical Behavior of Existing Parallel Tunnel X.F. Li, S.J. Du and D.F. Zhang	1429
Studies for Deformation of Slurry Shield Construction under Across and Parallel Existing Tunnel Y.Q. Ma, Y. Ning, Y. Dong and F.L. Wu	1435
Study on Close Coal Seam Pressure Behavior Law of Zhong Xing Mine by Physical Model G.S. Cai, L.Q. An, X.X. Zhu, J.L. An and L.T. Mao	1439
Technology of Pile Foundation Underpinning in Shield Tunnel of Xi'an Subway L. Ma and J. Wang	1445
Analysis of Settlement Control Measures in Immersed Tunnel G. Wei, H.J. Qiu and X.J. Wei	1449
The Numerical Experimental Investigation on Damage Zone of Surrounding Rock of Deep Tunnel Based on the Elastic-Plastic-Brittle Constitutive Model D.G. Wang, J.X. Miao and Q. Li	1454
Numerical Simulation of Frozen Construction of the Cross-River Tunnel's Connected Aisle Y.M. Zhai and Z.G. Cui	1460
Management Criterion for Large Deformation Tunnels S.M. Zhang and Y.Q. Zhu	1468
A Mechanical Model of EPB-TBM Tunnelling in Mixed Face Strata T.T. Song and X.S. Chen	1472
Study on Construction Technique of Soft Rock Tunnel in Loess Region Z.Q. Chen and Y.X. Wang	1480

Numerical Prediction of Settlement Adjacent to Deep Excavation of Metro Station in Ju-Zi-Zhou Island, Changsha X.Y. Pan and H.Y. Fu	1484
Application Study of the Calculation Method for Loads of Multi-Arch and Extra Large Cross Section Tunnels in Double-Side Drifts Construction Method C.B. Xu and X. Zhao	1488
Influence Mechanism of Lime on Strength and Water-Resistance Properties of Phosphogypsum Autoclaved Brick Y. Lin, J.X. Cao and Q. Lin	1492
Theoretical Analysis of Gas and Oil Storage Cavern in Bedded Salt Rock Using a Love Function G.J. Wang and P. Xie	1499
Analysis on Safety Range of Supporting Force at Excavation Face of Shield Tunneling in Xi'an Metro Z.G. Yan, D.S. Liu and Y.S. Jiang	1503
Influence of Water Saturation on Dynamic Responses of a Partially Sealed Tunnel M.J. Wen and Z.P. Su	1510
Numerical Analysis of Deformation Influence of Horizontal Adit Construction on Main Tunnel Intersection Structure Z.J. Sun	1514
Study on Effects of Metro Tunnel Enlarged from Air Defense Tunnel on Adjacent Piles and Control Measures X.P. Yao, Q.M. Gong, J. Jia and C. Shen	1518
Study on Construction Method of Double-Track Tunnel on Passenger Dedicated Line by Numerical Simulation J.G. Zhang	1527
Early Stage Tunnel Lining Experimental Study of Jinhuaashan Railway Tunnel Construction within Soft and Weak Rock Mass L.Q. Jin, T.Q. Zhou and B.H. Lv	1532
Analysis of Reliability Degree for Primary Support System in Tunnel Z.M. Su	1538
Research and Discuss on Development of Deep Tunnel Bolt Supporting Technology J.C. Liu, X.L. Liu and L.W. Ren	1542

Chapter 4: Road and Railway Engineering

Vibration Characteristics of Air-Entrained Concrete Based on Slipform Construction Y.C. Zhang, L.L. Gao and J.M. Shen	1549
A Dynamics Optimization of Scheduling for Excavating Development Project in Complicated Ore Mining below Railway Special Line L.C. Jiang, L.Q. Hu and X.H. Ren	1553
Study on the Design Method of Energy-Saving Slope in Subway H.Z. Xu, G.Z. Cheng and C. Wu	1559
Discussion on Methods of Identifying Dangerous Road and Sections in Rural Highway J.J. Wang, H.F. Liu, F. Han, L. Peng and J.J. Fu	1565
Experiment Research of the Lateral Properties and Density Variation of Loess Subgrade to Dynamic Compaction for Mountainous Highway Y.X. Wang and Y. Liao	1571
Feedback Analysis Method and Its Application on Consolidation Settlement of Subgrade C.H. Fu and H.B. Zhou	1575
Moisture-Thermal Coupling Model for the Temperature Calculation of the Permafrost Subgrade Z.Q. Ye, X.S. Mao and M. Ye	1580
Research on Designing Optimum Asphalt Aggregate Ratio of Asphalt Mixture by Mechanical Index Method H.M. Li and W.F. Liu	1586
Research on the Road Performance of the AC-25 Asphalt Mixtures H.M. Li and W.F. Liu	1593

Determination of the Rural Highway Subgrade Work Zone Depth Y.J. Chang, B. Ma and Y. Wang	1599
Research on the <i>In Situ</i> Test of Thick-Layer Soft Ground of High-Speed Railway Treated by PHC Pile D. Yang, W.Y. Chen, T.D. Xia and L.N. Zhong	1603
Roadway Supporting Technology in Fully Mechanized Workface with Large Mining Height of Specially Thick Coal Seam in Datong Mining Area G.L. Lu, C. Wang, Y.D. Jiang and H.W. Wang	1611
Consolidation Effect and Influencing Factors of Dynamic Compaction for Filling Subgrade Y. Jiang, Y.X. She, W.B. Sun, B.H. Chen and H.R. Shen	1617
Application and Research on New Technology of Foam Lightweight Soil in Treatment of Soft Soil Foundation of Railway Engineering Z.L. Li and K.F. Zhang	1622
Mechanical and Economic Analysis of Asphalt Pavement Structure on Mix Base H.W. Peng and B.F. Ou	1626
Analysis for Influence Factors of Cold Recycling Mixture Compaction Test Y.B. Wang, G.Q. Ying, J.L. Hu, H.W. Wei and Q. Zhang	1633
Effect of Crushed Rock Layer Width on Natural Convection Cooling of Highway Embankment in Permafrost Regions L.J. Yang, B.X. Sun, W. Wang and Q. Liu	1638
Analysis on the Convection of Highway in Permafrost Regions X.Y. Sun, Z.Q. Wang, H.T. Xing and Y.H. Tong	1644
Improving the Computational Efficiency of Widening Highway Approach X.Y. Sun, Z.Q. Wang, H.T. Xing and Y.H. Tong	1648
Discussion for Ageing Features of SBS Modified Asphalt and its Assessment Index X.P. Ji, X.Z. Tan and N.X. Zheng	1652
Research on Aging Mechanism and Recycling Mechanism Based on Asphalt Four Components Analysis Y.H. Nie, Y.L. Zhang, J.Y. Yu, D.L. Kuang and X.P. Zhang	1659
Research on Technology of Highway Curve and Slope Road Segment Alignment Safety Design J.L. He, S.G. Chen and X.S. Zhang	1665
Different Chosen-Unit-Weight Shear Resistant Property of the Asphalt Mixture on the Bailey Method Y. Zhang, B. Han and B.W. Sun	1669
Application of Combined Anti-Slide Micro-Piles to Control of a Landslide in Xining-Jiuzhi Highway S.L. Tang, L. Zhou, Z. Wu and X.L. Dang	1673
Mixed-Mode Fracture Characteristics of Cold Recycling Mixes with Emulsified Asphalt L. Gao, F.J. Ni and M.K. Yang	1678
Full-Scale Impact Test Study for the New Flexible Safety Fence Z.B. Lei, R. Wang, M.X. Lei and X.Y. Zhang	1684
Research on the Crashworthiness of Neotype Flexible Safety Fence Z.B. Lei, L.H. Li, M.X. Lei and C.C. Chen	1689
Study on the New Concept of the Highway Maintenance Q. Jiang, R.G. Ma and Z. Ye	1693
The Feasibility Experimental Study about Bamboo Reinforcement Applied in Concrete Pavement X. Chen, B.W. Chen and R. He	1697
The Reason and Control Method of Road Frost Boiling H.D. Li	1702
The Measurement of Thickness and Model Prediction of Hot Asphalt Mixture in the Rolling Compacting Process X. Chen and J.L. Zheng	1706
Research on Speed Target Value of Railway Engineering M.P. Ran and X.Y. Yang	1715
Cohesive Cracking Simulation of Asphalt Mixture with Reflective Crack through XFEM J.M. Zhang, B. Zhang and J.C. Wang	1721

Analysis of Research Topic on Cement Cold-Recycled Base of High-Grade Highways T. Liu, T.Z. Ming and G.W. Hu	1730
Discussion on Using Waste Freeway Lime-Flyash Stabilized Aggregate S.W. Fan	1736
Analysis of High-Speed Railway Roadbed Settlement in Seasonally Frozen Regions G.Q. Shi, Y.Z. Zhang, S.Y. Zhao, L.X. Zhang and B.C. Sun	1740
3D Model of Airfield Clearance and a Case Study M.X. Xu, L.C. Cai, B. Shao, G.H. Wang and L.M. Zhang	1744
Study of the Critical Load for Rigid Airport Pavement by the Finite Element Analysis J. Cai and Z.B. Yue	1748
Study on CR Point Identification in SAR Images X.M. Xing	1754
Roadway Hard Rock Loose Blasting by Digging Machine Technique J.G. Fu, R.X. Luan and Y.T. Zhang	1758
Analysis and Evaluation of the Recycled Asphalt Mixture Performance Influencing Factors Y.H. Yang and J.X. Gao	1763
Mountain Road Typical Slope Stability Assessment and Control Measures S.L. Wang, Q.S. Wang, L. Li and J.K. Ren	1769
Comparative Study of Different Form of Asphalt Mixture Viscoelastic Rheological Model Y.Y. Li, X.B. Zheng and Z. Yi	1773
The Analysis of Development and Utilization along the Rail Transit in Qingdao Economic and Technological Development Zone P. Dai and Y. Yue	1777
Analysis on Void Beneath Curling Slab in Rigid Base Cement Concrete Pavement and Fatigue Life Prediction Q. Zhang, Y.C. Sun and J.J. Li	1782
Treatment Mechanism Research on the Roadbed Widening with Geosynthetics K. Jiang, F.L. Gao and W. Fang	1789
Study on Post-Construction Settlement of Ningbo Airport Runways H.P. Ren and J.C. Wang	1794
Elastoplastic Analysis of Asphalt Concrete Pavement H.P. Ren and J.C. Wang	1801
Comparison for Support Patterns of Temporary Shaft for Construction in Silty Clay Y.X. Cui, J. Jia and S.H. Zhou	1809
Application of Ballastless Track CP III Control Network Measure Method in the Building of High Speed Railway Y.L. Qian and X.M. Li	1817
Compared Analysis of Embankment Thermal Stabilities in High Temperature Permafrost Regions with and without Climatic Warming D.Q. Li, X. Huang and J.H. Fang	1822
Feasibility Analysis on Implement of Freeze Roadway Cooling Technology in Coal Mine of Heilongjiang Province J. Zhou, X.M. Liu, X.L. Qin and S.R. Xing	1830
Comparative Analysis on Hot and Warm Mix Asphalt Pavement Performance H. Sun	1834
Pavement Concrete Construction Process on the Spatial Variability of the Pavement Structural Strength D.W. Wang and H.L. Chen	1843
The Theoretical Analysis of Performance Evaluation Connotation of Rural Highway Projects W.G. Wang, R.G. Ma, K. Feng and G.H. Liang	1848
Analysis of Weighting Coefficients of Post-Assessment Indexes for Cold Recycling Engineering of Asphalt Pavement Based on Hierarchy Analytic Procedure M.J. Zhang, W.B. Zhang and B.Y. Yu	1857
Mountainous Highway Routing Decision-Making Model Based on Variable Weight Grey Theory D.M. You, B. Han and L. Li	1864

Mathematical Logarithmic Model for Predicting Noise of Simply-Supported PC-Box Girder in High-Speed Railway X.Z. Li, J.F. Wu, X. Zhang, Q.M. Liu and Z.J. Zhang	1870
Vibration Analysis on Worn Cement Concrete Pavement C.G. Fan, B. Luo and Z.W. Xiong	1875
Study on Prediction Models for Time-Dependent Settlement of Soft Road Foundation A.Z. Zhou, W.W. Gu and W. wang	1880
Study on the Computing Method of Asphalt Absorption Coefficient in the Effective Relative Density of Aggregate Q. Dong and T.Q. Ling	1886
The Impacts of Intercity Railway Project on Regional Development of Northwest China Using Scenario Analysis Method: An Example of Gansu Province L. Gong, X.D. Zhang and W. Wang	1894
Research on Soft Soil Foundation Treatment and Relevant Design Technology for Changzhou Section of the Coastal Expressway H.S. Mu	1902
Research and Application Prospect on Cold Recycling Technology of Asphalt Pavement M.H. Liu	1909
Experimental Study on Water Stability of Cold Recycled Mixture Stabilized with Emulsified Asphalt M.H. Liu	1914
Theoretical Approach to Offer a Rational Speed Reduction Scheme in Korea Railway G.S. Yi, H.U. Bae, J.Y. Choi and N.H. Lim	1918
Application of Fractal Theory in Aggregate Gradation Research B. Tan, R.H. Yang and Y.T. Lai	1923
Research on the Level Soil Pressure of Multi-Stage Retaining Wall in Mountain Road P. Li and H.T. Wan	1929
Experimental Study on Dry Shrinkage of LSFRC and LHFRC P. Li and D.Q. He	1933
Surface Structure of Asphalt Pavement Non-Nuclear Density Gauge Density Test Results the Impact Analysis H. Zhao	1937
Analysis of the Mode of Crushing and Stability in Old Cement Pavement during Asphalt Overlay Project H. Wang, Y.F. Wu and S. Ye	1941
Analysis the Control Techniques of Reflection Crack on Asphalt Overlay of Old Cement Concrete Pavement J. Wang	1945
The Ageing Characteristics of Base Asphalt under UV in the Construction of the Airport S. Ye and Z.F. Zhou	1949
Study the Performance of Coal Gangue Filling in the Road Embankment W.S. Shen, P. Zhao, X.C. Wang and J.C. Wang	1953
Statistical Analysis of the Channelized Traffic and Road Condition Investigation about Beijing-Zhuhai Expressway Z.J. Yang	1957
The Engineering Application of Multifunctional DGT-1 Spraying Wall Composite Steel Template J.H. Lv	1961

Chapter 5: Bridge Engineering

The Technology for Construction Quality Control of Bridge Deck Pavement on Yellow River 2nd Bridge in Zhengzhou Y.L. Luo	1967
Stay Cable Tubes Positioning Control of Prestressed Concrete Low-Pylon Cable-Stayed Bridge H. Wang, Y.B. Chi and Y.L. Li	1971

Sensitivity Analysis on Dynamic Properties of Large Span Concrete-Filled Steel Tube Arch Bridge	
H. Sun, X.J. Han and X.Y. Gao	1976
Long-Term Performance of Bridge Elements Using Integrated Deterioration Method Incorporating Elman Neural Network	
G.P. Bu, J.H. Lee, H. Guan, Y.C. Loo and M. Blumenstein	1980
Modification of the Conventional Method for the Track-Bridge Interaction	
K.M. Yun, J.Y. Choi, C.O. Lee and N.H. Lim	1988
Seismic Response Analysis of Long Span Cable-Stayed Bridge by Response Spectrum Method	
M.C. Jin, B.F. Wang, Z.R. Feng and X.J. Wang	1992

Chapter 5: Bridge Engineering

Fuzzy Reliability Evaluation of RC Rigid-Frame Arch Bridge in Service	
A.P. Chen and R.T. Diao	1999
A Comprehensive Method of Determining Cable Force during Closure Condition for CFST Arch Bridge	
G.F. Sun and J.H. Li	2004
The Instability Analysis and Processing Scheme of ChangXin Viaduct Abutment	
W.H. Wang, W.D. Zhao and X.L. Kong	2009
Anti-Collision Device Structure Research on Reservoir Arch Bridge	
J. Lin, J. Li and B.J. Dong	2014
Fatigue Assessment of Suspension Bridges Carrying Rail and Road Traffic Based on SHMS	
Z.W. Chen, Y.L. Xu and K.Y. Wong	2019
The Application of Fuzzy Comprehensive Evaluation in Risk Assessment of Incremental Launching Bridge	
Z.C. Tian, L. Yang and T.Y. Jiang	2028
Key Technologies of Whole Incremental Launching Construction Control for Inclined Continuous Box Girder with Steep Longitudinal Gradient	
T.Y. Jiang, Z.C. Tian and J.H. Xu	2034
The Force Analysis of PC Rigid Frame Curved Bridges with Long Span	
M.L. Yang, F. Xu and C.X. Li	2040
Assessment on the Thermal Stresses of Concrete Bridge Piers under Solar Radiation	
P.S. Gong, B. Chen, C.F. Song and X.L. Li	2045
Application Analysis on Backfill at Bridge Abutment with the Natural Gravel Mixed with Cement	
B. Han, S.D. Xue and J.J. Hu	2051
Application of the Track-Cable Erecting System for Steel Truss Girder in Aizhai Suspension Bridge	
N.C. Deng, X.H. Liu, N.L. Zhang and L.Y. Wu	2056
Durability Study of Reinforced Concrete Bridge	
C.J. Yi	2061
Chemical Grouting Technique to Strengthen the Bridge (Culvert) Abutment Soft Ground Projects	
H.L. Chen and D.W. Wang	2065
Test Studied of Yangjiawan Grand Bridge in the Project of Lanyu Railway by Movable Bed Model	
W.S. He, L. Yuan, S.M. Chang, J.J. Feng and L.M. Wang	2070
The Damage Factors Correlation Analysis and Health Hierarchies Partition for RC Bridge	
Z.R. Feng, X. Liu and X.J. Wang	2074
Nonlinear Analysis on the Anchor Board of the Cable-Girder Anchorage Zone of a Cable-Stayed Bridge	
Y.J. Chen, R.H. Xie, W.M. Yan, Y. Li and W.B. Xu	2080
Effects on the Hydrodynamics Caused by Artificial Islands of the Hong Kong-Zhuhai-Macao Bridge	
R.Y. Ji, Q. Xu, L.W. Jia and S.P. Mo	2085

Analysis and Design on Spacial Finite Element of Non-Conventional Type Bridge by ANSYS	
X.Y. Chen, S. Zhong and B.Y. Gao	2091
Tests before and after Reinforcement of Tujiazui Bridge	
X.Y. Chen	2095
The Shear-Lag Effect on Curved Box Girder Bridge Considering Prestress and Initial Curvature	
J.L. Qiao, Y. Jin, W.L. Tian, X.S. Chen, C. Du and S.L. Gao	2100
Analysis of Parts Weight of Railway Concrete Girder Bridges by Fuzzy Analytic Hierarchy Process	
F. Yang, M.B. Su, Q.N. Li, X.L. Yan and T. Feng	2105
Design and Analysis of Shear Connector in Prestressed Concrete Composite Box-Girder with Corrugated Steel Webs	
S.Q. Huang	2109
Finite Element Analysis Simulation of the South-to-North Water Diversion Bridge during Cantilever Construction	
H. Ma	2114
Research on Security of Bridge Crashed by Vessels in Xiangjiang Bridge	
Z.B. Lei, H.L. Cheng, M.X. Lei and G.B. Liu	2119
The Pre-Stressed Modal Calculation Method of Long-Span Suspension Bridge	
J.L. Zhou, L.N. Li, S.G. Sun and S.B. Cai	2123
Condition Assessment of Expansion Joint of a Cable-Stayed Bridge Based on Long-Term Monitoring	
X.L. Li and L.M. Sun	2127
Study on Dynamic Characteristic of 64m Railway Steel Truss Bridge on the Different Speed of Train Loads	
Z.J. Sun	2135
Application Effect Evaluation of Equivalent Linearization Method Used in Displacement-Based Design of Bridge Piers	
D.C. Zhou, G.R. Chen and L.Y. Nie	2139
Study on the Gradually Expanding Substructure Method for the PBL Shear Connector Group	
Y.Z. Zhang, Q. Li, Y.Z. Bu and L. Zhao	2148
Effect of Suspender Tension Order on the Natural Vibration Frequency of a Through CFST Arch Bridge	
Z.L. Li and S. Wang	2153
Random Seismic Response Analysis of Long-Span Bridge Structures	
Z.J. Liu, Y.F. Xing and Y. Wan	2157
Research on Safety Accidents in Bridge Construction Based on Safety Rheology and Mutation	
P. Wang and W.J. Yang	2162
Finite Element Calculation and Pushing Construction Analysis on the Superstructure of Beijiang Auxiliary Channel Bridge	
Y.L. Wang and G.D. Zheng	2167
Fire Safety Design Methods of Steel Bridges	
H. Lin, S.T. Meng, C.H. Luo and J. Chen	2172
Wind-Resistant Control Research for the Main Girder of Large-Span Bridge	
R.G. Liu, Q. Guo, D.S. Cai and B. Chen	2176
Research on Anti-Collision Program of Side Pier in Chongqing Caiyuanba Yangtze River Bridge	
B. Geng and X. Zhang	2183
Deflection for Pre-Stressing Concrete Thin-Wall Box Girders Bridge under Action of Multi-Span Loads Exposed to Fire	
G. Zhang, S.H. He, H.J. Guo and W. Hou	2188
Effect of Fly Ash on Creep of High Performance Concrete Used in Bridge	
L.L. Zhang, L.Q. Wu, J.X. Yang and K. Zhang	2192
Research on Safety Technology for Initiative Anti-Collision of Bridge	
Z.B. Lei, Z. Chen, M.X. Lei and R. Al	2196

Numerical Analysis on the Dynamic Characteristics of South-to-North Water Division Bridge during the Cantilever Construction Stage J.C. Zuo	2200
Research on Closure Jacking Forces of Continuous Multi-Span Rigid Frame Bridge T. Wan, S.J. Xi and X.M. Jin	2205
Installation Technology of Webs in the Construction of PC Box-Girder Bridge with Corrugated Steel Webs Y.J. Du, B.W. Yang and S. Wan	2209
Research on the Measures to Improve the Durability of Urban Concrete Bridges in Hebei Province S.Q. Zhu, Q.C. Bi and H.H. Cui	2214
Risk Analysis of Vessel-Bridge Collision Based on AASHTO Method Y.S. Zou, S. Zhong, Y.H. Wang and J.H. Wu	2218
A Study on the Pier Scour and Seismic Capacity Assessment of Bridges Y.E. Huang, C.H. Kou, L. Chen, C.S. Kao and M.W. Lai	2224
Study on the Local Scouring of the Bridge with Sediment Control Dam D.P. Sun, L.S. Wang and P.T. Wang	2230
Numerical Assessment on Time-Varying Temperature Field of Bridge Tower under Solar Radiation B. Chen, W.H. Guo, C.F. Song and K.K. Lu	2236
Singular Function Models of a Simply Continuous Beam Bridge under a Moving Load J. Zhang, M.K. Gou, C. Liang, X.L. Ni and Z.W. Zhou	2240
Calculation of Horizontal Rigidity of the Plate Type Elastomeric Pad Bearing for Highway Bridge J. Wang and J.X. Liu	2244
Test Research on Behavior and Spatial Finite Element Analysis of Equal Section Catenary Double Empty Arch Bridge Z.Q. Wang and T. Ouyang	2248
Experimental Study on Permeability and Chloride Resistance Properties of Concrete in Yu-Cheng Bridge T. Fan, J.F. Dong and Y.X. Zhao	2253
Study on the Splicing Method between New and Old Bridges Q.M. Kong and H.J. Lv	2257
Long Span Prestressed Concrete Continuous Rigid-Frame Bridge ANN Construction Control G.F. Ren, C.J. Zou and Y. Xu	2261
Influence Analysis of Rigid Steel Framework on the Closure Section of the Bridge by Cantilever Construction Method F. Zheng, G.W. Li, L. Yan, P. Liu and G. Zhang	2265
Key Technologies of Construction and Control of Arch Cantilever Casting for Mupeng Bridge W.P. Peng, Z.C. Tian and T.Y. Jiang	2272
Shallow Talk Steel Strand Pre-Tensioned Prestressed Hollow Plate Beam Construction Craft and Quality Control H.W. Liu	2278
Research on Failure Probability of Load-Carrying Capacity for Existing Diseased Concrete Bridge X.Y. Liu, X. Lei, S.C. Xiao and G.H. Wang	2282

Chapter 6: Coastal Engineering

Port Coastline Value Assessment on the Basis of Fuzzy Mathematics Comprehensive Evaluation Method X.H. Yang and T. Zhang	2293
Study on the Role of Sediment Dike in the Port Construction near Silt Coast J. Kong, C. Cheng and C.J. Shen	2298
Study on Stability of Rock at Reservoir Banks Slope Based on AHP Z.J. Zhou, H. Liang and X.D. Wang	2309

Experimental Study on Zhenshui Sand Bar and its Treatment in Xiaolangdi Reservoir T. Wang, J.H. Zhang, S.K. Chen, H.B. Ma and K.P. Li	2318
Study on Economical Channel Width for Large LNG Vessel W.Z. Guo, J.X. Liu, Z. Liu and K. Wang	2324
Study of Concrete Deterioration under Immersion in Simulated Seawater P. Zhang, H.G. Qin, Y.K. Hou, C.M. Pang, W. Sun and W.L. Zhou	2330
Study of Wave Models of Parabolic Mild Slope Equation and Boussinesq Equation F. Fan, B.C. Liang and X.L. Lv	2334
The Key Reconstruction Technology of the Changjiang Yihua Standingpile Wharf Y.F. Xie	2341
Study on the Interaction between Offshore Constructions and Marine Environment J.J. Qi, S.Y. You and Z.Q. Yin	2347
Numerical Analysis of the Influence of Saltwater Intrusion on the Deepwater Channel in the Changjiang Estuary J. Gu, X. Qin, W. Chen, D.Q. Ma and X.L. Wang	2352
Numerical Simulation on Sudden Siltation Induced by Winner Storm and Large Waves in Outer Channel of Huanghua Port, China W.S. Zhang, J.S. Zhang, C. Chen and H.J. Zhao	2357
The Research on Causes of the Landslide from Typhoon in the Coastal Area of Wenzhou and its Protection Measures B.H. Sun	2365
Effect of Western the Fourth Phase Project on Hydrodynamic Condition for Shijiu Port in Rizhao J.R. Li and D.S. Yu	2369
Essential Type of Bank Collapses in the Middle-Lower Yangtze River and Corresponding Preventive Measures X.N. Zhang, C.Y. Chen and D.D. Jia	2374
Hydraulics Characteristics of the Close Gap in Large-Scale Beach Reclamation Works in Radial Sandbanks K.F. Chen and J. Shen	2379

Chapter 7: Seismic Engineering

The Computational Analysis and Evaluation on the Seismic Response of Base Isolated Benchmark Building X.Z. Li, B. Li, H.C. Fu and W.M. Xiang	2387
Study on External Wall Panel of Industrialized Housing and Seismic Behavior of Connection Joint J.H. Yu, G. Zhang and J.P. Li	2394
The Appraisal Example of the Reliability and Seismic Performance of a Reinforced Concrete Chimney F. Yang, D.P. Lv, H. Cao, Y.F. Zhou and Y.R. Wu	2399
Long-Period Displacement Spectra of Near-Fault Strong-Motion from Tremendous Earthquakes H. Li, C. Lian and Y.Y. Kong	2405
Buildings Setbacks Research From Surface-Fault-Rupture Statistical Analysis J.Y. Zhang, J.S. Bo, G.D. Xu and J.Y. Huang	2410
Probability Analysis of Longitudinal Horizontal Nonlinear Stochastic Seismic Response of Reinforced Concrete Bridge W.C. Chen, W.J. Yang and C.G. Sun	2419
Comparative Study on Major Damage Index Models L. He and X.G. Ye	2424
Pseudo-Dynamic Testing Method Based on External Displacement Control D.P. Wang and S.Z. Tian	2428
Implementation of Data Record Simultaneously in Seismic PSD Test X. Guo, G.L. Bai and P. Sun	2433

Numerical Simulation of Tectonic Stress Field in Longmenshan Tectonic Belts after Earthquake S.R. Su, H.J. He, Y. Zhang and P. Li	2440
Analysis on Earthquake Damage Forms and Affecting Factors of Underground Cavern H.C. Ren and Z.Z. Shen	2444
Applied Research Of BP Neural Network In Earthquake Prediction W.S. Hu, H.L. Nie and H. Wang	2449
Experimental Study on Seismic Performance of Connections between T-Shaped Concrete-Filled Steel Column and Steel Beam B. Cao, S.B. Dai, M.S. Lin and J.X. Liu	2455
Seismic Response of Slab Culvert in Loess Region H.B. Wang, Y.T. Pan, J.M. Shen and J.J. Zheng	2461
The Site Effect Analysis of Semi-Cylindrical Canyons and Soft Alluvial Basins by H/V Spectral Ratio C.C. Chen, W.S. Shyu, C.S. Yeh and C.S. Ting	2465
The Kinetic Performance of High Pier under Seismic Load H.T. Liu	2469
<i>In Situ</i> Monitoring Test for Rock Slope Stability in Li County Earthquake Zone of Sichuan Province J.H. Liu	2473
Parametric Reliability Analysis of the Seismic Bearing Capacity of Bottom Columns in Reinforced Concrete Frame Structure Y.B. Jiang, Y.L. Zhao, W.J. Yang and Z.L. Gong	2478
Identification of Multi-Axial Seismic Loadings from Several Structural Dynamic Responses K. Zhang, H. Li, Z.D. Duan and S.S. Law	2483
Decision-Making Model for Ranking Earthquake Emergency Events Based on Intuitionistic Fuzzy Sets F.S. Wang, L.F. Wu, Q.B. Rong and H.J. Zhang	2488
Pregnant Environment Analysis Model of Earthquake-Induced Underground Engineering Slope Based on Gray Relation and Variation F.S. Wang, L.F. Wu, Q.B. Rong and H.J. Zhang	2494
Seismic Response Analysis of the Curved Bridges with Different Line Shapes X.L. Yan, Q.N. Li, F. Yang, C. Gao and L. Wei	2501
Disasters Characteristics of 2008 Wenchuan Earthquake and Analysis of Buildings Destruction T.T. Guo, X.W. Xu and G.H. Yu	2505
The Principle and Idea on Reducing Earthquake Disasters Using Light Reinforced Soil T.S. Hou, W. Wang, X.J. Yang and H. Ouyang	2514
Ground Motion Parameters Influences on Input Seismic Energy M. Du, X.Y. Guo and Y. Zhao	2520
Earthquake Disaster Prediction of Multi-Story Masonry Building in Yinchuan City S.R. Tang	2524
Research on the Seismic Behavior of Concrete-Filled Steel Tubular Column and Steel Beam Joint Y.Z. Yin and Y. Zhang	2528
Seismic Behavior Analysis of Bank Intake Tower Structure H.T. Zhao, C.W. Yue, Y. Wang and Y.J. Luo	2533
Seismic Design and Safety Evaluation Analysis of Reinforced Slope with Geogrid in 200m High Core Rock-Fill Dams H.J. Li, Z.W. Yan and Y.Y. Zhang	2539
Study on Energy Dissipation Mechanism and Collapse-Resistant Performance of RC Frame-Shear-Wall Structure under Strong Earthquake Z.W. Miao, Z.Y. Qiu and Y. Ming	2550
Seismic Damage Analysis for Multi-Story Masonry Building with R. C. Frames on Ground Floor D.Z. Wang, J.W. Dai and C.X. Zhang	2555
The Seismic Performance Test of Precast Prestressed Shear Wall R.R. Fu, Z.C. Liu, Q.L. Yin and K. Su	2559

Numerical Simulation of Semi-Active Control during Hazard Evolution under Strong Earthquake in ABAQUS S.J. Sun and G. Feng	2563
Seismic Response Analysis of Pile-Soil Interaction in Super High-Rise Building Y.N. Zhang, X.L. Jiang and W. Yan	2569
Ambient Vibration Test on Earthquake Damaged R/C Building Structures J.W. Dai, Y.Q. Yang and D.Z. Wang	2576
Frame Structure of the Aseismic Appraisal and Strengthening Research Y.Z. Yang and H. Gan	2580
Design of SMA Damper and Analysis on Seismic Control of Frame Structure D.J. Xing, B.Q. Yang and M.D. Wang	2584
Seismic Behavior of Composite High-Rise Buildings with SRC Column, Steel Beam and RC Core Tube B. Zhao and J. He	2590
The Strength of Fresh Concrete after Simulated Earthquake at Magnitude of 9 B. Liu, G.J. He, G.H. Li, M.Q. Xu, J.D. Wei and K. Wang	2595
The Analysis of Test of the Seismic Response for the Metro Station Structure Considering Soil-Structure Interaction Y.M. Zhou, S.W. Wang, P. Wang and L.N. Yao	2600
The Dynamic Response Analysis of Piled Wharf System under Seismic Excitation S.P. Zhang, C.Y. Cui, G. Yang and Z.T. Wang	2605
Full-Scale Test on Seismic Performance of Masonry Structure D. An, T.J. Qu and J.W. Liang	2610
Research on The Internal Force and The Normal Displacement of The Storage Tank under Earthquake Action Y. Yu, H.W. Guan, Y.F. Zhang and Z.Q. Yuan	2618
A Study of Evaluation Model Relating to Building Seismic Damage-Case Study at the Taiwan 921 Earthquake Areas K.W. Chen, C.H. Tu, J.N. Chang and J.W. Chen	2623
Risk Assessment Model of Multimode System for Earthquake-Induced Landslide in Small Watershed S.J. Tian and J.M. Kong	2629
Study on Seismic Performance of Symmetrical Steel Framed Building that with and without ERB and FPS Isolators D.Z. Xia	2634
The Ultimate Seismic Capacity Research of Concrete Gravity Dam Considering the Initial Crack P.S. Yu and W.Q. Wang	2641
Calculating Size Limitations of Non-Load-Bearing Walls under Seismic Loads C.X. Yang, Q.Q. Liu, L.J. Sun and J.G. Liang	2646
Seismic Reliability Analysis of the Reinforced Concrete Beam Bridge Base on the Maximum Earthquake Response Z.H. Zhang and W.J. Yang	2653
Study on a Roller-Footing Isolated Single-Pier System B. Wei and S.S. Li	2658
Studies on Performance-Based Seismic Design for RC Frame Structures with Energy Dissipation J.Y. Sui, D.T. Niu and C.M. Xu	2662
Research on Probability and Statistics of Vulnerabilities in Recent Chinese Earthquake Y. Ji and C.F. Han	2667
Numerical Analysis of Soil Nail Walls under Seismic Condition in 3D Form Excavations S. Zamiran, H. Ghojavand and H. Saba	2671
Steel Braces in Series with Hysteretic Dampers for Reducing the Seismic Vulnerability of RC Existing Buildings: Assessment and Retrofitting with a Nonlinear Model D. Cancellara and F. de Angelis	2677
Seismic Reliability Analysis of Single-Degree-of-Freedom System when Structural Response is with Markov Property Z.H. Zhang and W.J. Yang	2690

Study of the Limit State Equation Applied to the Deep Slide Stability of Gravity Dams under Earthquake Action X. Xu and Y.S. Huang	2694
Background Factors Analysis and Risk Evaluation Based on Fuzzy Theory in Wenchuan Seismic Landslides M. Han, X.Y. Fan and J.P. Qiao	2698
Seismic Performance of Steel Frames for Sustainable Structural System S.H. Oh and H.S. Ryu	2705
Amplification Effect of Near-Fault Vertical Ground Motions on Horizontal Deformation Response of Structures J. Yin, X.Y. Zhou and J. Yin	2713

Chapter 8: Surveying Engineering, Cartography and Geographic Information System

Spatio-Temporal Modeling on Village Land Feature Change H.J. Zhu and H.R. Wu	2721
Visual Processing of the River Cross-Sectional Data Q.Q. Duan and R.H. Wu	2726
Grey Forecasting Model Refining in Deformation Prediction Based on Semi-Parametric Regression N. Gao and X.M. Cui	2731
Determination of Spacing between Anchored Piles in Row for Deep Foundation Pit G.Q. Du, S.J. Wang, Y.T. Qin and C.Z. Zhu	2736
Classification of the Sky in Shah Alam, Malaysia Using Measured Sky Radiance and Luminance N. Yeop and A.Z. Ahmed	2740
Delineation of Rural Settlement Boundaries in the Upper Reaches of Min River, China M.T. Ding and Q. Wang	2744
A Development of 3-Dimensional Coordinates Monitoring System for Underground Pipeline Using IMU Sensor S.H. Cho and E.S. Lee	2749
The Development History and its Research Status of the Technology of Ground Penetrating Radar L. Yang	2753
Application of Ground-Penetrating Radar on Geophysical Prospecting for the Building Foundation in Karstic Region S.K. Ma, X. Yao, Y.Z. Huang and X.B. Zhou	2757
Study on Surveying Data Processing of Engineering Distortion Based on Entropy F.B. Zhou and Y.Q. Chen	2762
Key Technology on Constructing Modern Geodetic Control Network in Shandong Province D.B. Wang, J. Zhang, X.L. Fang and X. Wang	2766
Advanced PS-INSAR for Land Subsidence Monitoring in Cangzhou X.Y. Yu, M. Huang and J. Zhang	2772
New Technology for Field Survey of Traditional Settlements Y. Song, Z. Li and Y. Li	2777
GPS Level Fitting Algorithm M.H. Liu, X. Yin and X.B. Sun	2783
The Research on Ambiguity Processing of GPS Deformation Monitor J. Yang and H. Wu	2787
Application of Coordinate Conversion in the Tunnel through X.D. Qi and Z.Y. Wang	2792
Application of GIS Digital Technology in Planning of Tourism Scenic Spot C. Chen, C. Chen and X.L. Sun	2796
Discussing of Subsidence Monitor Data Processing Methods Based on Improved GM (1, 1) C.J. Huang, Y.Z. Cao, L.M. Hu and Q.S. Zhou	2800
ICA Spatiotemporal Filtering Method and Its Application in GPS Deformation Monitoring D.W. Huang, W.J. Dai and F.X. Luo	2806

Analysis of Temperature Trends and Spatial Variability in Huaibei Plain X.T. Yuan, G.W. Xu and G.L. Xu	2813
--	------

Chapter 9: Monitoring and Control of Structures

Monitoring and Reinforcement Technology of Passing Weak and Broken Rock Strata for Tunnel Boring Machine T. Li, K.B. Liu, W.H. Yang, B. Liu and Y.C. Liu	2819
Study on the Method of the Damage Identification for Frame Structure Y.F. Yang, S. Li and L. Ling	2824
Monitoring Measurement of Vehicular Tunnels and Finite Element Numerical Simulation Analysis L. Chen, L. Wang and L. Zhang	2832
Analysis of Seismic Checking of Panel Zone with Unequal Beam Height in Steel Structures S.J. Dai, H.Y. Shi and X.T. Wei	2837
Assessment of Load Carrying Capacity for Concrete Rectangle Section Simple Beam Subjected to Fire G. Zhang, S.H. He and H.J. Guo	2841
Study on the 3G Wireless Network Tunnel Safety Monitoring System J.B. Song	2846
Analysis on the Energy Dissipation of the Composite Isolated Structure under the Near-Field Multi Pulse Ground Motion H. Li, D. Liu and Y.F. Du	2850
The Inspection Method Research on Air Voids of Externally Bonded FRP for Strengthening Concrete Structures H.B. Xu and Z.C. Deng	2855
Stepwise Regression Arithmetic and its Application on Slope Safety Monitoring L. Chen, B.B. Wu and J.Y. Liu	2859
Analysis of Shear Capacity of Stirrup Corroded RC Beam Based on the Truss-Arch Theory K.B. Zhang, Z. Zhang, J.R. Zhang and B. Liu	2865
Different Fuzzy Controllers Analysis for MR Structures Y.Q. Guo	2874
Experimental Study on the Axial Loading Tests of RC Columns Strengthened with Steel Tube M. Zhou, J.W. Li and J.M. Duan	2878
Application of Wavelet Packet Analysis in Damage Alarming for Steel-Frame Structure N. Zhang, Z.B. Wei, Z. Wang and S. Wu	2883
Analysis of Bending Stiffness of Reinforced Concrete Beams Strengthened with Carbon Fiber Sheet Y. Han, H.B. Liu and T. Guo	2887
Structural Nonlinear Damage Detection Based on ARMA-GARCH Model C. Cheng, L. Yu and L.J. Chen	2891
Analysis Computational Model and the Equivalent Stiffness at the Elastic Stage of the Coal Ash Wall Board Filled with Core Powder Q.S. Zhao and M.X. Xu	2897
Bearing Performances of a Strengthened Chinese Ancient Beam by Simulation Q. Zhou and W.M. Yan	2903
Structural Damage Detection Based on Curvature Mode Shapes and Neural Network Technique G.Q. Du, C.Z. Zhu, L.J. Long and M. Zhang	2907
Cyclic Testing of Bolted Flange Plate and Double Split Tee Type Weak-Axis Steel Moment Connections K.M. Lee, R. Li and L.Y. Chen	2913
Cyclic Testing of Welded Free Flange Type and Welded Flange Plate Type Weak-Axis Steel Moment Connections K.M. Lee, L.Y. Chen and R. Li	2922

Development and Application of Spatial Analysis and Management System of Dammed Lake Based on 3D GIS	
F.X. Chai, T. Sun, X.T. Li and S.F. Huang	2932
Ecological Farm Masonry Structure Detection & Appraisal in Sichuan Emei	
P.B. Fu, K. Nie and Y.T. Gao	2937
Structural Damage Detection Using Inner Product Vector and Low Pass Filter Technique	
L. Wang and Z.C. Yang	2942
Experimental Study of Damage Identification on Space Rigid Frame Structure	
Z.H. Fang, P.F. Yue and W.N. Zhang	2947
Application of the Fuzzy Analytic Hierarchy Process in Pipeline Risk Factor Weight	
L.J. Cai and W.J. Zhang	2951
Study on Hybrid Control Method of Mega-Sub Controlled Structure Subjected to Seismic Action	
D.Z. Xia	2955
Study on the Safety Monitoring and Control Technology of Artificial Island Construction on Radiating Sandbar	
Z.L. Zong, Z.D. Zhang and D.R. Yao	2962
Cluster Health Monitoring System of Major Urban Bridges Based on Digital City VPN Network	
Y.Q. Pan, Y. Li and G.L. He	2966
Deformation Monitoring and Environmental Protection for Deep Foundation Pit Engineering	
T.H. Qian, H. Wu, G.W. Zhao and B.H. Fu	2970

Chapter 10: Reliability and Durability of Structures

Study on Volume Stability of High Strengthen High Performance Concrete	
R.X. Hao, X.Y. Guo and J.M. Zhao	2977
Inner Defect Induced Crack Growth Analysis and Fatigue Life Prediction for Anthropogenic CO₂ Pipelines	
Q. Jin, M. Li and Q. Wen	2981
Reliability Appraisal of a Detachment of Traffic Police Houses	
Z.Q. Wang and T. Ouyang	2985
Influences of Temperature and Time on Concrete Compressive Strength after Natural Cooling	
W. Zi, Z.W. Yu, P. Liu and Z.S. Li	2990
Crack Resistance Capacity Analysis of SRC Column-RC Beam Node	
B. Yuan, M.H. Zeng and K.J. Ma	2994
Application of Virtual Crack Close Technique in the Static Crack Growth Based on Strain Energy Release Rate Criterion	
C. Cheng, S. Wan and Z.W. Jang	3002
Shear Capacity of Concrete Beams Reinforced with Continuous FRP Rectangular Spirals	
B.H. Li, S.Y. Jiang, Q.H. Shi and X.Q. Hu	3009
Analysis of the Fatigue Crack Propagation Life-Span Based on Linear Elastic Fracture Mechanics	
Z.W. Jiang, S. Wan and C. Cheng	3016
Experimental Study on Deposition Promotion and Erosion Control for Pit Collapse	
Q. Ying and S.Y. Yuan	3022

Chapter 10: Reliability and Durability of Structures

Stability Analysis of a Reinforced Soil Slope Based on the Strength Reduction Method	
L. Wang and S.M. Wang	3031
Treatment Technology for Embankment Landslide Caused by Expansive Soil Foundation Instability	
X.Y. Tang and Y.P. Li	3035

Finite Element Analysis of the Corrosion Prestressed Concrete Beam H.B. Zou and X.Y. Luo	3040
An Efficient Method for Structural Reliability Analysis L. Ying	3044
Experimental Research on the Stability of Spatial Lattice Shell G. Tang, W.W. Li, L.F. Yin and X.M. Guo	3048
Analysis of Properties of Reinforcing Steel Bars: Case Study of Collapsed Building in Lagos, Nigeria J.K. Odusote and A.A. Adeleke	3052
Basic Discussing on Constructive Faults of Mortar Masonry Retaining Wall and Their Prevention Measures B. Wang, H.L. Liu and H.P. Ren	3057
Stability of Cable-Arch Structure H.J. Kang, Y.Y. Zhao and H.P. Zhu	3061
The Specific Properties Research of RC Beams Multiple Strengthened with Near-Surface Mounted Carbon Fiber Reinforced Plastic Bar and Pre-Stressed Helical Rib Bar Z.H. Ren and X.T. Zeng	3068
Analysis of Dynamic Stability for Composite Laminated Beam with Delamination J.H. Yang, D.L. Chen and M.Z. Ning	3074
The Stability Analysis of Tailings Dam under the Fluid-Solid Coupled Interaction K. Yang, H. Han and Z.C. Ma	3078
Cracking Behavior Analysis of Carbon Fiber Reinforced Concrete Beam Z.H. Lu and X.S. Gu	3082
Application of Pressure Grouting for Crack Strengthening in Sanqing Hall J.H. Ye	3086
Research on Interface Critical Fracture of Different Materials Based on Critical Fracture Curve H.X. Zheng and C.Y. Chen	3090
Research on Impact Response and Failure Modes of H Section Steel Frame Columns Subject to Blast Loads Y.F. Liu and H.G. Lei	3094
Effect of Local Concrete Strength Decline on High Piers' Nonlinear Stability Y.G. Xiao and Y.J. Liu	3099
Crack Analysis on Reinforced Concrete Beams Strengthened by Externally Prestressing Vertical Tensioning Method B.W. Shi and T.W. Wang	3104
A Study on Carbon Fiber Influence to Rebar Corrosion in Concrete Q. Yang and X.E. Zhu	3114
Fracture Mechanism of Joints of Steel Box Column-H Steel Beam and Performance Study of Joints Strengthened with Haunches Q.Z. Tang, W.Z. Wang, X. Zhao, H.L. Shi and C. Peng	3119
Testing Research for Deformation and Rigidity of Lightweight Aggregate Reinforced Concrete Beams under Fatigue Loading G.Y. Lei, C.H. Wu and S.M. Li	3123
ANN-Based Structure Optimization with Fatigue Reliability Constrains L.R. Sha and Y. Yang	3128
Strength and Stability Analysis on Storage Silo of Concrete Mixing Plant X.X. Zhou, Y.L. Tang, C. Liu and G.Y. Hu	3132
The Durability Study of Concrete in Sulfate Environment H.X. Qiao, Y. Li, Z.M. He and J.M. Dong	3137
Study on Deformation and Stability of High Slope with Weak Intercalated Layers L. Jiang, J.H. Sun and W.S. Wang	3142
Effect of Migrating Corrosion Inhibitor on Corrosion Rate of Reinforcing Steel in Concrete with Various Admixed Chloride Z.Y. Liu, X.G. Zhou and X.L. Li	3146
A Study on the Crack Propagation Process in Concrete Structures Using Energy Method S.W. Hu, Z.X. Mi and J. Lu	3151

Research on Safety Risk Identification of Continuous Beam Based on Deflection Reliability W.H. Luo, P. Wang and W.J. Yang	3156
Laminated Composite Beam with Bonded CFRP Reinforcement Stress Performance Analysis Y.W. Wang, Y.Q. Guo and H.X. Li	3160
Research on Temperature Field of CFST Member under Solar Radiation J.L. Fan, H.C. Zheng, Q. Zhang, M. Ding and Y. He	3164
Comparative Analysis of AE Signals from Damage Processes of Concrete Using Different Sensors Y. Wang, Z.Z. Xu, Y. Wang, G.J. Lu and H.T. Zhao	3169
Pitting Corrosion Propagation Analysis of Reinforcement in RC Bridge Beams Considering Uncertain Information Y.F. Ma, J.R. Zhang and L. Wang	3174
Experimental Analyses of Dynamic Damage of the Reinforced Concrete Pile R.J. Li, R. Yan and H.T. Li	3182
An Economic Analysis on Regeneration Concrete Hollow Block S. Gu, C. Wang, L. Li, Y.P. Gan and K. Lin	3186
Evaluation of the Fire Resistance of H-Section Steel Columns and Beams I.K. Kwon and Y.B. Kwon	3190
Influence of Geometry Parameters on Durability of Concrete Structures Exposed to Chloride Environment X.G. Zhou and H. Xia	3194
Ant Colony Algorithm and Application in Inspection of Concrete Structure Defects W.H. Zheng and Z.H. Wang	3201
Experimental Research on Shear Property of Steel Bar/Wire Mesh Mortar Strengthening Concrete Beams Y.H. Sun, Q.D. Chen, J.W. Liu and G.J. Xiong	3206
Classification of Durability of Concrete Structures Based on Environmental Action K.B. Zhang and Y.L. Yan	3213
Study on Damage Patterns of Corroded High Performance Concrete Column Under Large Eccentric Loading F.X. Sun and Y.H. Zhu	3218
Study of Post-Fire Bearing Capacity of Self-Stress Ceramsite Concrete Filled Steel Tubes J.M. Wang, J. Zhang, X.T. Wang and H.L. Sun	3222
Study on Buckling of an H-Shaped Steel Member with Initial Geometric Imperfection P. Niu, G. Yang and C.F. Jin	3226
Chemo-Damage Model for Concrete Anisotropic Expansion Caused by Alkali-Aggregate Reaction J.W. Pan, Y.J. Xu and F. Jin	3230
Simulation of Improper Construction Procedure and Crack Analysis W.X. Huang and L.Y. Tan	3236
Influence of Slag Fineness on Durability of High-Performance Concrete H. Liu, P. Li and Q.L. Jin	3240
Quick Start Study on Bioleaching Method J.X. Fu, X.N. Zhang and R.X. Zhang	3244
Shaking Table Tests on Chinese Ancient Tenon-Mortise Structure Strengthened by Steel Components Q. Zhou and W.M. Yan	3251
The Application of Artificial BP Neural Networks and Monte-Carlo Method for the Reliability Analysis on Frame Structure Z.C. Xue and H.J. Wang	3256
Countermeasures on Prevention and Treatment of Structural Cracks for Premixed Pump Concrete C.Y. Zhang and Z.Y. Zhou	3260
Fatigue Stress Analysis of Diaphragm Cap Hole in Orthotropic Steel Bridge Decks M.Y. Yang, R. Liu, B.H. Ji, H.J. Xu, C. Chen and D.D. Zhao	3265
Structural Stress Analysis of Trough to Deck Plate Weld in Orthotropic Steel Bridge Decks M.M. Wang, C. Chen, B.H. Ji, R. Liu and D.D. Zhao	3270

A Space-Time-Dependant Design Method and the Stability of Ice Wall for Deep Shafts X.S. Chen	3275
A Probabilistic-Based Durability Analysis of Concrete Structures Exposed to Chloride Containing Environment W.H. Shi, Z.W. Yu and Y.C. Kuang	3282
Influence of Stirrup Corrosion on Shear Strength of RC Beams X. Xue, H. Seki and Y. Song	3287
Modeling Coupled Flow-Stress-Damage during Creep Deformation R.B. Wang, W.Y. Xu and J.C. Zhang	3294
Influence of Aggregates on Cracking Sensitivity of Concrete X. Chen, J.J. Yan and H.Q. Yang	3299
The Impact of Cracks on Different Age of Concrete Small-Sized Hollow Block Masonry Y. Wang, Z.J. Shi and Y.D. Hu	3303
The Numerical Analysis of Failure Length about Buried Steel Pipeline with Frusta under Static Load and Dynamic Load X.L. Li and Z.L. Yin	3307
Experimental Research of Low Shear Wall with SMA Bars Concealed Bracings W.J. Ren, P.F. He and R. Jia	3311
Aerated Concrete Composite Reinforced Concrete Shear Wall Thermal Insulation Layer Stress Analysis and Crack Control M. Yang, J.G. Liang and W.J. Yang	3315
Effect of Cement Composite's Ductility on the Flexural and Cracking Behavior of Reinforced Cement Composite Beams H.D. Yun and J.N.S. Kim	3325
The Detection and Analysis of Reservoir Dam Crack Depth and Grouting Quality Analysis J.Y. Zhang and X. Gao	3329

Chapter 11: Natural and Technogenic Disasters Prevention and Mitigation

The Vertical and Horizontal Spectra of Near-Fault Ground Motions J. Yin, X.Y. Zhou and G.J. He	3335
Research on Supervision System of Hazardous Chemical of Small & Medium-Scaled Cities in China Based on WEBGIS X.Y. Wan and H. Yang	3340
Study on China's Debris Flow Distribution and Occurrence Trend N. He and N.S. Chen	3345
Numerical Simulation on Failure Modes of Light Steel Columns under High Temperature and Explosion S. Yan, B.X. Qi, H. Yan and L. Yang	3351
Hazard Assessment of Debris Flows Based on Catastrophe Theory Y.L. Shang Guan, Q. Wang, L.M. Xu and G.Z. Pan	3357
Time-Dependent Effect for Reinforced Concrete T-Shaped Section Beam Exposed to Fire G. Zhang, C.J. Wang and S.H. He	3361
On Fire Protection Problems and its Countermeasures about Chinese Ancient Architecture H.Q. Li, Y. Yu and X. Yu	3365
Numerical Simulation of Flow over Mountainous Valley Terrain C.G. Li, Z.Q. Chen and Z.T. Zhang	3369
Human Factor Risk Analysis and Prevention Based on the Gas Storage and Transmission Facility Accident L.J. Cai, L.N. Su and K.C. Sun	3373
Numerical Simulation Research on Coal-Gas Outburst in the Process of Development F. Cai	3377
Study of Geological Disaster Information System Based on Skyline F.F. Xu, T.P. Liu and Y.M. Zhang	3384
Zonation of the Landslide Hazards Based on Artificial Neural Network Z.W. Wang, D.Y. Li and J. Ning	3389

Validation Experiments of Five Fire-Extinguishing Agents on Preventing Wood Stack Fire from Reburning	3393
S.S. Li, Y. Gao, G.W. Zou, H. Dong and Y.M. Zhang	
Study on Statistical Analysis in the Characteristics of Frequency Changes of Typhoon Landed in China	3397
Y.X. Wang, X.M. Yuan and M. Yang	
Experimental Study of Post-Fire Behavior of Steel Fiber Reinforced Ceramsite Concrete Filled Steel Tubes	3401
J.Y. Zhang, X.T. Wang, P.X. Sun and H.L. Sun	
A Review of Study on Chinese Debris-Flow Risk Assessment	3405
J. Wang, S. Yang, X.J. Ji and G.Q. Ou	
Study on Interpretation of Landslides Based on Gis — Taking New Fengjie County in Chongqing as an Example	3409
L. Yang, R.N. Lu, D.J. Tan, H.B. Xie and Z.F. Luo	
Research on Simulation Model of Nonstationary Stochastic Processes in Natural Disasters	3415
C.Y. Hu, Q.J. Chen and Q.Y. Xu	
Numerical Analysis and Simulation of Spatial Concrete Frames after Fire	3423
M. Xia, J.T. Yu and Z.D. Lu	
Experimental Investigation on the Fire Resistance Performance of L Special-Shaped Steel Reinforced Concrete Columns	3433
L.T. Gao, Y.F. Gao, Z.X. Yang, Q.Y. Shan and G. Gao	
The Calculating Method of Erosion Depth of Viscous Debris Flow	3441
Y. You, Y.B. Zhao and J.F. Liu	
Calculating Temperature Distribution in Concrete Encased H-Section Steel Column in Fires Using TFIELD	3445
Y.J. Liu, R. Bi and Y. Wang	
Research on the Dam-Break Hazard Vulnerability Assessment Index System and Methods of Tailings Pond	3450
G.D. Mei and Z.Z. Wu	
Study on Hazard Analysis Method of Earthquake Secondary Fire Disaster in Urban Area Based on GIS	3457
T.Q. Li and F. Geng	
Lessons Learned From Major Environmental Accidents and Regulations on Hazard Control in China	3462
P.L. Xue, X.F. Sun, Y. Song, Y.J. Cheng and D.Z. Sun	
The Application of Gas Drainage Technology in the Workface of "Three Soft" Specially Thick Coal Seam	3469
G.L. Lu, C. Wang, Y.D. Jiang and H.W. Wang	
Dynamic Responses of Buried Pipelines Under Impact Loading Caused by Landslide	3476
X.X. Zhu, S.F. Xue, X.H. Tong and C.Q. Liu	
The Calibration on Nonlinear Single Return Period Storm Intensity Model Parameters by the New Blending Accelerating Genetic Algorithm	3480
B.Z. Ren, J.C. Lu and H.T. Zhou	
Mechanism and Prediction Research of the Surface Mining Subsidence of Thick Loose Layers in Mining Area	3488
H.R. Zhang, G.B. Zhang, Y.Y. Sheng and P.C. Sun	
Bridge Disaster Prevention and Disposal Methods in Mining Area	3494
Q.J. Wen and H. Lu	
Study on Early Warning of Slope Safety Based on Field Monitoring	3499
J.H. Sun, L. Jiang and W.S. Wang	
Comparison and Validation of Thermal Radiation Models for Hydrocarbon Jet Fire and Fireball	3503
S.G. Yang, Y.D. Zhang and H. Wu	
Characterization and Triggering Mechanism of Underground Engineering Hazards in a Terrestrial Oil Field in Central China	3513
W. Zhu, C.W. Li and S.Q. Gu	

Discussion on Construction of Control System of Environmental Risk Source for Expressway Transportation Accidents of Dangerous Chemicals in Water Environmental Sensitive Areas	
S.G. Shao, Y. Shen, W.S. Yu, K.J. Fu and S.Y. Yan	3520
The Stability Analysis of Nantong Coal Mine Waste Dump, Chongqing and Prevention Measures	
X.T. Zhao, X.C. Gao and D.S. Li	3526
GPS Monitoring and Warning on Bazimen Landslide	
N.Y. Wang, J. Wu, L. Xia and J.B. Zhao	3532
Analysis of the Bond Strength Influence to the Impact Force of Landslip-Collapse Soil	
X.J. Ji, G.Q. Ou, S. Yang and J. Wang	3539

Chapter 12: Building Science and Technology

Preliminary Research on Design Method of Sustainable & Open Residence	
Z. Tan and A.F. Wang	3547
GIS Based Large Scale Modeling and Archiving of Buildings in Historic Conservation Area: Take Luojia Hill Historic Conservation Area for Example	
Q. Niu	3553
Virtual Construction Technology Applications in Building Based on DELMIA	
J.H. Cui and G. Jiao	3557
The Analysis of the Industrialized Buildings in Heilongjiang Province	
S.J. Sun, L.G. Shi and G.C. Zhou	3561
Transformation on the Design for Sustainable of High-Rise Residential Buildings – The Case Study of Shanghai Combined Apartment Building	
L.M. Ngo and Z.Y. Li	3565
Expansive Soil Damage to Buildings and the Treatment Methods in Jijie	
H.M. Gong, W.L. Liu, F.Q. Dong and X. Li	3571
Analyse the Benefit of Technical and Economic of Crowded Reamed Pile	
Z.J. Wang	3576
Test Research on Loading Safety and Space Finite Element Analysis of Existing Buildings Reconstruction	
Z.Q. Wang and T. Ouyang	3580
A Study on the Balcony Thermal Environment Design in China's Cold Zones	
B.L. Chen	3584
Simulation of Wind Pressure for Self-Stayed Rod Based on CFD	
X. Song, G.S. Xu and P. Li	3588
Seismic Isolation Design of Multistory Building	
X. Song, P. Li and G.S. Xu	3592
The Modeling of the Real Building Object by Using the Model of a Two-Layer Beam of Variable Rigidity on an Elastic Basis	
A. Vladimir Igorevich and B. Elena Vjacheslavovna	3596
The Study of Relationship between Aspect Ratio of the Buildings and the Sunshine Spacing	
G.W. Wujin	3600
A Nonlinear Analysis for the Retrofitting of a RC Existing Building by Increasing the Cross Sections of the Columns and Accounting for the Influence of the Confined Concrete	
D. Cancellara and F. de Angelis	3604

Chapter 13: Traditional Construction Materials

Research on Absorption of Special Impregnated Paper for Plywood Formwork	
X.Q. Sun, C.S. Zhao, X.Q. Yang and W.Y. Xu	3619
Study on Hot-Pressing Process of Low-Cost Straw Particle Board	
Q.F. Ling, X.G. Li and Y.L. Yan	3624
Experimental Study on Impact of Production Process Parameters on Rubber Asphalt Performance	
W. Hou	3629

Cement Hydration Kinetics Research Based on Center-Particles Hydration Model L. Wu, B. Yan and B. Lei	3634
Cement Hydration Models Research Based on Composition Content of each Phase of Minerals C.H. Rao, L. Wu and B. Lei	3639
Effect of Hydration Products Transformation for Compressive Strength of Autoclaved Silicate Products C.J. Ke, S.Y. Wang and J.L. Liu	3644
Thermal and Drying Cyclic Loading for Cement Based Mortars and Expanded Polystyrene Foam Layers D.S. Passa, A.B. Sotiropoulou, Z.G. Panderarakis and G.D. Mitsopoulos	3648
Study on the Temperature and Humidity Control Performance of Hwang-Toh Finish K. Lee, D.W. Yeom and B.G. Lee	3652
Influence of Shrinkage Compensation in Cement Matrix on the Tension Stiffening of Reinforced Strain-Hardening Cement Composite (SHCC) Tension Ties H.D. Yun, S.C. Wang and C.G. Cho	3660
Mechanical Properties Test Research on Mass Concrete Mixed with Different Fly Ash Bulk Volume J.H. Liu, X.H. Liu and W. Han	3664
Application of Spent Bleaching Clay for Producing Environmental Brick S.X. Wu, S.S. Huang, C.B. Tan and H. Cai	3668
Study on the Waterproofing Agent for the Mineral Wool Board D.H. Dai, C.Y. Sun, F.Y. Li, Y.J. Yang, X.G. Ren and Z.M. Wang	3672
Experimental Research on the Influence of Steel Reinforcement on the Crack Resistance of Ready-Mixed Concrete W.J. Yang, S. Yuan and Y.B. Peng	3677
The Method Analysis of Using Finite Element Method to Determine the Bending Moment Formula of Precast Reinforced Concrete Composite Thermal Insulation of External Wall Y. Wang and Y.E. Sui	3682
Study on Influence of Composite Ultra-Fine Fly Ash on Crack Resistance of Pavement Concrete Q.T. Qin and Y.J. Li	3686
Modeling of Vapor Pressure Build-Up in Heated High-Performance Concrete J. Zhao, J.J. Zheng and G.F. Peng	3691
Mechanics Performance Test Study on High Performance Concrete with High Content of Fly Ash X.Y. Guo and R.X. Hao	3695
An Experimental Study on Mechanical Properties for Ternary High Performance Concrete with Fly-Ash, Blast Furnace Slag, Silica Fume J.E. Kim, W.S. Park, S.H. Cho, D.G. Kim and J.M. Noh	3699
Research on the Application of Slipform Concrete of Well Tower in winter X. Zong	3703
Five-Phase Sphere Model for Elastic Modulus of FRP-Confined Concrete M.H. Liu, Y.F. Wang and H.L. Wu	3707
Experimental Research of Reclamation Performance of Recycled Asphalt Pavement Material at Weihai Area B.H. Gong, H.J. Ji and P.J. Wang	3712
Effect of Mineral Admixtures on Chloride Binding Mechanism in Concrete Q. Zhu, Y. Chen and L.H. Jiang	3716
Effect of Stray Current on Chloride Binding Mechanism in Concrete Q. Zhu, L.H. Jiang and Y. Chen	3720
Finite Analysis on Performance of Joint between Gangue Concrete Filled Steel Tubular Column with through Rebar and Gangue Concrete Beam under the Monotonic Loading G.C. Li, C. Fang and H.P. Yu	3724
Influence of Sulfate Attack and Drying-Wetting Cycle on Properties of Mortar D. Chen, N. Wang and C.H. Jiang	3731
Stress Analysis of Local Compression on the Center of Plain Concrete Column Y. Wang, L. Zhai and L.M. Chen	3736

Application Study on the Steel Fiber Reinforced Concrete W. Cui and Q. Luo	3740
Experimental Research about the Effect on Bond Properties between Ceramsite Concrete and Reinforcement with Age W.J. Yang, L.S. Li and Y. Wang	3744
Rutting Resistance Property of Warm Recycled Asphalt Mixture L.Y. Yang, Y.Q. Tan, Y.M. Dong and E.G. Li	3749
Experimental Study on Accelerated Speed of Concrete Sulfate Attack H.F. Liu and F.J. Huang	3754
The Research on the Effect of Granite Powder on Concrete Performance P.J. Ying, F.S. Liu, S.X. Ren and G.G. Dong	3760
Research on the Capability of Basal Layer Stabilized Gravel by Cement and Fly-Ash Y.M. Han, X.X. Shi, L. Wang and D.M. Zhang	3765
The Influence of KCl on the Performance of Oil Well Cement Slurry X.W. Cheng, S. Huang, Y.Y. Yang, Z.Y. Li and X.Y. Guo	3771
New Advance of the Rheological Properties Test of Fresh Self-Compacting Concrete Based on V-Funnel X.L. Wu, J.J. Shi and Z. Shan	3776
Study on Dynamic Performance of Silica Fume Concrete W. Wu, C. Zhang and K.H. Wu	3782
Fatigue Properties of 316L Stainless Steel X. Zhao	3786
Influence of Superplasticizer on Anti-Carbonation Property of Concrete C.S. Zeng, M.Z. Gong, M.M. Gui, X.Q. Guo, J.X. Liu and T.X. Lin	3790
Relationship of High-Temperature Performance and Aggregate Gradation of Asphalt Mixtures Based on Fractal Theory J.B. Huang and X. Yu	3795
The Relationship between Mechanical Properties and Shrinkage of the Concretes Used in Florida Y.J. Liu and M. Tia	3799
Mechanical Properties of Reinforcing Bar HRB335 after Corrosion Y. Wang and L. Ping	3805
Experimental Study on Mechanical Properties of Hybrid Fiber High-Strength Concrete X.L. Liu, S.F. Liu, B.D. Qin and D.F. Yang	3809
Applied Research on Straw Bale in Northwest Rural Residential Building X.P. Li	3815
Application of Epoxy Resin Concrete in Covers Y.J. Jin, X.S. Yin and L.G. Xiao	3819
Research on Performance Concrete Made with Slay-Fly Ash and Ground Limestone L. Sun and H.T. Zhang	3823
Experimental Study on Reinforced Concrete Beam with Embed in Basalt FRP Bars B.R. Zhu and Y. Song	3827
Research on Influence of Fly Ash on the the Microstructural Characteristics of Sea Sand Concrete G.L. Zhang, J.B. Chen, L.W. Mo, J.Z. Liu and Z.M. He	3831
An Investigation of Strength and Deformation Behavior on Shale Ceramsite Concrete Shear Walls W.C. Chen, W.J. Yang and T. Wang	3835
Effects of RE on Inclusions and Mechanical Properties of Weathering Steel X. Liu and H.F. Zhang	3843
Effects of Sample Preparation Methods on Tensile Strength of Red Clay Z.T. Zeng, H.B. Lu, J.J. Zhang and Y.L. Zhao	3847
Fatigue Life Analysis of Asphalt Mixture Coupling with Loading Intermittent Time L.Q. Luan and X.G. Tian	3852
New Applications of Glass Materials in Buildings C. Zhang, J. Wan and Z.H. Wang	3859
The Research Development of Plywood Building Templates Z.J. Zhang, Z. Jia and G.L. Li	3863

Hydration Performance and Pore Structure of Fly Ash-Cement Pastes X. Li, Y. Dong and H.Q. Yang	3867
Tensile Properties of JLF-1 Steel at Elevated Temperature H.L. Li	3872

Chapter 14: Novel Constructional Materials and Functional Materials

Synthesis and Characterization of Comb-Like Polycarboxylate Superplasticizer Y.H. Fang, Z.J. Jiang, Y.L. Ke, X.L. Chen, F.L. Zheng, Z.D. Lan, M.Q. Guan, G.X. Lai, T.X. Lin and M.M. Gui	3881
Study on Low-Temperature Performance of Asphalt Mixture Impacted by Modified Asphalt and Polyester Fibers X. Yu and J.B. Huang	3886
Research on Mechanical Properties of Solidification Agent Stabilized Iron Tailing Gravel S. Yin, C.L. Xiao and J.C. Yue	3890
Experimental Study on the Influence of Water Cement Ratio on the Compressive Strength of Shale Ceramsite Concrete Z.M. Cao, Z.G. He and Y. Yang	3895
A Study on the Influences of Crumb Rubber Modified Asphalt L.Y. Chen, Q.L. You and X. Qiu	3899
TSDC Study of Space Charge Influence on PP Film by Steep Front Impulse Injection Z.H. Kong, B. Xu and Z.F. Luo	3905
Effect of Calcium Promoter on Ni-Based Catalysts Supported on α-Al₂O₃ and TiO₂-P25 A.H. Fakeeha, A.S. Al-Fatesh, A.A. Ibrahim and A.E. Abasaeed	3909
Effect of Bamboo Powder on Curing Behaviors of Liquefied Bamboo-Based Resol Resin X.H. Liu, M.M. Zhang, S.Y. Fu, S.H. Li and C.P. Wang	3914
Experimental Study on the Crack Consequences of Shale Ceramsite Concrete Aggregate W.J. Yang, Q. Kong, Z.P. Yu and Y.C. Ren	3920
Application of Prepacked Aggregate Concrete Technology in Gravity Wharf Reinforcement S.M. Li, T.G. Chen, K. Wang and G.F. Ma	3926
Study on Structure and Performance of PTFE/YSZ Composite Microporous Membrane J.L. Du, X.H. Deng and Y. Sun	3930
Research of Mechanical Properties of Asphalt Pavement Materials with WMA and RAP B.Y. Yu, Y. Wang and M.J. Zhang	3934
Preparation of Polyurethane-Poly(butyl acrylate) Hybrid Latexes via Miniemulsion Polymerization S.J. Wang, Y.L. Wang, P.F. Yang and T.D. Li	3938
Orthogonal Experiment and Analysis of the Concrete which Use the Shell as Aggregate C. Gao, Z. Pan and X.Z. Wei	3942
Experimental Research on the Change Rule of Frequency of Shale Ceramsite Reinforced Concrete Beam with Damage W.J. Yang, Q. Kong, Z.P. Yu and Y.C. Ren	3946
Synthesis and Characterization of SrSiO₃ by Chemical Deposition Method Z.Q. Zhang, Y.L. Wang, X.A. Yue, E.Z. Wang and L.Z. Zou	3952
Frost Resistance of Steel Fiber Reinforced Micro-Expansive Concrete Filled Steel Tube T.M. Mou, X.J. Zhou, B.K. Fan and Q.J. Ding	3956
Effects of Fiber Content and Water Ratio on the Strength of Fiber Reinforced Mortar Y. Wang, W.H. Xuan, Y.Z. Chen, X.H. Chen and G. Zheng	3961
Non-Destructive Evaluation of Composite Laminates by Using Fiber Optic AE Sensor J.C. Hao, J. Wang and Y.M. Yu	3965
On Effects of Fly Ash as a Partial Replacement of Cement on Concrete Strength R.J. Case, K. Duan and T.G. Suntharavadivel	3970
Application Prospect of Basalt Fabrics Wall Material X.E. Li	3974
A New Constitutive Model of Superelastic SMA W.J. Ren, J.S. Jia and X.S. Chen	3978

Tension Stiffening and Cracking Behavior of Ultra High Strength Strain-Hardening Cement Composite (UHS-SHCC) Ties in Monotonic and Cyclic Tension Y.J. Song and H.D. Yun	3982
--	------

Chapter 14: Novel Constructional Materials and Functional Materials

Effect of Heat-Curing Procedure on Strength and Microstructure of Reactive Powder Concrete Having High Volume of Mineral Admixtures Y.Z. Peng, W. Yang and Q.S. Zhu	3989
Fabrication and Study of Abandoned Glass Fiber/Polypropylene Flame-Retardant Fiberboard L.H. Lv, M. Zuo and X.G. Su	3994
Thermal Properties and Morphology of Electrospun PEG/PVP Composite Fibers as Novel Phase Change Materials Q.S. Shi	3998
Durability of Cement Mortar with Surface Treated by Superabsorbent Resin Synthesized <i>In Situ</i> D. Zhang, X.F. Song and T.S. He	4002
Performance Studies of Lightweight Concrete Mixtures Made with Rigid Polyurethane Foam Wastes G. Wang, Y.Q. Liu and Y. Cui	4007
Study on Exfoliation Resistance of Ferro Superalloy Composite Oxide Scale H.T. Wang, S.J. Zhou, H.S. Yu and Z. Chu	4011
Experimental Study on Force-Bearing Performance of Road Concrete which Modified by Fiber and Rubber Powder H.B. Li, B. Wang and Y.Y. Zou	4015
Experimental Research on Physical and Mechanical Properties of EPS Recycled Concrete Y.X. Rao, C.F. Liang and Y. Xia	4022
Experimental Research on the Work Performance of Ceramisite Concrete with Mineral Admixture Z.M. Cao, L.S. Li, Y. Wang and W.J. Yang	4026
Load-Bearing Capacity of CFDST Based on the Unified Strength Theory G.Y. Xia, J.J. Li and M.L. Yang	4031
Dynamic Mechanical Behavior Study for the Fabricated Composite with High Anti-Corrosion Properties G.N. Liu, H.D. Zhao, Y.M. Li, Q. Zhu, Y.H. Du and M.H. Zhao	4038
Development of the Propertie and Process of Slot Wedge Cunibezrsi Copper Alloy Heat-Treatment Strengthening H. Li, Z.B. Ma, F.X. Bu and T.X. Li	4042
Study on the Design of Steel-Bamboo Composite Member J.G. Huang, Y.S. Li, B. Yang and Y.F. Du	4047
The New Synthesis of Novel Organic Light-Emitting Material Spirobifluorene by Ullman Coupling Y.Z. Lou, X.X. Sun and Y.C. Li	4051
Study on Dry-Shrinkage Properties of Layer Hybrid Fiber Reinforced Concrete D.Q. He and Y.Y. Zhao	4055
The Use of Nanosilica for Improving of Concrete Compressive Strength and Durability J. Bi, I. Pane, B. Hariandja and I. Imran	4059
Effect of RE on Cyclic Oxidation Behavior of Ferrite Stainless Steel X. Liu and L.M. Wang	4063
Kinetic Spectrophotometric Determination of Ruthenium by its Catalytic Effect on the Reduction of Spadns with Sodium Hypophosphite in Micellar Media Z.R. Zhou and L.Z. Zhang	4067
Toughening Analysis for Eutectic Composite Ceramic Containing Lamellae X.H. Ni, C. Chen, X.Q. Liu and W.H. He	4071
Preparation and Study of a New Polyurethane Curing Agent H. Song, X.H. Deng and Q. Li	4075

The Research on Hot Compression Mechanism of Light Alloy J.W. Liu, S.Q. Lu, X.J. Dong, X. Xiao and G.F. Li	4079
Mechanical Properties and Volume Deformation of Steel Fiber Reinforced Micro-Expansive Concrete Filled Steel Tube X.J. Zhou, T.M. Mou, B.K. Fan and Q.J. Ding	4083
Effect of Compatibilizers on Composite Materials of Bio-Ethanol Byproduct-Poly(lactic acid) M.M. Zhang, X.H. Liu, C.P. Wang and L.W. Jin	4088
Experimental Study on the Influence of Ceramist Properties Compressive Strength of Shale Ceramist Concrete W.J. Yang, Z.G. He and Y. Yong	4093
A Review of Smart Material and Vibration Control for Civil Engineering Structure L.P. Qin and Y.J. Yan	4097
Effects of Activating Solution and Liquid/Solid Ratio on Engineering Properties of Metakaolin-Based Geopolymer T.R. Yang, T.P. Chang, C.T. Chen, Y.K. Lee and B.T. Chen	4101
The Effect of Curing Time on Compressive Strength of Composite Cement Concrete M.A. Uddin, M. Jameel, H.R. Sobuz, N.M.S. Hasan, M.S. Islam and K.M. Amanat	4105
Finite Element Study on Influence of Ring Beam at Top Window Sill Elevation on Temperature Effect of Masonry W.J. Yang, N. Guo and H.D. Zhang	4110
Discussion the Effect on Improving Granite Bituminous Mixture Performance by Adding Coupling Agent A.Q. Zhang, Y.M. Wang and C.Y. Zhuang	4115
Analysis of New Construction Materials and its Development B. Wang, J. Cheng and X.H. Zhang	4119
Effects of Ceramsite Concrete Strength on Natural Frequency Based on ANSYS H.Q. Wang, Q. Kong, Z.P. Yu and W.J. Yang	4124
Deterioration of Enamel and Epoxy Coated Steel Rebar in 3.5 wt.% NaCl Solution F.J. Tang, X.M. Cheng, G.D. Chen, R.K. Brow, J.S. Volz and M. Koenigstein	4128
Preparation and Characterization of Phenolic Foam Modified by Nitrile Butadiene Rubber Powder L. Li, Y.Z. Xu, C.P. Wang and F.X. Chu	4137
Research on the Paving Performance of Montmorillonite/SBS Modified Asphalt Mixtures Z.G. He, X.D. Tang, W.J. Yin, Y.F. Sun and Z.B. Liu	4143
Synthesis and Performance Research of Ester Polycarboxylate Superplasticizer X.L. Chen, Y.H. Fang, Z.D. Lan, Z.J. Jiang, Y.L. Ke and M.Q. Guan	4147
Effect of Fly Ash on Thermal and Mechanical Properties of Expanded Perlite Insulation Product Z.B. Li, X.W. Wu and X.C. Chen	4151
Innovative Use of Wood Materials in Modern Home Design Q.L. Gui, F. Su, R.B. Hu and X.Y. Liu	4156
Effects of Sn on Mechanical Properties of Magnesium Alloy AZ61 J.Y. Liang	4161
Moisture Absorption of Laminated Bamboo Composite and its Influence on Mechanical Properties Z.X. Yu, Z.H. Jiang and G. Wang	4165
Preparation and Characterization of Microencapsulated Phase Change Coating J.X. Yu and T.Q. Liu	4173
Study on Influence Factors of Rubber Concrete Compressive Strength W. Wu, C. Zhang and Y. Li	4177
Synthesis of Polycarboxylate: Its Characterization and Application as a Superplasticizer in Concrete X.Y. Mo, X.S. Feng, C.J. Yu and Y.J. Jing	4181
Preparation and Properties of Microencapsulated Phase Change Materials T.Q. Liu, L.Y. Yang, F.R. Ma, R.X. Liu, Y.Q. Wen and X. Wu	4187
Dielectric Properties of Sol-Gel Prepared Ni-Doped $\text{CaCu}_3\text{Ti}_4\text{O}_{12}$ Ceramics L. Jiao, H. Li, Y.W. Yang and T.P. Wang	4193

Green Building Materials in the Building of Application J. Ke	4197
Effect of Slate Powder on Mineral Admixtures in Suppressing Alkali-Silica Reaction of Slate Aggregate X.X. Peng, G.H. Li, W. Huang, Y.F. Li and X.C. He	4201
Preparation of PZT Ferroelectric Thin Films by Sol-Gel Process Y.F. You, C.H. Xu, J.P. Wang, Y.L. Liu, J.F. Xiao and Y.T. Dong	4207
Synthesis and Characterization of Poly(N-Arylenebenzimidazole Ketone) Y.W. Xu, J. Tang, G.J. Chang, F.H. Zhu and L. Zhang	4211
Catalytic Membrane and their Photocatalytic Properties C.Y. Hu, X.B. Zhang, X.Y. Li and H. Chen	4215

Chapter 15: Heating, Gas Supply, Ventilation and Air Conditioning Works

Thermodynamic Analysis of Biomass and Natural Gas Combined Cooling Heating and Power System Y.Y. Jing, T.F. Chen, J.J. Wang and H.L. Zhao	4221
Performance and Benefits Evaluation of Two Water-Source Heat Pump Systems for District Heating X. Chen, J. Han and J. Zeng	4225
Research on Waste Heat Recovery in Drain Water of Barbershop F.T. Sun, N. Wang, Y.Z. Fan and D.Y. Li	4229
Simulation Analysis of Heat Transfer on Low Temperature Hot-Water Radiant Floor Heating and Electrical Radiant Floor Heating H.B. Qi, F.Y. He, Q.S. Wang, D. Li and L. Lin	4234
Experimental Study of the Effect of Different Well Flow Quota on Groundwater Thermal Flow Transport Variation X.Z. Zhou, Q. Gao, C.Q. Ma and X.W. Zhao	4239
New City Gas Leak Detection Method and its Application X.N. Wu, M.L. Hu, B.J. Shang and Y. Xian	4245
Thermodynamic Optimization Characteristics of a Type I Absorption Heat Pump within Finite Time X.L. Zhao, Y. Li and L. Fu	4250
Simulation of Transient Heat Transfer Based on Element-Free Galerkin Method and Increment-Dimensional Precise Integration Method F.L. Mei and G.L. Li	4254
Influence of Covering Layer on Surface Temperature of Floor Radiant Heating System H.Q. Zhao, Z.H. Wang and L.S. Zhang	4260
Stress Influence Factor Analysis of Gas Pipeline in the Tunnel X.N. Wu, H.Y. Ma, Y. Zhou, M.L. Hu and Y. Xian	4264
Study on the Ventilation and Dehumidification System Integration Framework for City Buildings in Hot Summer and Cold Winter Zone X.P. Yu and X.Z. Fu	4270
Discussion on the Design of Freezing Dehumidification-Based Radiant Air-Conditioning System C.Y. Tan, H.Q. Wang and H. Zhu	4274
Modeling and Simulation of Chilled Water System for Central Air Conditioning J.M. Sun, C.D. Zhang and Z.Y. Zhou	4280
Research of Energy Saving Control for Central Air-Conditioning Based on Adaptive Fuzzy PID Method J.M. Sun, C.D. Zhang and Z.Y. Zhou	4286
Using CFD Method to Simulate Respiratory Aerosols Transportation in Ventilated Built Environment G.H. Feng, Y. Zhang and X.Y. Lan	4292
Numerical Study of the Respiratory Aerosols Transportation in Ventilated Classroom G.H. Feng, Y. Zhang and X.Y. Lan	4298

Numerical Study on Heat and Mass Transfer of Plate Falling Film Absorber with Wire-Meshed Fins	4305
J.J. Zhang, D.D. Zhao, L.C. Wan, B.H. Zhang and Y.P. Chen	
Solving Transient Heat Transfer Problems by the Convolution Type Semi-Analytical DQ Method	4315
J.S. Peng, G.B. Luo and L. Yang	
Numerical Simulation and Experimental Study of Wind Distributor	4320
Y.T. Li, L.Y. Sun, H.T. Na and L. Liu	
Numerical Simulation of Gas-Particle Turbulent Flow Using k_g-ϵ_g-k_p-ϵ_p-k_{pg}-θ Turbulence Model	4327
Z.X. Zeng, F. Xue and Y.H. Xu	
Research on Risk Comprehensive Evaluation System of Gas Supply Company Based on WebGIS	4332
R.F. Tang and Y.Q. Bai	
Theoretical Analysis and Experimental Researches on Internal Heat Exchanger in CO₂ Trans-Critical Cycle	4336
H.X. Lu, J. Lv, Z.B. He, J.Y. Wang and J.W. Zhou	
Evaluation of the Influence of One Air Circulation System on LGS House Indoor Thermal Environment	4343
J. Li, Z.Q. Deng, C. Li and D. Zhou	
Improvement of Transductive Support Vector Machine and its Application to Enhance Antifreeze Heat Transfer Capability in Ground Source Heat Pump System	4349
M.F. Yan and J.H. Wang	
Experimental Verification and Analysis of Thermal Comfort with Radiant Floor Cooling	4356
Q.F. Li, Z.T. Zhou, W.D. Sun, T. Li, L.F. Zhao and C.C. Pan	
Analytical Solution of Unsteady State Conduction Problem with Heat Source	4364
S.Y. Su and Q. Huang	
Study on Induction-Ventilation-Based Insulation Properties	4368
J.P. Fu, Z.H. Liang, Y.F. Tian, J.C. Li and Y.Q. Feng	
Ventilation Technology and Low Temperature Storage of Granary in China	4372
W.L. Tang and Y.H. Di	
Design and Research on One Avoiding-Clogging Equipment in Untreated Sewage Heat Pump Air Conditioning System	4378
Z.B. Liu, J.L. Zhang and L.D. Ma	
Heat Flux through Naturally Ventilated Building in Malaysian Climate	4384
F. Morris, N.Z. Zakaria and A. Zain Ahmed	

Chapter 16: Applied and Computational Mechanics

Mode-II Stress Intensity Factor by Triangular Williams Element with Generalized Degrees of Freedom	4391
H. Xu and L.F. Yang	
Numerical Simulation Analysis on Mass Concrete Thermal Stress	4396
G.L. Tian and Y. Wang	
Testing and Analysis of the Dynamic Parameters of 3D Reciprocating Compressor Foundation	4400
X.L. Wan and S. Zhang	
An Eigenfunction Expansion Method in the Stress Concentration Analysis	4406
Y. Bai and L. Chen	
Siltation of Approach Channel and its Influence on Ship Grounding	4410
Y.J. Li, J.M. Mou, Y.L. Ren and X.J. Lin	
A New Model of Orthotropic Bodies	4418
J. Ke	
A New ERR and Strategy for Bi-Directional Evolutionary Structural Optimization	4422
D.K. Zhang, W.P. Zhang, H. He and C. Wang	
Some Results for the Davey-Stewartson System on a Circle	4429
T.J. Chen, Y.F. Fang and Y.J. Hong	

Micro-Stress-Field of Lamellar Inclusion in Eutectic Composite Ceramic X.Q. Liu, X.H. Ni, J. Zhang and X.F. Meng	4433
The Triple-Shear Unified Analytical Solution of Stress and Displacement of Softening Material Thick Walled Cylinder J.H. Ma	4437
Research on Mode of Deformation Forecasting Based on the Maximal Lyapunov Exponent X.P. Wang and T.C. Jiang	4443
Rigidity Test Research of Rigid and Flexible Flange Connection in Power-Transformed Frames H.B. Li, J.F. Yang, Y.L. Peng and Y. Xiang	4449
Nonlinear Dynamic Response of Buoys under the Collision Load with Ships L.H. Chang, C.B. Jiang, M.J. Liao and X. Xiao	4455
Application of Differential Transform Method to Buckling Problems at Pinned-Clamped Boundary Conditions L.F. Han, N. Deng and S.Y. Wu	4460
Research of the Pile Bent Property under the Horizontal Load J.P. Tang, Y.F. Xie, R. Liu and W.Q. Tang	4465
Experimental Research on Interface Mechanic Behavior of the Composite Steel-Concrete Beams G. Fu	4471
Solving the Linear Time-Fractional Wave Equation by Generalized Differential Transform Method X.H. Chen, L. Wei, J.Z. Sui and L.C. Zheng	4476
Numerical Analysis for Bolt Length Based on the Stress Response of Anchorage Surrounding Rock B. Wang, F.J. Zhao and W.B. Peng	4481
A Novel Numerical Method for Computing Stress Intensity Factors H.D. Su and Y.F. Qi	4486
The Effect of Boundary Conditions on Simulation of Horizontally Homogeneous Atmospheric Boundary Layer X.L. Yang, Z.W. Huang and L. Yang	4490
Identification Method Research of Elastic Buckling Load of the Compressed Beam at Two Ends Elastic Fixed L. Du and F.C. Li	4495
Correct Discrete-Continual Finite Element Method of Structural Analysis Based on Precise Analytical Solutions of Resulting Multipoint Boundary Problems for Systems of Ordinary Differential Equations P.A. Akimov	4502
Asymptotic Stability for an Impulsive Model of Hematopoiesis with Time Delay R. Chen and P.J. Ju	4506
Damping of Stay Cable-Passive Damper System with Effects of Cable Bending Stiffness and Damper Stiffness M. Liu and G.Q. Zhang	4513
Time-Domain Dynamic Analysis for Dynamic Positioning System of Deepwater Semi-Submersible L.P. Sun, S.L. Cai and J. Chen	4518
Outline of Electromagnetic Damper and Further Research on Theoretical Model X.Y. Zou, X.T. Wang, G. Yang, B. Liu, Z.Y. Zhao, J.M. Su, Y.C. Zhou and H.F. Gao	4523
A Perturbation Procedure for Limit Cycle and Heteroclinic Connection Analysis of Certain Self-Excited Oscillator Y.Y. Chen, W. Zhao and L.W. Yan	4529
Non-Linear Finite Element Analysis of EPS Module Shear Wall M. Zhang, Y.Y. Jin and L.J. Dou	4533
Nonlinear Analysis for Bending Cross Section of Tensile-Compression Prestressed Concrete Beam J.B. An	4538
Twist Velocity Model of Single Slide Skill on the U-Ground X.Y. Liu, M.Y. Li and S.S. Zhang	4544

Existence of Nontrivial Positive Solutions to a Semilinear Elliptic System D.W. Sun and G.S. Zhu	4548
Energy Estimates of Strictly Contact Homeomorphisms in Contact Dynamical System D.W. Sun	4552
Wavelet De-Noising Method of Blasting Vibration Signal Considering Different Level Noise B. Song, Y. Cao and H.B. Gao	4556
The Application of Vibration Testing in Jinaozhou Pagoda Protection H. Deng and J.B. Peng	4562
A Note on Exact Travelling Wave Solutions for Nonlinear PHI-Four Equation C.H. Xiang	4569
A new Interface Element Method on Computation of the Interface Crack Propagation Energy Release Rate Z.P. Zhong, S. Wan and L.Y. Zhou	4573
Numerical Simulation of Ship Maneuvering on Bend Channel B.J. Dong, J. Lin and Q. Chen	4578
Dynamics in a Van Der Pol Model with Delay C.J. Xu, P.L. Li and L.Y. Yao	4586
The Experimental Study on Mechanical Behavior of Concrete Composite Beam with Detaching-Free Template Q.H. Wang, J.Z. Dong and J.F. Tian	4590
Stress Distribution of Aluminum Alloy Thick-Plate under Abnormal Pre-Stretching K. Liao and Y.X. Wu	4594
The Numerical Research of Two-Degrees-of-Freedom Vortex-Induced Vibrations of Circular Cylinders J.L. Fan and W.P. Huang	4598
Experimental Investigation on Tensile Mechanical Properties of CFRP-PCPs Composite Rebars J.F. Liang, H. Lei and Z.P. Deng	4602
Experimental Study on Mechanics Properties of CFRP-PCPs Composite Rebars under Uniaxial Load J.F. Liang, P.H. Yi and J.P. Li	4606
Conceptual Design and Hydrodynamic Analysis of a High-Speed Deformable Trimaran H.S. Yan, X.Y. Xu and Y.X. Feng	4610
Failure Analysis on Tube Socket Crack of Supercritical Boiler Water Wall Header X.F. Zheng, Y.J. Jiang, Y.T. Feng, Q. Wang, X.G. Niu, X.J. Hao, W.B. Li, Z.W. Li, X.X. Xu and W.P. Li	4616
Experimental Studies on the Effects of Nozzle Structures on Characteristics of Submerged Gas Jet Noise Z.R. Hao and Z.H. Zhou	4620
Numerical Analysis of Variation Law about Vertical Additional Force of Monolayer Shaft Lining X.L. Liu and J.Y. Hou	4624
The Application of Pseudolinear Equivalent System in the Deformation Analysis of RC Structure Members H.X. Yu, X.Y. Chen and X.Y. Wang	4629
Analysis of Four Finite Volume Schemes for Plane Stress Problems Y.P. Qin, Q. Sun, X.B. Yang and G.Y. Zhang	4635
The Increasing of Interface Slip and its Effect on Composite Beams when there Are Cracks in Brittle Material Element Q.H. Gu, X.H. Ni, Y.C. Ma and Z.G. Cheng	4643
Experimental Study of Deformation Characteristic and Application on External Prestressed Wooden Beam J.M. Zhang, J.L. Pan and H.B. Dong	4647
Adaptive Moving Mesh Finite Element Method for Space Fractional Advection Dispersion Equation Z.Q. Zhou and H.Y. Wu	4654
Test on Eccentrically Loaded Four-Tube Concrete-Filled Steel Tubular (CFST) Laced Columns of No Yield Point R. He, X.P. Shu and B.W. Chen	4658

Control Technology of Magneto-Rheological Damper Based on Impact Load F. Li, L.P. Lin, W. Hu and G.L. Meng	4664
Identification of the Nonlinear Vibration Characteristics Based on the Wiener Kernels Y.C. Ren and Y.H. Yu	4668
Shock Wave Stress Concentration to Solve Large Drill-Jamming Problem Y.X. Sun, R.Y. Li, M. Ding and Z.W. Shen	4673
A Novel RNA Genetic Algorithm for the Parameter Estimation of the Fluid Mechanics with Multiple Solutions G.H. Fang, X.Y. Si, X.P. Chen and J.H. Zhou	4679
A Coarse Grid Correction to Domain Decomposition Based Preconditioners for Meso-Scale Simulation of Concrete J.P. Wu, J.Q. Song, W.M. Zhang and H.F. Ma	4683
Fourier Analysis of the Effect of Non-Constant Terms on the Convergence Properties of SIMPLE Algorithm Formulated on a Staggered Grid F. Wang, L. Zheng and Y.T. Li	4688
Measurement Method in Model Test of Ice Breaking by Air Cushion Vehicle Z.H. Zhang, C. Wang, J.N. Gu, T. Miao, L.F. Wang and B.B. Sun	4694
Nonlinear Dynamic Response of Piezoelectric Cylindrical Shell with Delamination under Hygrothermal Conditions J.H. Yang and D.L. Chen	4698
The Influence of Chord Yield-to-Tensile Stress Ratio on the Static Strength of Unstiffened CHS K-Gap Joints under Static Axial Loading C. Kaluba and M.M. Tawana	4702
Nonlinear Forced Vibration Analysis for Thin Rectangular Plate on Nonlinear Elastic Foundation Y.G. Xiao, C.P. Yang and H. Hu	4716
FEM Research on Deepwater Risers Installation H.X. Liu and X.J. Ding	4722

Chapter 17: Computer Application, Mathematical Modeling and Analysis

The Trajectory Planning of Robotic Operation Simulation Based on Virtual Reality H.Y. Dong, Q.H. Sun, X. Lu and Z.M. Liu	4729
A Tapering Method in the Construction of Covariance Regularization S.Q. Wang and F.X. Song	4734
A CFD Simulation of Strouhal Number for U-Shaped Section Aqueducts Y.C. Li, X.J. Zhang and S.W. Jia	4738
Parameters Identification of Dual-Rate Hammerstein Systems Based on Finite Input Response Models K. Qin and J. Chen	4742
Analysis of Image Texture Features Based on Gray Level Co-Occurrence Matrix Y. Chen and F.Y. Yang	4746
The Properties of Case-Weight Model when the Row and Column of Design Matrix Simultaneous Mitted Z.W. Chen and W.K. Xu	4751
Research on Characteristic Properties of Gray Level Co-Occurrence Matrix Y. Chen and F.Y. Yang	4755
Prediction of Dynamic Deformation Monitoring Based on IGA Artificial Neural Network Model Y. Zhu and Q. Zhao	4760
A Matching Theorem in FC-Spaces with the Application to Coincidence Questions K.T. Wen	4766
Study on Critical Anchorage Length of Bolts by Numerical Simulation Method B. Wang, J.N. Zhou, F.N. Jin and M.R. Jiang	4771
A Remark on Invariant Scrambled Sets L. Huang, H.Y. Wang and H.Y. Wu	4776

Development of Conversion Program from ETABS to ABAQUS J.C. Li, J. Ji and Y.X. Yuan	4780
An Equation Involving the Smarandache Function B. Chen	4785
An Improved Algorithm of Histogram Equalization to Increase Brightness of Image in Mine Y.B. Yuan, B. Zhang, X.H. Yuan, X.P. Zhang, W.Z. Xia and Y. Chen	4789
Business Procurement Software Application for Project of Universal Studio of Singapore L.H. Li	4794
Positive Radial Solutions for Elliptic Systems with Nonlocal Conditions S.L. Xie	4800
Design and Implementation of the Simulation Model of a Certain Communication Gateway Q.Z. Zhou, C.F. Qiu, W. Zhang, A.P. Liu and H.L. Han	4809
Digital Image Measurement Technology for High-Rise Structure Torsion Deformation Measuring S. Huan, C. Xu, X.Q. Fan and Z. Cheng	4813
Research on Numerical Integration Algorithm for MDOF Pseudo-Dynamic Test X. Guo, L.H. Zhu and T.L. Wang	4820
A Heterogeneous Strategy Genetic Algorithm and its Application in Dynamic Optimization of Structure L.W. Yan and Y.Y. Chen	4827
Rules of CST Blunt Edge Roundness and the Influence on Collision Characteristics Z.B. Lei, L. Yang and M.X. Lei	4831
Oscillation Criterion of Third-Order Nonlinear Neutral Damped Functional Differential Equations Y.H. Zeng	4835
Deterministic Method of Floor Rock Permeability Tensor of Mining over Confined Water and Application in Numerical Simulation W.T. Liu, J.J. Shen and Y.J. Liu	4840
Structure Optimal Design for Portable Exoskeleton Using Improved Particle Swarm Optimization F. Liu, W.M. Cheng and Y. Zhou	4845
Weibull Model Based on the Maximum Entropy Principle and its Applications on Elements Grade Distribution L. Wan, P. Chen and X.Y. Hu	4851
Integrated Design of Control/Structural Systems Based on Genetic Algorithm B. Xu, Y.L. Zhang, S.X. Yao and J.S. Jiang	4855
Estimation Based on Expectation Theory J.T. Zhu, C.Y. Sun and Y.Y. Jiao	4868
Integrated 3D Spatial Data Model of Object-Oriented Digital Landslide D.X. Ma, X.H. Liu and L.W. Ma	4872
Load Distribution Calculation of Pile Group Using Artificial Bee Colony Algorithm G.S. Su, K. Qian and Y. Zhang	4878
The Influence of the Convective Terms Discretization Scheme on the Simulation Results of Architectural Numerical Wind Tunnel J.F. Wu, C.H. Wang and C.L. Song	4884
The Selection of Pressure Velocity Coupling Algorithm in the Numerical Wind Tunnel of Arch Roof J.F. Wu, C.H. Wang and L.P. Yi	4888
The Turbulent Flow Model Selection for Numerical Wind Tunnel Simulation of the Low Layer Double Slope Roof J.F. Wu, C.H. Wang and Y.C. Zhao	4892
Analysis on Equivalence between Transfer Function and Equivalent Circuit Simulation in General Hamiltonian Modeling J. Qian, Y. Zeng, L.X. Zhang and T.M. Xu	4896
A New Method of Sensitive Analysis Based on the Weighted Inverse Topological Change Method P. Liang, Q. Zhang and J. Wei	4900
A New Method to Mine Classification Rules Y.J. Dun, Y.B. Shao and S.L. Tian	4904

An Advanced Multi-Objective Genetic Algorithm Based on Borda Number J. Zou and Y.G. Wu	4909
Motion Simulation of Dual-Frequency Vibrating Screen Y.J. Hou, P. Fang, Q.Y. Liu and J. Liang	4916
A New Construction Method for Web-Based Large-Scale 3D Terrain Model Z.P. Li, Z.G. Wang and H.L. Jia	4922
Research of Information Retrieval Based on Web Page Segmentation Y.X. Yu	4928
Reliability Model of Series and Parallel Systems under Imperfect Information B. Suo, C. Zeng, Y.S. Cheng and J. Li	4932
A Novel Image Registration Approach With SIFT Algorithm and Tangent-Cross-Point Feature Z.L. Song	4936
Application of Virtual Reality Technology for Emergency Evacuation in High-Rise Buildings J.F. Zhang and S.P. Wang	4941
Decentralized NExT/ERA and RDT/ERA System Identification in Wireless Smart Sensor Networks D.Y. Cui, K.G. Xin, B.F. Spencer and Y.F. Liu	4946
Simulation and Implementation of HLA-Based Branch Predictor of Multi-Pipeline Processor J.H. Ye, Q. Xie and Y.H. Xiahou	4952
Classical Models and its Applications in D-S Evidence Theory Y.W. Du and C. Han	4958
Sensitivity of B-Splines Weight Function Neural Networks and its Application on Signal Recognition D.Y. Zhang	4962
The Application of BP Neural Network on Research of DO Influence on Fluidized Bed Step-Feed Process B. Wang, J.K. Zhang, Y.F. Li and J. Li	4967
Numerical Study of Wave Slamming on a Rectangular Slab Y.M. Lan, W.H. Guo and Y.G. Li	4971