# Table of Contents

Preface, Conference Organization and Organizing Committees

## Chapter 1: Geological and Geotechnical Engineering

<table>
<thead>
<tr>
<th>Title</th>
<th>Author(s)</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>The Distribution Laws of Interlayer-Gliding Structure Controlled by Panji Anticline and the Research of Quantitative Evaluation in Seams</td>
<td>Q.L. Le</td>
<td>3</td>
</tr>
<tr>
<td>Study on the Application of Rotary Drilling Pile Construction in Expansion Project of Railway Station</td>
<td>Z.L. Lu, L. Wu and Q.J. Zuo</td>
<td>10</td>
</tr>
<tr>
<td>Test Investigation on Mechanical of Unsaturated Loess</td>
<td>Y. Zhu and Y.X. Chen</td>
<td>22</td>
</tr>
<tr>
<td>GA-Optimization on Weiling Space of Steel Sheet Piles Construction</td>
<td>R.J. Zheng, S. Fu and J. Guo</td>
<td>28</td>
</tr>
<tr>
<td>Analysis of Soil Consolidation Characteristics Caused by Pit Dewatering</td>
<td>H.F. Tong</td>
<td>33</td>
</tr>
<tr>
<td>Study on Expansion and Deformation Characteristics of Expansive Soil in Yunnan Province</td>
<td>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</td>
<td>37</td>
</tr>
<tr>
<td>Pile Samples Selection Method Based on Self-Organizing Maps Neural Network</td>
<td>S.S. Liu and Y.L. Fan</td>
<td>41</td>
</tr>
<tr>
<td>Fracture Splitting Mechanism of Jointed Rock Mass under Compressive-Shear Stress and Grouted Pressure</td>
<td>X.L. Jiang and H. Yang</td>
<td>45</td>
</tr>
<tr>
<td>The Finite-Element Analysis of Characteristics of Soil Slope Seepage Field Change in Rainstorm Condition</td>
<td>Z.M. He, W. Wu, L. Zeng and Z.X. Cai</td>
<td>50</td>
</tr>
<tr>
<td>The Experiment Study on Thermal Conductivity of Loess-Like Soil</td>
<td>L.L. Guo, Z.Z. Mei and B.Q. Zhou</td>
<td>59</td>
</tr>
<tr>
<td>Tension-Type Anchor Numerical Calculation by Energy Method</td>
<td>S.S. Liu and X.L. Jiang</td>
<td>63</td>
</tr>
<tr>
<td>Analysis of the Effects on Optimization Design about Double-Row Piles Retaining Structure</td>
<td>Y. Wang, Y.T. Yang, F. Yu and G.L. Hu</td>
<td>72</td>
</tr>
<tr>
<td>Application of TEM in Goaf Exploration</td>
<td>S.J. Feng, S.G. Sun and W.B. Liu</td>
<td>79</td>
</tr>
<tr>
<td>Test Study on the CBR of Lime Improved Expansive Soil after Long-Term Immersion</td>
<td>Y. Dong and B.T. Wang</td>
<td>84</td>
</tr>
<tr>
<td>Fluid-Solid Coupling Analysis the Safety and Critical Distance of the Water-Filled Faults</td>
<td>C.H. Zhao</td>
<td>88</td>
</tr>
<tr>
<td>Discussion on Stability Analysis Method for Tailings Dam</td>
<td>S.R. Lv</td>
<td>93</td>
</tr>
<tr>
<td>Prestressed Anchor Cable and Concrete Bored Pile Combined Support Technology</td>
<td>D.X. Qian and H.T. Zhang</td>
<td>97</td>
</tr>
<tr>
<td>Engineering Application of Detections on Backfill Compactness</td>
<td>S.M. Zhang and L. Zhang</td>
<td>101</td>
</tr>
</tbody>
</table>
Nonlinear Analysis of Settlement for Cohesionless Soil Foundations Based on In Situ 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-In Situ Bored Piles Using Post-Grouting Technology

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 Influence 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 Deformation on Impact Factor of Pile Retaining Wall in Expansive Soil Area

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
Progress in Industrial and Civil Engineering

Slope Stability Analysis under the Condition of Seepage
Y. Jin

DEM Simulation for the Effect of Rolling Resistance on Shear Band
H.X. Tang, X. Zhang and X.H. Chu

Numerical Simulation of Storage Tank Foundation Treated by Water Filling Preloading Method
Y.M. Zhang and X.D. Zhang

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

Estimation of Strength of Massive Jointed Rock Mass Based on Generalized Hoek-Brown Criterion
F.S. Han

System of Groundwater Flow in Multilayer Pore-Fissure Media with Weak Permeability Layer
Y.E. Deng, H.H. Jiang and J. Yu

The Model Test about Over-Consolidated Soils’ Stress and Deformation as Water Pressure Increasing

Evaluation on a Novel Phosphorus Fractionation Method in Acid Soils
H.J. Lei, X. Liu, B.D. Xi and D.W. Zhu

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

Subgrade Stability Analysis with Rainfall Infiltration
L.J. Zhou

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

Determing 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

Numerical Simulation of Soil-Structure Dynamic Interaction System under Blasting Load
W.L. Gao, B. Huang and C. Wang

The Technique of Deep Foundation Pit and Pile Foundation Construction
R. Li, Y. Qiao and Y.J. Liu

Stability Analysis of High Filling Slope Effected by Precipitation Duration
Z.R. Liu and S.F. Luo

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

The Settlement Prediction of Pile Foundation Based on Grey Linear Regression Model
J.K. Liu, J.P. Wang, M. Zhu and X.J. Hou

Bio-Mediated Soil Improvement under Various Concentrations of Cementation Reagent
L.M. Lee, W.S. Ng, C.K. Tan and S.L. Hii

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

Shear Strength Change of Different Water Content after Thawing Remolded Soil
W. Jiang and B.X. Gu

Research of Forecasting Method for Horizontal Displacement of Deep-Seated Subgrade
Y.K. Guo, G. Cheng and X.Y. Le

Application and Research of Slope Flexible Protection System in Engineering
X.P. Ou, S.Q. Zhou, Z.H. Wang, K. Ruan and B. Li

A New Method of Simulating Arbitrary Slip Surface in Soil Slope
Y.W. Zhou, X.J. Cai and J.B. Chen

Study on Incipient Motion of Consolidated Cohesive Fine Sediment

Reinforcement Scheme and Numerical Simulation for Sequential Excavation of the Deep Foundation Pit
R.L. Lu and Q.H. Jiang
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  
467

Vertical Load Mechanism Analysis and Experimental Research on Super-Long PHC Pipe Pile in Soft Clay  
L.J. Zhou, Z.A. 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

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 Landslide 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

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
<table>
<thead>
<tr>
<th>Title</th>
<th>Authors</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Directional Blasting Demolition Technology of 150m-High Reinforced</td>
<td>S.X. Xu and D.Z. Chen</td>
<td>640</td>
</tr>
<tr>
<td>Concrete Chimney and 75m Cooling Tower</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Numerical Modeling of Soil-Pile Interface Behaviors of a Pipe Group</td>
<td>S.H. Hu, S. Fang and Y.F. Chen</td>
<td>645</td>
</tr>
<tr>
<td>Foundation under Complicated Load</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Effect of Soil Moisture on Soil Temperature Field Near Buried Pipe</td>
<td>J. Li, J.P. Fu and W.G. Xie</td>
<td>650</td>
</tr>
<tr>
<td>Shake Table Modeling of Laterally Loaded Piles in Liquefiable Soils</td>
<td>Z.H. Yang, X.Y. Zhang and R.L. Yang</td>
<td>654</td>
</tr>
<tr>
<td>with a Frozen Crust</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Combination GM(1,1) and Stochastic Poroelastic Theory to Prediction</td>
<td>K.W. Chen, C.H. Lee, S.J. Wang, C.H. Tu and</td>
<td>659</td>
</tr>
<tr>
<td>the Land Subsidence in Yunlin and Jiayi Area, Taiwan</td>
<td>J.W. Chen</td>
<td></td>
</tr>
<tr>
<td>Analysis of Settlement of Composite Foundation with Sparse Pile to</td>
<td>J.H. Zhang, Z.Y. Yin and J.L. Zheng</td>
<td>664</td>
</tr>
<tr>
<td>Control Settlement</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Settlement Analysis of Foundation Base on Finite Element Method</td>
<td>X. Song, H. Zhang and G.S. Xu</td>
<td>670</td>
</tr>
<tr>
<td>Analysis of Behavior of Composite Foundation with Sparse Pile to</td>
<td>J.H. Zhang, Z.Y. Yin and J.L. Zheng</td>
<td>674</td>
</tr>
<tr>
<td>Control Settlement</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Parameter Analysis of Foundation Settlement Considering Interaction</td>
<td>X. Song, H.F. Lu and G.S. Xu</td>
<td>680</td>
</tr>
<tr>
<td>between the Pile and Soil</td>
<td></td>
<td></td>
</tr>
<tr>
<td>The Test Analysis on Frost Heave Characteristics of Carbonated Saline</td>
<td>W.H. Wang, W.D. Zhao and Z. Wang</td>
<td>684</td>
</tr>
<tr>
<td>Soil</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stability Analysis of Soil Slope and the Design of Anti-Slide Piles</td>
<td>Y.Q. Li, H. Jing, Q.H. Wang and J.F. Chen</td>
<td>689</td>
</tr>
<tr>
<td>during Unsteady Seepage</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Monitoring and Analysis of Fine-Grained Frozen Soil Temperature and</td>
<td>S.J. Ding, Y.F. Cheng, X.L. Lu and Y.P. Yang</td>
<td>694</td>
</tr>
<tr>
<td>Permafrost Table for Transmission Line Foundation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Application of Nanomaterials in Reservoir Protection</td>
<td>L. Li, Y.M. Li, Y.P. Yang and C. Ma</td>
<td>699</td>
</tr>
<tr>
<td>Numerical Analysis of the Ground Anchor and Row Piles in Mudstone</td>
<td>W.T. Liu, H.Y. Tsai and M.H. Tu</td>
<td>703</td>
</tr>
<tr>
<td>Dip Slope</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Experimental Research on the Liquefaction Potential of Tailings Silt</td>
<td>J.Y. Hu, J.B. Xie, W. Li and C.H. Li</td>
<td>708</td>
</tr>
<tr>
<td>in Zhuziqing Tailings Dam</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Numerical Simulation Analysis on Effects of Freezing and Thawing on</td>
<td>J. Zhu, L.Q. Zou and H.L. Fu</td>
<td>714</td>
</tr>
<tr>
<td>Workover Rig Anchor Pile Bearing Performance</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Study on Soil Pressure of High Fill Retaining Wall in Construction</td>
<td>P. Li and X. Song</td>
<td>718</td>
</tr>
<tr>
<td>Stage</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Estimation of Rock Mass Deformation Modulus in Gas Pipeline Area</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Based on Different Methods</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Comparison and Analysis of Identification of Soil Stratigraphy in</td>
<td>J.P. Wang, Y.N. Wu and Y. Liu</td>
<td>727</td>
</tr>
<tr>
<td>Shanghai between CPTU Test and Laboratory Test</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Identification for Bolt-Surrounding Rock System Based on Wavelet</td>
<td>J.Q. Hu, Y.X. Zhang and J.G. Chen</td>
<td>732</td>
</tr>
<tr>
<td>Neural Network</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Characteristics of Cast-InSitu Concrete Pipe Pile under Lateral Load</td>
<td>Z.T. Ma and Y.P. Wang</td>
<td>738</td>
</tr>
<tr>
<td>Compaction of Saturated Soft Soil Foundations</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Composite Foundations</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
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
<table>
<thead>
<tr>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Study on Testing the Relative Density of Coarse Aggregate by Vacuum Method instead of Basket Method</td>
<td>872</td>
</tr>
<tr>
<td>Z. Li and F. Zhu</td>
<td></td>
</tr>
<tr>
<td>Temperature Field Analysis of Space Grid Structures</td>
<td>877</td>
</tr>
<tr>
<td>G.Y. Wang and N. Wang</td>
<td></td>
</tr>
<tr>
<td>Structural Analysis of the Shallow-Buried Station by Using Load Structure Method</td>
<td>881</td>
</tr>
<tr>
<td>Y.S. Cao and Y.S. Zhang</td>
<td></td>
</tr>
<tr>
<td>The Typical Methods of Using Section Steel Reinforced Concrete Beams and Slab</td>
<td>885</td>
</tr>
<tr>
<td>X.H. Li, C.W. Wang, C.X. Yue and J.D. Cai</td>
<td></td>
</tr>
<tr>
<td>Analyses of the Elastic Modulus Values of Masonry</td>
<td>889</td>
</tr>
<tr>
<td>Y.S. Ni, W.J. Yang and Y.H. Jiang</td>
<td></td>
</tr>
<tr>
<td>Experimental Analysis on Shear Behavior of Sand-Concrete Interface</td>
<td>893</td>
</tr>
<tr>
<td>C.F. Zhao, B.L. Yu and C. Zhao</td>
<td></td>
</tr>
<tr>
<td>The Ultimate Strength of the Concrete-Filled Tubular (CFT) Section Columns</td>
<td>899</td>
</tr>
<tr>
<td>Y.B. Kwon, I.K. Jeong and I.K. Kwon</td>
<td></td>
</tr>
<tr>
<td>Study of Ultrasonic Wave Propagation Characteristics in Multilayer Bonded Structures</td>
<td>903</td>
</tr>
<tr>
<td>C.A. Ai, Y. Liu, Z.G. Xu and J. Li</td>
<td></td>
</tr>
<tr>
<td>Design of Steel-Bamboo Composite Structure System</td>
<td>908</td>
</tr>
<tr>
<td>Y.F. Du, Y.S. Li, B. Yang and J.G. Huang</td>
<td></td>
</tr>
<tr>
<td>Elastic Analysis on Post-Local Buckling of Steel Plates in Thin-Walled Rectangular Concrete-Filled Steel Tube Columns</td>
<td>912</td>
</tr>
<tr>
<td>S.C. Guo and H.F. Liu</td>
<td></td>
</tr>
<tr>
<td>Impact of Environment Temperature Reduction on Force Performance of Steel Silos</td>
<td>917</td>
</tr>
<tr>
<td>Y.D. Sun and Y.P. Wang</td>
<td></td>
</tr>
<tr>
<td>The Key Points in the Design of Supporting Structures for Dual-Track Tracking CSP System</td>
<td>921</td>
</tr>
<tr>
<td>Y. Zhang, F.B. Xu and B. Song</td>
<td></td>
</tr>
<tr>
<td>Three Types of Stress-Strain Relationship’s Comparison of Circular Tubed Reinforced Concrete in FEA</td>
<td>930</td>
</tr>
<tr>
<td>X. Hu and Z.L. Chen</td>
<td></td>
</tr>
<tr>
<td>Research on the Residual Stresses in Cold-Formed Hat-Shaped Section</td>
<td>934</td>
</tr>
<tr>
<td>H.C. Liu and F. Zhao</td>
<td></td>
</tr>
<tr>
<td>Ultimate Capacity of the K-Type Overlapped Rectangular Hollow Section Joints</td>
<td>939</td>
</tr>
<tr>
<td>J.L. Liu and F.P. Zhao</td>
<td></td>
</tr>
<tr>
<td>Numerical Simulation of the Influence of Weld Model on the Response of Stiffened Plates under Blast Loading</td>
<td>943</td>
</tr>
<tr>
<td>X.M. Zhu, H. Zhan and Z.G. Jiang</td>
<td></td>
</tr>
<tr>
<td>Behaviour of Laced Curved Concrete-Filled Steel Tubular Members Subjected to Axial Compression</td>
<td>949</td>
</tr>
<tr>
<td>L.Q. Zheng, Y.F. Zheng and S.L. Guo</td>
<td></td>
</tr>
<tr>
<td>Analysis of Ultimate Loading Capacity of Inner Concave Cable-Arch Structure with Different Arch Rise-Span Ratio</td>
<td>954</td>
</tr>
<tr>
<td>Y.B. Jiang and G.Y. Liao</td>
<td></td>
</tr>
<tr>
<td>A Study on Ductility of Lightweight Aggregate Concrete Shear Wall</td>
<td>958</td>
</tr>
<tr>
<td>W.C. Chen, W.J. Yang and Y. Li</td>
<td></td>
</tr>
<tr>
<td>Research, Application and Promotion of New Isolation Layer</td>
<td>962</td>
</tr>
<tr>
<td>S.P. Shang and H. Zhou</td>
<td></td>
</tr>
<tr>
<td>Foundation Pit Support Design and Construction of a Complex Building in Changchun</td>
<td>968</td>
</tr>
<tr>
<td>H. Xiong, L.X. He and Y.F. Ma</td>
<td></td>
</tr>
<tr>
<td>Experimental Research on the Effects of Pipe Diameter on Axial Compression Properties of GFRP Tubes Reinforced Concrete Column</td>
<td>972</td>
</tr>
<tr>
<td>Y.F. Zhang, S.K. Liu and D.W. Zhao</td>
<td></td>
</tr>
</tbody>
</table>

Chapter 2: Structural Engineering

Simulation Method of Soil Resistance on the Pushover Model of Group Pile Foundations | 981  |
<p>| Y.L. Zhang and T.B. Li                                                 |      |</p>
<table>
<thead>
<tr>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Analysis on Hot summer and Cold Winter Areas of the Thermal Bridge Hybrid Structure</td>
<td>986</td>
</tr>
<tr>
<td>Research on Method of Non-Linear Static Pushover Analysis and Influential Mechanism of Displacement Ductility of Single Pile</td>
<td>990</td>
</tr>
<tr>
<td>Experimental Research and Finite Element Analysis on the Axial Pressure Bearing Capacity of Steel skeleton-Steel Pipe Reinforced Composite Concrete Columns</td>
<td>995</td>
</tr>
<tr>
<td>Summary of joint Connection of Prefabricated Shear wall Structural System</td>
<td>999</td>
</tr>
<tr>
<td>The Vibration of the Raft-Superstructure on the Saturated Soil under Moving Load by Using a Semi-Analysis Method</td>
<td>1003</td>
</tr>
<tr>
<td>Establishment of an Oxidation Ditch Model Based on Flow Pattern and ASMI</td>
<td>1007</td>
</tr>
<tr>
<td>Vertical Deflection of Simply Supported Box Beam with Corrugated Steel Webs Including Effects of Shear Lag and Shear Deformation</td>
<td>1012</td>
</tr>
<tr>
<td>Impact Performance Analysis and Optimization of X-Sandwich Panels</td>
<td>1017</td>
</tr>
<tr>
<td>Comparison between New Concrete Filled Steel Tube Frame Structure and Steel Frame Structure</td>
<td>1024</td>
</tr>
<tr>
<td>Study on Seismic Performance of Infilled Frame of Underlying Weak Layer</td>
<td>1028</td>
</tr>
<tr>
<td>Study on Common Problem and the Design of Granary Railway Canopy</td>
<td>1034</td>
</tr>
<tr>
<td>Arrangement Principle of Hoop-Layers of Imitating Bamboo Drum Type Tridimensional Parking Structure</td>
<td>1040</td>
</tr>
<tr>
<td>Nonlinear Buckling Behaviour of Imperfect Cylindrical Shells under Global Bending in the Elastic-Plastic Range</td>
<td>1045</td>
</tr>
<tr>
<td>Estimation Theory on Cable’s Pretension in Pre-Stressed Mega Brace and Steel Frame Structure</td>
<td>1053</td>
</tr>
<tr>
<td>Experimental Analysis on Low Temperature Welding Construction Method of Big Span Steel Truss Structure</td>
<td>1058</td>
</tr>
<tr>
<td>Dynamic Analysis and Optimization Design on Storage Silo of Concrete Mixing Plant</td>
<td>1062</td>
</tr>
<tr>
<td>Effect of Axial Compression Ratio on Ductility and Bearing Capacity of Specially Shaped Columns with HRB500 Reinforcement</td>
<td>1066</td>
</tr>
<tr>
<td>The Connection Technology between Steel Structure and Wooden Antiqued Components</td>
<td>1070</td>
</tr>
<tr>
<td>The Elastic-Plastic Analysis on Prestressed Concrete Cable-Beam Structure System</td>
<td>1074</td>
</tr>
<tr>
<td>Demolition of a Complex Brick-Structure Chimney with a Height of 56 Meters without Recoil by Demolitional Blasting</td>
<td>1078</td>
</tr>
<tr>
<td>The Effect of Submarine Pipelines’ Distortion when Original Parameters Are Changed during Laying</td>
<td>1082</td>
</tr>
<tr>
<td>Based on Experiment of Constitutive Model of Load-Bearing Insulation Masonry</td>
<td>1089</td>
</tr>
<tr>
<td>Performance of Frame Structure Composed of Steel Reinforced Concrete Beam and Angle-Steel Concrete Column under Horizontal Loading</td>
<td>1094</td>
</tr>
</tbody>
</table>
Statistical Analyses of Steel Frame Structure Drift Angle
H.H. Xia, W.F. Liu and Y.Q. Gao

Experimental Research and Finite Element Analysis on the Bonding Behavior of CFRP-Concrete Interface

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

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

Optimum Design on Raft Foundation with Considering the Interaction of Structure and Foundation and Soil
X.Q. Wang and D.X. Zhang

Study on Reinforced Concrete Masonry High-Rise Building by Abaqus
X.J. Sun, H. Zhang, D.G. Lu and F.L. Wang

Arrangement of Cable on Prestressed Cable-Beam Structure System
X.Y. Xie and X.S. Yin

Hysteretic Property Analysis of the Different Ribbed Steel Deep Beams
X.S. Yuan, H. Zheng and X.T. Xi

A Practical Design Method for Energy Dissipation Structure
M. Chen, G.J. He and C. Liu

Dynamic Characteristics of Single-Layer Spherical Aluminum Alloy Reticulated Shell
Y.P. Li, D. Ouyang and J.C. Xu

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

Study on Bond-Slip Performance of Corroded Reinforced Concrete Members
Y. Liang, X.Y. Luo, Y. Ou and A.Z. Wan

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

Study on Elasto-Plastic Stability Bearing Capacities for K6 Single-Layer Reticulated Shells under Fire Conditions
Y. Bai, J.L. Zhai, Y.Q. Wang and Y.J. Shi

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

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

Contact Nonlinear Numerical Simulation of Steel and Concrete in Wind Turbine Foundation
C.F. Wang, W.R. Lv and W. Luo

Torque Calculation of Crossing Cantilever Beams with Equal Spans
Y. Li, W.R. Lv and W. Luo

The Structural Static Analysis of Multi-Grooves Rectangular Aqueduct
R.C. Ji, T. Xu and J. Yan

Effect of Slab Quality on the Microstructure and Performance of Q345C Hot Rolling Strip Used for Pipe Pile Foundation

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

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

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
Deformation and Stability Study of PBA Extension Method Based on Air Defense Tunnel
J. Jia, S.H. Zhou, X.P. Yao and C. Shen

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

Simulation of Stress Concentration and Drilling Relief of Deep Tunnel Boring Face
Z.T. Ma, T.X. Wang and S.J. Liang

A Geophysical Prospecting and Survey Research on Maojingba Tunnel Project
H.S. Mu

Simulation and Analysis of Frost Heave Force for Tunnel Lining
J.X. Liu, Q.J. Hu, Y.T. Liu and Z.W. Long

Study on the Arrangement of Baffles Attenuating Blast Waves inside Tunnels
H.Q. Lu, W.Q. Liu and T. Zhao

The Construction Technology Development of Immersed Tunnel
S.Y. Li

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

Research of New Filling and Mining Technology Using Waste Rocks in Steep Coal Seams
C.W. Zang, C.L. Ma and X.A. Zhuang

Adverse Engineering Properties of Banxi Group Slatealong Changsha Metro Line 2
C. An

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

Research on Effect of Grouting Circle on Seepage Field of Subsea Tunnel
Y. Wang, X.H. Wang and J.R. Chen

Analysis of the Displacement Caused by Shield-Driven Construction Adjacent to the Existing Tunnel
L. Zhu, H.W. Huang and J.Y. Zhao

The Probe Technology and Counter Measures of Goaf of Colliery Area in Tongluoshan Tunnel
X.B. Zhang

Research on Safety Inspection of Electric Cable Tunnel with Masonry Structure
C.M. Zhai, Q.H. Han, Y. Lu and R. Jin

Numerical Analysis of New Shield Tunnel on Mechanical Behavior of Existing Parallel Tunnel
X.F. Li, S.J. Du and D.F. Zhang

Studies for Deformation of Slurry Shield Construction under Across and Parallel Existing Tunnel
Y.Q. Ma, Y. Ning, Y. Dong and F.L. Wu

Study on Close Coal Seam Pressure Behavior Law of Zhong Xing Mine by Physical Model

Technology of Pile Foundation Underpinning in Shield Tunnel of Xi’an Subway
L. Ma and J. Wang

Analysis of Settlement Control Measures in Immersed Tunnel
G. Wei, H.J. Qiu and X.J. Wei

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

Numerical Simulation of Frozen Construction of the Cross-River Tunnel's Connected Aisle
Y.M. Zhai and Z.G. Cui

Management Criterion for Large Deformation Tunnels
S.M. Zhang and Y.Q. Zhu

A Mechanical Model of EPB-TBM Tunnelling in Mixed Face Strata
T.T. Song and X.S. Chen

Study on Construction Technique of Soft Rock Tunnel in Loess Region
Z.Q. Chen and Y.X. Wang
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 Jinhua Shan 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

Research on the In Situ 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

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

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

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

Mechanical and Economic Analysis of Asphalt Pavement Structure on Mix Base
H.W. Peng and B.F. Ou

Analysis for Influence Factors of Cold Recycling Mixture Compaction Test

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

Analysis on the Convection of Highway in Permafrost Regions
X.Y. Sun, Z.Q. Wang, H.T. Xing and Y.H. Tong

Improving the Computational Efficiency of Widening Highway Approach
X.Y. Sun, Z.Q. Wang, H.T. Xing and Y.H. Tong

Discussion for Ageing Features of SBS Modified Asphalt and its Assessment Index
X.P. Ji, X.Z. Tan and N.X. Zheng

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

Research on Technology of Highway Curve and Slope Road Segment Alignment Safety Design
J.L. He, S.G. Chen and X.S. Zhang

Different Chosen-Unit-Weight Shear Resistant Property of the Asphalt Mixture on the Bailey Method
Y. Zhang, B. Han and B.W. Sun

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

Mixed-Mode Fracture Characteristics of Cold Recycling Mixes with Emulsified Asphalt
L. Gao, F.J. Ni and M.K. Yang

Full-Scale Impact Test Study for the New Flexible Safety Fence
Z.B. Lei, R. Wang, M.X. Lei and X.Y. Zhang

Research on the Crashworthiness of Neotype Flexible Safety Fence
Z.B. Lei, L.H. Li, M.X. Lei and C.C. Chen

Study on the New Concept of the Highway Maintenance
Q. Jiang, R.G. Ma and Z. Ye

The Feasibility Experimental Study about Bamboo Reinforcement Applied in Concrete Pavement
X. Chen, B.W. Chen and R. He

The Reason and Control Method of Road Frost Boiling
H.D. Li

The Measurement of Thickness and Model Prediction of Hot Asphalt Mixture in the Rolling Compacting Process
X. Chen and J.L. Zheng

Research on Speed Target Value of Railway Engineering
M.P. Ran and X.Y. Yang

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

Modification of the Conventional Method for the Track-Bridge Interaction

Seismic Response Analysis of Long Span Cable-Stayed Bridge by Response Spectrum Method

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

A Study on the Pier Scour and Seismic Capacity Assessment of Bridges

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

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 Slop 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

Study on Economical Channel Width for Large LNG Vessel
W.Z. Guo, J.X. Liu, Z. Liu and K. Wang

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

Study of Wave Models of Parabolic Mild Slope Equation and Boussinesq Equation
F. Fan, B.C. Liang and X.L. Lv

The Key Reconstruction Technology of the Changjiang Yihua Standingpile Wharf
Y.F. Xie

Study on the Interaction between Offshore Constructions and Marine Environment
J.J. Qi, S.Y. You and Z.Q. Yin

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

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

The Research on Causes of the Landslide from Typhoon in the Coastal Area of Wenzhou and its Protection Measures
B.H. Sun

Effect of Western the Fourth Phase Project on Hydrodynamic Condition for Shijiu Port in Rizhao
J.R. Li and D.S. Yu

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

Hydraulics Characteristics of the Close Gap in Large-Scale Beach Reclamation Works in Radial Sandbanks
K.F. Chen and J. Shen

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

Study on External Wall Panel of Industrialized Housing and Seismic Behavior of Connection Joint
J.H. Yu, G. Zhang and J.P. Li

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

Long-Period Displacement Spectra of Near-Fault Strong-Motion from Tremendous Earthquakes
H. Li, C. Lian and Y.Y. Kong

Buildings Setbacks Research From Surface-Fault-Rupture Statistical Analysis
J.Y. Zhang, J.S. Bo, G.D. Xu and J.Y. Huang

Probability Analysis of Longitudinal Horizontal Nonlinear Stochastic Seismic Response of Reinforced Concrete Bridge
W.C. Chen, W.J. Yang and C.G. Sun

Comparative Study on Major Damage Index Models
L. He and X.G. Ye

Pseudo-Dynamic Testing Method Based on External Displacement Control
D.P. Wang and S.Z. Tian

Implementation of Data Record Simultaneously in Seismic PSD Test
X. Guo, G.L. Bai and P. Sun
Progress in Industrial and Civil Engineering

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

In Situ 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

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

The Seismic Performance Test of Precast Prestressed Shear Wall
R.R. Fu, Z.C. Liu, Q.L. Yin and K. Su 2559
<table>
<thead>
<tr>
<th>Title</th>
<th>Authors</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Numerical Simulation of Semi-Active Control during Hazard Evolution under Strong Earthquake in ABAQUS</td>
<td>S.J. Sun and G. Feng</td>
<td>2563</td>
</tr>
<tr>
<td>Frame Structure of the Aseismic Appraisal and Strengthening Research</td>
<td>Y.Z. Yang and H. Gan</td>
<td>2580</td>
</tr>
<tr>
<td>Design of SMA Damper and Analysis on Seismic Control of Frame Structure</td>
<td>D.J. Xing, B.Q. Yang and M.D. Wang</td>
<td>2584</td>
</tr>
<tr>
<td>Seismic Behavior of Composite High-Rise Buildings with SRC Column, Steel Beam and RC Core Tube</td>
<td>B. Zhao and J. He</td>
<td>2590</td>
</tr>
<tr>
<td>The Strength of Fresh Concrete after Simulated Earthquake at Magnitude of 9</td>
<td>B. Liu, G.J. He, G.H. Li, M.Q. Xu, J.D. Wei and K. Wang</td>
<td>2595</td>
</tr>
<tr>
<td>Full-Scale Test on Seismic Performance of Masonry Structure</td>
<td>D. An, T.J. Qu and J.W. Liang</td>
<td>2610</td>
</tr>
<tr>
<td>Risk Assessment Model of Multimode System for Earthquake-Induced Landslide in Small Watershed</td>
<td>S.J. Tian and J.M. Kong</td>
<td>2629</td>
</tr>
<tr>
<td>Study on Seismic Performance of Symmetrical Steel Framed Building that with and without ERB and FPS Isolators</td>
<td>D.Z. Xia</td>
<td>2634</td>
</tr>
<tr>
<td>The Ultimate Seismic Capacity Research of Concrete Gravity Dam Considering the Initial Crack</td>
<td>P.S. Yu and W.Q. Wang</td>
<td>2641</td>
</tr>
<tr>
<td>Seismic Reliability Analysis of the Reinforced Concrete Beam Bridge Base on the Maximum Earthquake Response</td>
<td>Z.H. Zhang and W.J. Yang</td>
<td>2653</td>
</tr>
<tr>
<td>Study on a Roller-Footing Isolated Single-Pier System</td>
<td>B. Wei and S.S. Li</td>
<td>2658</td>
</tr>
<tr>
<td>Research on Probability and Statistics of Vulnerabilities in Recent Chinese Earthquake</td>
<td>Y. Ji and C.F. Han</td>
<td>2667</td>
</tr>
<tr>
<td>Numerical Analysis of Soil Nail Walls under Seismic Condition in 3D Form Excavations</td>
<td>S. Zamiran, H. Ghojavand and H. Saba</td>
<td>2671</td>
</tr>
<tr>
<td>Steel Braces in Series with Hysteretic Dampers for Reducing the Seismic Vulnerability of RC Existing Buildings: Assessment and Retrofitting with a Nonlinear Model</td>
<td>D. Cancellara and F. de Angelis</td>
<td>2677</td>
</tr>
<tr>
<td>Seismic Reliability Analysis of Single-Degree-of-Freedom System when Structural Response is with Markov Property</td>
<td>Z.H. Zhang and W.J. Yang</td>
<td>2690</td>
</tr>
</tbody>
</table>
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
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

Study on the Method of the Damage Identification for Frame Structure
Y.F. Yang, S. Li and L. Ling

Monitoring Measurement of Vehicular Tunnels and Finite Element Numerical Simulation

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

Assessment of Load Carrying Capacity for Concrete Rectangle Section Simple Beam Subjected to Fire
G. Zhang, S.H. He and H.J. Guo

Study on the 3G Wireless Network Tunnel Safety Monitoring System
J.B. Song

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

The Inspection Method Research on Air Voids of Externally Bonded FRP for Strengthening Concrete Structures
H.B. Xu and Z.C. Deng

Stepwise Regression Arithmetic and its Application on Slope Safety Monitoring
L. Chen, B.B. Wu and J.Y. Liu

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

Different Fuzzy Controllers Analysis for MR Structures
Y.Q. Guo

Experimental Study on the Axial Loading Tests of RC Columns Strengthened with Steel Tube
M. Zhou, J.W. Li and J.M. Duan

Application of Wavelet Packet Analysis in Damage Alarming for Steel-Frame Structure
N. Zhang, Z.B. Wei, Z. Wang and S. Wu

Analysis of Bending Stiffness of Reinforced Concrete Beams Strengthened with Carbon Fiber Sheet
Y. Han, H.B. Liu and T. Guo

Structural Nonlinear Damage Detection Based on ARMA-GARCH Model
C. Cheng, L. Yu and L.J. Chen

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

Bearing Performances of a Strengthened Chinese Ancient Beam by Simulation
Q. Zhou and W.M. Yan

Structural Damage Detection Based on Curvature Mode Shapes and Neural Network Technique
G.Q. Du, C.Z. Zhu, L.J. Long and M. Zhang

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

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
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

Ecological Farm Masonry Structure Detection & Appraisal in Sichuan Emei
P.B. Fu, K. Nie and Y.T. Gao

Structural Damage Detection Using Inner Product Vector and Low Pass Filter Technique
L. Wang and Z.C. Yang

Experimental Study of Damage Identification on Space Rigid Frame Structure
Z.H. Fang, P.F. Yue and W.N. Zhang

Application of the Fuzzy Analytic Hierarchy Process in Pipeline Risk Factor Weight
L.J. Cai and W.J. Zhang

Study on Hybrid Control Method of Mega-Sub Controlled Structure Subjected to Seismic Action
D.Z. Xia

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

Cluster Health Monitoring System of Major Urban Bridges Based on Digital City VPN Network
Y.Q. Pan, Y. Li and G.L. He

Deformation Monitoring and Environmental Protection for Deep Foundation Pit Engineering
T.H. Qian, H. Wu, G.W. Zhao and B.H. Fu

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

Inner Defect Induced Crack Growth Analysis and Fatigue Life Prediction for Anthropogenic CO₂ Pipelines
Q. Jin, M. Li and Q. Wen

Reliability Appraisal of a Detachment of Traffic Police Houses
Z.Q. Wang and T. Ouyang

Influences of Temperature and Time on Concrete Compressive Strength after Natural Cooling
W. Zi, Z.W. Yu, P. Liu and Z.S. Li

Crack Resistance Capacity Analysis of SRC Column-RC Beam Node
B. Yuan, M.H. Zeng and K.J. Ma

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

Shear Capacity of Concrete Beams Reinforced with Continuous FRP Rectangular Spirals
B.H. Li, S.Y. Jiang, Q.H. Shi and X.Q. Hu

Analysis of the Fatigue Crack Propagation Life-Span Based on Linear Elastic Fracture Mechanics
Z.W. Jiang, S. Wan and C. Cheng

Experimental Study on Deposition Promotion and Erosion Control for Pit Collapse
Q. Ying and S.Y. Yuan

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

Treatment Technology for Embankment Landslide Caused by Expansive Soil Foundation Instability
X.Y. Tang and Y.P. Li
Finite Element Analysis of the Corrosion Prestressed Concrete Beam
H.B. Zou and X.Y. Luo

An Efficient Method for Structural Reliability Analysis
Y. Liu

Experimental Research on the Stability of Spatial Lattice Shell
G. Tang, W.W. Li, L.F. Yin and X.M. Guo

Analysis of Properties of Reinforcing Steel Bars: Case Study of Collapsed Building in Lagos, Nigeria
J.K. Odusote and A.A. Adeleke

Basic Discussing on Constructive Faults of Mortar Masonry Retaining Wall and Their Prevention Measures
B. Wang, H.L. Liu and H.P. Ren

Stability of Cable-Arch Structure
H.J. Kang, Y.Y. Zhao and H.P. Zhu

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

Analysis of Dynamic Stability for Composite Laminated Beam with Delamination
J.H. Yang, D.L. Chen and M.Z. Ning

The Stability Analysis of Tallings Dam under the Fluid-Solid Coupled Interaction
K. Yang, H. Han and Z.C. Ma

Cracking Behavior Analysis of Carbon Fiber Reinforced Concrete Beam
Z.H. Lu and X.S. Gu

Application of Pressure Grouting for Crack Strengthening in Sanqing Hall
J.H. Ye

Research on Interface Critical Fracture of Different Materials Based on Critical Fracture Curve
H.X. Zheng and C.Y. Chen

Research on Impact Response and Failure Modes of H Section Steel Frame Columns Subject to Blast Loads
Y.F. Liu and H.G. Lei

Effect of Local Concrete Strength Decline on High Piers' Nonlinear Stability
Y.G. Xiao and Y.J. Liu

Crack Analysis on Reinforced Concrete Beams Strengthened by Externally Prestressing Vertical Tensioning Method
B.W. Shi and T.W. Wang

A Study on Carbon Fiber Influence to Rebar Corrosion in Concrete
Q. Yang and X.E. Zhu

Fracture Mechanism of Joints of Steel Box Column-H Steel Beam and Performance Study of Joints Strengthened with Haunches

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

ANN-Based Structure Optimization with Fatigue Reliability Constrains
L.R. Sha and Y. Yang

Strength and Stability Analysis on Storage Silo of Concrete Mixing Plant

The Durability Study of Concrete in Sulfate Environment
H.X. Qiao, Y. Li, Z.M. He and J.M. Dong

Study on Deformation and Stability of High Slope with Weak Intercalated Layers
L. Jiang, J.H. Sun and W.S. Wang

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

A Study on the Crack Propagation Process in Concrete Structures Using Energy Method
S.W. Hu, Z.X. Mi and J. Lu
Research on Safety Risk Identification of Continuous Beam Based on Deflection Reliability
W.H. Luo, P. Wang and W.J. Yang

Laminated Composite Beam with Bonded CFRP Reinforcement Stress Performance Analysis
Y.W. Wang, Y.Q. Guo and H.X. Li

Research on Temperature Field of CFST Member under Solar Radiation
J.L. Fan, H.C. Zheng, Q. Zhang, M. Ding and Y. He

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

Pitting Corrosion Propagation Analysis of Reinforcement in RC Bridge Beams Considering Uncertain Information
Y.F. Ma, J.R. Zhang and L. Wang

Experimental Analyses of Dynamic Damage of the Reinforced Concrete Pile
R.J. Li, R. Yan and H.T. Li

An Economic Analysis on Regeneration Concrete Hollow Block
S. Gu, C. Wang, L. Li, Y.P. Gan and K. Lin

Evaluation of the Fire Resistance of H-Section Steel Columns and Beams
I.K. Kwon and Y.B. Kwon

Influence of Geometry Parameters on Durability of Concrete Structures Exposed to Chloride Environment
X.G. Zhou and H. Xia

Ant Colony Algorithm and Application in Inspection of Concrete Structure Defects
W.H. Zheng and Z.H. Wang

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

Classification of Durability of Concrete Structures Based on Environmental Action
K.B. Zhang and Y.L. Yan

Study on Damage Patterns of Corroded High Performance Concrete Column Under Large Eccentric Loading
F.X. Sun and Y.H. Zhu

Study of Post-Fire Bearing Capacity of Self-Stress Ceramsite Concrete Filled Steel Tubes

Study on Buckling of an H-Shaped Steel Member with Initial Geometric Imperfection
P. Niu, G. Yang and C.F. Jin

Chemo-Damage Model for Concrete Anisotropic Expansion Caused by Alkali-Aggregate Reaction
J.W. Pan, Y.J. Xu and F. Jin

Simulation of Improper Construction Procedure and Crack Analysis
W.X. Huang and L.Y. Tan

Influence of Slag Fineness on Durability of High-Performance Concrete
H. Liu, P. Li and Q.L. Jin

Quick Start Study on Bioleaching Method
J.X. Fu, X.N. Zhang and R.X. Zhang

Shaking Table Tests on Chinese Ancient Tenon-Mortise Structure Strengthened by Steel Components
Q. Zhou and W.M. Yan

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

Countermeasures on Prevention and Treatment of Structural Cracks for Premixed Pump Concrete
C.Y. Zhang and Z.Y. Zhou

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

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
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
S.S. Li, Y. Gao, G.W. Zou, H. Dong and Y.M. Zhang 3393

Study on Statistical Analysis in the Characteristics of Frequency Changes of Typhoon Landed in China
Y.X. Wang, X.M. Yuan and M. Yang 3397

Experimental Study of Post-Fire Behavior of Steel Fiber Reinforced Ceramsite Concrete Filled Steel Tubes
J.Y. Zhang, X.T. Wang, P.X. Sun and H.L. Sun 3401

A Review of Study on Chinese Debris-Flow Risk Assessment
J. Wang, S. Yang, X.J. Ji and G.Q. Ou 3405

Study on Interpretation of Landslides Based on GIS — Taking New Fengjie County in Chongqing as an Example
L. Yang, R.N. Lu, D.J. Tan, H.B. Xie and Z.F. Luo 3409

Research on Simulation Model of Nonstationary Stochastic Processes in Natural Disasters
C.Y. Hu, Q.J. Chen and Q.Y. Xu 3415

Numerical Analysis and Simulation of Spatial Concrete Frames after Fire
M. Xia, J.T. Yu and Z.D. Lu 3423

Experimental Investigation on the Fire Resistance Performance of L Special-Shaped Steel Reinforced Concrete Columns

The Calculating Method of Erosion Depth of Viscous Debris Flow
Y. You, Y.B. Zhao and J.F. Liu 3441

Calculating Temperature Distribution in Concrete Encased H-Section Steel Column in Fires Using TFIELD
Y.J. Liu, R. Bi and Y. Wang 3445

Research on the Dam-Break Hazard Vulnerability Assessment Index System and Methods of Tailings Pond
G.D. Mei and Z.Z. Wu 3450

Study on Hazard Analysis Method of Earthquake Secondary Fire Disaster in Urban Area Based on GIS
T.Q. Li and F. Geng 3457

Lessons Learned From Major Environmental Accidents and Regulations on Hazard Control in China
P.L. Xue, X.F. Sun, Y. Song, Y.J. Cheng and D.Z. Sun 3462

The Application of Gas Drainage Technology in the Workface of "Three Soft" Specially Thick Coal Seam
G.L. Lu, C. Wang, Y.D. Jiang and H.W. Wang 3469

Dynamic Responses of Buried Pipelines Under Impact Loading Caused by Landslide
X.X. Zhu, S.F. Xue, X.H. Tong and C.Q. Liu 3476

The Calibration on Nonlinear Single Return Period Storm Intensity Model Parameters by the New Blending Accelerating Genetic Algorithm
B.Z. Ren, J.C. Lu and H.T. Zhou 3480

Mechanism and Prediction Research of the Surface Mining Subsidence of Thick Loose Layers in Mining Area
H.R. Zhang, G.B. Zhang, Y.Y. Sheng and P.C. Sun 3488

Bridge Disaster Prevention and Disposal Methods in Mining Area
Q.J. Wen and H. Lu 3494

Study on Early Warning of Slope Safety Based on Field Monitoring
J.H. Sun, L. Jiang and W.S. Wang 3499

Comparison and Validation of Thermal Radiation Models for Hydrocarbon Jet Fire and Fireball
S.G. Yang, Y.D. Zhang and H. Wu 3503

Characterization and Triggering Mechanism of Underground Engineering Hazards in a Terrestrial Oil Field in Central China
W. Zhu, C.W. Li and S.Q. Gu 3513
### 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

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

### Chapter 13: Traditional Construction Materials

<table>
<thead>
<tr>
<th>Title</th>
<th>Authors</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Research on Absorption of Special Impregnated Paper for Plywood Formwork</td>
<td>X.Q. Sun, C.S. Zhao, X.Q. Yang and W.Y. Xu</td>
<td>3619</td>
</tr>
<tr>
<td>Study on Hot-Pressing Process of Low-Cost Straw Particle Board</td>
<td>Q.F. Ling, X.G. Li and Y.L. Yan</td>
<td>3624</td>
</tr>
<tr>
<td>Experimental Study on Impact of Production Process Parameters on Rubber Asphalt Performance</td>
<td>W. Hou</td>
<td>3629</td>
</tr>
</tbody>
</table>
Cement Hydration Kinetics Research Based on Center-Particles Hydration Model
L. Wu, B. Yan and B. Lei

Cement Hydration Models Research Based on Composition Content of each Phase of Minerals
C.H. Rao, L. Wu and B. Lei

Effect of Hydration Products Transformation for Compressive Strength of Autoclaved Silicate Products
C.J. Ke, S.Y. Wang and J.L. Liu

Thermal and Drying Cyclic Loading for Cement Based Mortars and Expanded Polystyrene Foam Layers
D.S. Passa, A.B. Sotiropoulou, Z.G. Pandemarakis and G.D. Mitsopoulos

Study on the Temperature and Humidity Control Performance of Hwang-Toh Finish
K.I. Lee, D.W. Yeom and B.G. Lee

Influence of Shrinkage Compensation in Cement Matrix on the Tension Stiffening of Reinforced Strain-Hardening Cement Composite (SHCC) Tension Ties

Mechanical Properties Test Research on Mass Concrete Mixed with Different Fly Ash Bulk Volume
J.H. Liu, X.H. Liu and W. Han

Application of Spent Bleaching Clay for Producing Environmental Brick
S.X. Wu, S.S. Huang, C.B. Tan and H. Cai

Study on the Waterproofing Agent for the Mineral Wool Board

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

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

Study on Influence of Composite Ultra-Fine Fly Ash on Crack Resistance of Pavement Concrete
Q.T. Qin and Y.J. Li

Modeling of Vapor Pressure Build-Up in Heated High-Performance Concrete
J. Zhao, J.J. Zheng and G.F. Peng

Mechanics Performance Test Study on High Performance Concrete with High Content of Fly Ash
X.Y. Guo and R.X. Hao

An Experimental Study on Mechanical Properties for Ternary High Performance Concrete with Fly-Ash, Blast Furnace Slag, Silica Fume

Research on the Application of Slipform Concrete of Well Tower in winter
X. Zong

Five-Phase Sphere Model for Elastic Modulus of FRP-Confined Concrete
M.H. Liu, Y.F. Wang and H.L. Wu

Experimental Research of Reclamation Performance of Recycled Asphalt Pavement Material at Weihai Area
B.H. Gong, H.J. Ji and P.J. Wang

Effect of Mineral Admixtures on Chloride Binding Mechanism in Concrete
Q. Zhu, Y. Chen and L.H. Jiang

Effect of Stray Current on Chloride Binding Mechanism in Concrete
Q. Zhu, L.H. Jiang and Y. Chen

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

Influence of Sulfate Attack and Drying-Wetting Cycle on Properties of Mortar
D. Chen, N. Wang and C.H. Jiang

Stress Analysis of Local Compression on the Center of Plain Concrete Column
Y. Wang, L. Zhai and L.M. Chen
Application Study on the Steel Fiber Reinforced Concrete
W. Cui and Q. Luo

Experimental Research about the Effect on Bond Properties between Ceramsite Concrete and Reinforcement with Age
W.J. Yang, L.S. Li and Y. Wang

Rutting Resistance Property of Warm Recycled Asphalt Mixture
L.Y. Yang, Y.Q. Tan, Y.M. Dong and E.G. Li

Experimental Study on Accelerated Speed of Concrete Sulfate Attack
H.F. Liu and F.J. Huang

The Research on the Effect of Granite Powder on Concrete Performance
P.J. Ying, F.S. Liu, S.X. Ren and G.G. Dong

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

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

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

Study on Dynamic Performance of Silica Fume Concrete
W. Wu, C. Zhang and K.H. Wu

Fatigue Properties of 316L Stainless Steel
X. Zhao

Influence of Superplasticizer on Anti-Carbonation Property of Concrete

Relationship of High-Temperature Performance and Aggregate Gradation of Asphalt Mixtures Based on Fractal Theory
J.B. Huang and X. Yu

The Relationship between Mechanical Properties and Shrinkage of the Concretes Used in Florida
Y.J. Liu and M. Tia

Mechanical Properties of Reinforcing Bar HRB335 after Corrosion
Y. Wang and P. Li

Experimental Study on Mechanical Properties of Hybrid Fiber High-Strength Concrete
X.L. Liu, S.F. Liu, B.D. Qin and D.F. Yang

Applied Research on Straw Bale in Northwest Rural Residential Building
X.P. Li

Application of Epoxy Resin Concrete in Covers
Y.J. Jin, X.S. Yin and L.G. Xiao

Research on Performance Concrete Made with Slay-Fly Ash and Ground Limestone
L. Sun and H.T. Zhang

Experimental Study on Reinforced Concrete Beam with Embed in Basalt FRP Bars
B.R. Zhu and Y. Song

Research on Influence of Fly Ash on the the Microstructural Characteristics of Sea Sand Concrete

An Investigation of Strength and Deformation Behavior on Shale Ceramsite Concrete Shear Walls
W.C. Chen, W.J. Yang and T. Wang

Effects of RE on Inclusions and Mechanical Properties of Weathering Steel
X. Liu and H.F. Zhang

Effects of Sample Preparation Methods on Tensile Strength of Red Clay
Z.T. Zeng, H.B. Lu, J.J. Zhang and Y.L. Zhao

Fatigue Life Analysis of Asphalt Mixture Coupling with Loading Intermittent Time
L.Q. Luan and X.G. Tian

New Applications of Glass Materials in Buildings
C. Zhang, J. Wan and Z.H. Wang

The Research Development of Plywood Building Templates
Z.J. Zhang, Z. Jia and G.L. Li
Hydration Performance and Pore Structure of Fly Ash-Cement Pastes
X. Li, Y. Dong and H.Q. Yang

Tensile Properties of JLF-1 Steel at Elevated Temperature
H.L. Li

Chapter 14: Novel Constructional Materials and Functional Materials

Synthesis and Characterization of Comb-Like Polycarboxylate Superplasticizer

Study on Low-Temperature Performance of Asphalt Mixture Impacted by Modified Asphalt and Polyester Fibers
X. Yu and J.B. Huang

Research on Mechanical Properties of Solidification Agent Stabilized Iron Tailing Gravel
S. Yin, C.L. Xiao and J.C. Yue

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

A Study on the Influences of Crumb Rubber Modified Asphalt
L.Y. Chen, Q.L. You and X. Qiu

TSDC Study of Space Charge Influence on PP Film by Steep Front Impulse Injection
Z.H. Kong, B. Xu and Z.F. Luo

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. Abasaeeed

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

Experimental Study on the Crack Consequences of Shale Ceramsite Concrete Aggregate
W.J. Yang, Q. Kong, Z.P. Yu and Y.C. Ren

Application of Prepacked Aggregate Concrete Technology in Gravity Wharf Reinforcement
S.M. Li, T.G. Chen, K. Wang and G.F. Ma

Study on Structure and Performance of PTFE/YSZ Composite Microporous Membrane
J.L. Du, X.H. Deng and Y. Sun

Research of Mechanical Properties of Asphalt Pavement Materials with WMA and RAP
B.Y. Yu, Y. Wang and M.J. Zhang

Preparation of Polyurethane-Poly(butyl acrylate) Hybrid Latexes via Miniemulsion Polymerization
S.J. Wang, Y.L. Wang, P.F. Yang and T.D. Li

Orthogonal Experiment and Analysis of the Concrete which Use the Shell as Aggregate
C. Gao, Z. Pan and X.Z. Wei

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

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

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

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

Non-Destructive Evaluation of Composite Laminates by Using Fiber Optic AE Sensor
J.C. Hao, J. Wang and Y.M. Yu

On Effects of Fly Ash as a Partial Replacement of Cement on Concrete Strength
R.J. Case, K. Duan and T.G. Suntharavadivel

Application Prospect of Basalt Fabrics Wall Material
X.E. Li

A New Constitutive Model of Superelastic SMA
W.J. Ren, J.S. Jia and X.S. Chen
<table>
<thead>
<tr>
<th>Title</th>
<th>Authors</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tension Stiffening and Cracking Behavior of Ultra High Strength Strain-Hardening Cement Composite (UHS-SHCC) Ties in Monotonic and Cyclic Tension</td>
<td>Y.J. Song and H.D. Yun</td>
<td>3982</td>
</tr>
<tr>
<td>Chapter 14: Novel Constructional Materials and Functional Materials</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fabrication and Study of Abandoned Glass Fiber/Polypropylene Flame-Retardant Fiberboard</td>
<td>L.H. Lv, M. Zuo and X.G. Su</td>
<td>3994</td>
</tr>
<tr>
<td>Thermal Properties and Morphology of Electrospun PEG/PVP Composite Fibers as Novel Phase Change Materials</td>
<td>Q.S. Shi</td>
<td>3998</td>
</tr>
<tr>
<td>Durability of Cement Mortar with Surface Treated by Superabsorbent Resin Synthesized In Situ</td>
<td>D. Zhang, X.F. Song and T.S. He</td>
<td>4002</td>
</tr>
<tr>
<td>Performance Studies of Lightweight Concrete Mixtures Made with Rigid Polyurethane Foam Wastes</td>
<td>G. Wang, Y.Q. Liu and Y. Cui</td>
<td>4007</td>
</tr>
<tr>
<td>Study on Exfoliation Resistance of Ferro Superalloy Composite Oxide Scale</td>
<td>H.T. Wang, S.J. Zhou, H.S. Yu and Z. Chu</td>
<td>4011</td>
</tr>
<tr>
<td>Experimental Study on Force-Bearing Performance of Road Concrete which Modified by Fiber and Rubber Powder</td>
<td>H.B. Li, B. Wang and Y.Y. Zou</td>
<td>4015</td>
</tr>
<tr>
<td>Experimental Research on Physical and Mechanical Properties of EPS Recycled Concrete</td>
<td>Y.X. Rao, C.F. Liang and Y. Xia</td>
<td>4022</td>
</tr>
<tr>
<td>Experimental Research on the Work Performance of Ceramisite Concrete with Mineral Admixture</td>
<td>Z.M. Cao, L.S. Li, Y. Wang and W.J. Yang</td>
<td>4026</td>
</tr>
<tr>
<td>Load-Bearing Capacity of CFDST Based on the Unified Strength Theory</td>
<td>G.Y. Xia, J.J. Li and M.L. Yang</td>
<td>4031</td>
</tr>
<tr>
<td>Dynamic Mechanical Behavior Study for the Fabricated Composite with High Anti-Corrosion Properties</td>
<td>G.N. Liu, H.D. Zhao, Y.M. Li, Q. Zhu, Y.H. Du and M.H. Zhao</td>
<td>4038</td>
</tr>
<tr>
<td>Development of the Propertie and Process of Slot Wedge Cunibezeri Copper Alloy Heat-Treatment Strengthening</td>
<td>H. Li, Z.B. Ma, F.X. Bu and T.X. Li</td>
<td>4042</td>
</tr>
<tr>
<td>Study on the Design of Steel-Bamboo Composite Member</td>
<td>J.G. Huang, Y.S. Li, B. Yang and Y.F. Du</td>
<td>4047</td>
</tr>
<tr>
<td>Study on Dry-Shrinkage Properties of Layer Hybrid Fiber Reinforced Concrete</td>
<td>D.Q. He and Y.Y. Zhao</td>
<td>4055</td>
</tr>
<tr>
<td>The Use of Nanosilica for Improving of Concrete Compressive Strength and Durability</td>
<td>J. Bi, I. Pane, B. Hariandja and I. Imran</td>
<td>4059</td>
</tr>
<tr>
<td>Effect of RE on Cyclic Oxidation Behavior of Ferrite Stainless Steel</td>
<td>X. Liu and L.M. Wang</td>
<td>4063</td>
</tr>
<tr>
<td>Kinetic Spectrophotometric Determination of Ruthenium by its Catalytic Effect on the Reduction of Spadns with Sodium Hypophosphite in Micellar Media</td>
<td>Z.R. Zhou and L.Z. Zhang</td>
<td>4067</td>
</tr>
<tr>
<td>Preparation and Study of a New Polyurethane Curing Agent</td>
<td>H. Song, X.H. Deng and Q. Li</td>
<td>4075</td>
</tr>
</tbody>
</table>
The Research on Hot Compression Mechanism of Light Alloy

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(lacticacid)
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

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

Analysis of New Construction Materials and its Development
B. Wang, J. Cheng and X.H. Zhang 4119

Effects of Ceramist 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

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

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 CaCu3Ti5O12 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

Synthesis and Characterization of Poly(N-Arylenebenzimidazole Ketone)

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

Solving Transient Heat Transfer Problems by the Convolution Type Semi-Analytical DQ Method
J.S. Peng, G.B. Luo and L. Yang 4315

Numerical Simulation and Experimental Study of Wind Distributor
Y.T. Li, L.Y. Sun, H.T. Na and L. Liu 4320

Numerical Simulation of Gas-Particle Turbulent Flow Using \( k_{g} - \varepsilon_{g} - k_{p} - \varepsilon_{p} - k_{pp} - \Theta \) Turbulence Model
Z.X. Zeng, F. Xue and Y.H. Xu 4327

Research on Risk Comprehensive Evaluation System of Gas Supply Company Based on WebGIS
R.F. Tang and Y.Q. Bai 4332

Theoretical Analysis and Experimental Researches on Internal Heat Exchanger in CO\(_{2}\) Trans-Critical Cycle
H.X. Lu, J. Lv, Z.B. He, J.Y. Wang and J.W. Zhou 4336

Evaluation of the Influence of One Air Circulation System on LGS House Indoor Thermal Environment
J. Li, Z.Q. Deng, C. Li and D. Zhou 4343

Improvement of Transductive Support Vector Machine and its Application to Enhance Antifreeze Heat Transfer Capability in Ground Source Heat Pump System
M.F. Yan and J.H. Wang 4349

Experimental Verification and Analysis of Thermal Comfort with Radiant Floor Cooling
Q.F. Li, Z.T. Zhou, W.D. Sun, T. Li, L.F. Zhao and C.C. Pan 4356

Analytical Solution of Unsteady State Conduction Problem with Heat Source
S.Y. Su and Q. Huang 4364

Study on Induction-Ventilation-Based Insulation Properties
J.P. Fu, Z.H. Liang, Y.F. Tian, J.C. Li and Y.Q. Feng 4368

Ventilation Technology and Low Temperature Storage of Granary in China
W.L. Tang and Y.H. Di 4372

Design and Research on One Avoiding-Clogging Equipment in Untreated Sewage Heat Pump Air Conditioning System
Z.B. Liu, J.L. Zhang and L.D. Ma 4378

Heat Flux through Naturally Ventilated Building in Malaysian Climate
F. Morris, N.Z. Zakaria and A. Zain Ahmed 4384

Chapter 16: Applied and Computational Mechanics

Mode-II Stress Intensity Factor by Triangular Williams Element with Generalized Degrees of Freedom
H. Xu and L.F. Yang 4391

Numerical Simulation Analysis on Mass Concrete Thermal Stress
G.L. Tian and Y. Wang 4396

Testing and Analysis of the Dynamic Parameters of 3D Reciprocating Compressor Foundation
X.L. Wan and S. Zhang 4400

An Eigenfunction Expansion Method in the Stress Concentration Analysis
Y. Bai and L. Chen 4406

Siltation of Approach Channel and its Influence on Ship Grounding
Y.J. Li, J.M. Mou, Y.L. Ren and X.J. Lin 4410

A New Model of Orthotropic Bodies
J. Ke 4418

A New ERR and Strategy for Bi-Directional Evolutionary Structural Optimization
D.K. Zhang, W.P. Zhang, H. He and C. Wang 4422

Some Results for the Davey-Stewartson System on a Circle
T.J. Chen, Y.F. Fang and Y.J. Hong 4429
Micro-Stress-Field of Lamellar Inclusion in Eutectic Composite Ceramic
X.Q. Liu, X.H. Ni, J. Zhang and X.F. Meng

The Triple-Shear Unified Analytical Solution of Stress and Displacement of Softening Material Thick Walled Cylinder
J.H. Ma

Research on Mode of Deformation Forecasting Based on the Maximal Lyapunov Exponent
X.P. Wang and T.C. Jiang

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

Nonlinear Dynamic Response of Buoy under the Collision Load with Ships
L.H. Chang, C.B. Jiang, M.J. Liao and X. Xiao

Application of Differential Transform Method to Buckling Problems at Pinned-Clamped Boundary Conditions
L.F. Han, N. Deng and S.Y. Wu

Research of the Pile Bent Property under the Horizontal Load
J.P. Tang, Y.F. Xie, R. Liu and W.Q. Tang

Experimental Research on Interface Mechanic Behavior of the Composite Steel-Concrete Beams
G. Fu

Solving the Linear Time-Fractional Wave Equation by Generalized Differential Transform Method

Numerical Analysis for Bolt Length Based on the Stress Response of Anchorage Surrounding Rock
B. Wang, F.J. Zhao and W.B. Peng

A Novel Numerical Method for Computing Stress Intensity Factors
H.D. Su and Y.F. Qi

The Effect of Boundary Conditions on Simulation of Horizontally Homogeneous Atmospheric Boundary Layer
X.L. Yang, Z.W. Huang and L. Yang

Identification Method Research of Elastic Buckling Load of the Compressed Beam at Two Ends Elastic Fixed
L. Du and F.C. Li

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

Asymptotic Stability for an Impulsive Model of Hematopoiesis with Time Delay
R. Chen and P.J. Ju

Damping of Stay Cable-Passive Damper System with Effects of Cable Bending Stiffness and Damper Stiffness
M. Liu and G.Q. Zhang

Time-Domain Dynamic Analysis for Dynamic Positioning System of Deepwater Semi-Submersible
L.P. Sun, S.L. Cai and J. Chen

Outline of Electromagnetic Damper and Further Research on Theoretical Model

A Perturbation Procedure for Limit Cycle and Heteroclinic Connection Analysis of Certain Self-Excited Oscillator
Y.Y. Chen, W. Zhao and L.W. Yan

Non-Linear Finite Element Analysis of EPS Module Shear Wall
M. Zhang, Y.Y. Jin and L.J. Dou

Nonlinear Analysis for Bending Cross Section of Tensile-Compression Prestressed Concrete Beam
J.B. An

Twist Velocity Model of Single Slide Skill on the U-Ground
X.Y. Liu, M.Y. Li and S.S. Zhang
### Nontrivial Positive Solutions to a Semilinear Elliptic System
D.W. Sun and G.S. Zhu

#### Energy Estimates of Strictly Contact Homeomorphisms in Contact Dynamical System
D.W. Sun

#### Wavelet De-Noising Method of Blasting Vibration Signal Considering Different Level Noise
B. Song, Y. Cao and H.B. Gao

#### The Application of Vibration Testing in Jinaozhou Pagoda Protection
H. Deng and J.B. Peng

#### A Note on Exact Travelling Wave Solutions for Nonlinear PHI-Four Equation
C.H. Xiang

#### A new Interface Element Method on Computation of the Interface Crack Propagation Energy Release Rate
Z.P. Zhong, S. Wan and L.Y. Zhou

#### Numerical Simulation of Ship Maneuvering on Bend Channel
B.J. Dong, J. Lin and Q. Chen

#### Dynamics in a Van Der Pol Model with Delay
C.J. Xu, P.L. Li and L.Y. Yao

#### The Experimental Study on Mechanical Behavior of Concrete Composite Beam with Detaching-Free Template
Q.H. Wang, J.Z. Dong and J.F. Tian

#### Stress Distribution of Aluminum Alloy Thick-Plate under Abnormal Pre-Stretching
K. Liao and Y.X. Wu

#### The Numerical Research of Two-Degrees-of-Freedom Vortex-Induced Vibrations of Circular Cylinders
J.L. Fan and W.P. Huang

#### Experimental Investigation on Tensile Mechanical Properties of CFRP-PCPs Composite Rebars
J.F. Liang, H. Lei and Z.P. Deng

#### Experimental Study on Mechanics Properties of CFRP-PCPs Composite Rebars under Uniaxial Load
J.F. Liang, P.H. Yi and J.P. Li

#### Conclusive Design and Hydrodynamic Analysis of a High-Speed Deformable Trimaran
H.S. Yan, X.Y. Xu and Y.X. Feng

#### Failure Analysis on Tube Socket Crack of Supercritical Boiler Water Wall Header

#### Experimental Studies on the Effects of Nozzle Structures on Characteristics of Submerged Gas Jet Noise
Z.R. Hao and Z.H. Zhou

#### Numerical Analysis of Variation Law about Vertical Additional Force of Monolayer Shaft Lining
X.L. Liu and J.Y. Hou

#### The Application of Pseudolinear Equivalent System in the Deformation Analysis of RC Structure Members
H.X. Yu, X.Y. Chen and X.Y. Wang

#### Analysis of Four Finite Volume Schemes for Plane Stress Problems
Y.P. Qin, Q. Sun, X.B. Yang and G.Y. Zhang

#### 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

#### Experimental Study of Deformation Characteristic and Application on External Prestressed Wooden Beam
J.M. Zhang, J.L. Pan and H.B. Dong

#### Adaptive Moving Mesh Finite Element Method for Space Fractional Advection Dispersion Equation
Z.Q. Zhou and H.Y. Wu

#### 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
Control Technology of Magneto-Rheological Damper Based on Impact Load  
F. Li, L.P. Lin, W. Hu and G.L. Meng  
Identification of the Nonlinear Vibration Characteristics Based on the Wiener Kernels  
Y.C. Ren and Y.H. Yu  
Shock Wave Stress Concentration to Solve Large Drill-Jamming Problem  
Y.X. Sun, R.Y. Li, M. Ding and Z.W. Shen  
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  
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  
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  
Measurement Method in Model Test of Ice Breaking by Air Cushion Vehicle  
Nonlinear Dynamic Response of Piezoelectric Cylindrical Shell with Delamination under Hygrothermal Conditions  
J.H. Yang and D.L. Chen  
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  
Nonlinear Forced Vibration Analysis for Thin Rectangular Plate on Nonlinear Elastic Foundation  
Y.G. Xiao, C.P. Yang and H. Hu  
FEM Research on Deepwater Risers Installation  
H.X. Liu and X.J. Ding  

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  
A Tapering Method in the Construction of Covariance Regularization  
S.Q. Wang and F.X. Song  
A CFD Simulation of Strouhal Number for U-Shaped Section Aqueducts  
Y.C. Li, X.J. Zhang and S.W. Jia  
Parameters Identification of Dual-Rate Hammerstein Systems Based on Finite Input Response Models  
K. Qin and J. Chen  
Analysis of Image Texture Features Based on Gray Level Co-Occurrence Matrix  
Y. Chen and F.Y. Yang  
The Properties of Case-Weight Model when the Row and Column of Design Matrix Simultaneous Mitted  
Z.W. Chen and W.K. Xu  
Research on Characteristic Properties of Gray Level Co-Occurrence Matrix  
Y. Chen and F.Y. Yang  
Prediction of Dynamic Deformation Monitoring Based on IGA Artificial Neural Network Model  
Y. Zhu and Q. Zhao  
A Matching Theorem in FC-Spaces with the Application to Coincidence Questions  
K.T. Wen  
Study on Critical Anchorage Length of Bolts by Numerical Simulation Method  
A Remark on Invariant Scrambled Sets  
L. Huang, H.Y. Wang and H.Y. Wu
<table>
<thead>
<tr>
<th>Title</th>
<th>Authors</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Development of Conversion Program from ETABS to ABAQUS</td>
<td>J.C. Li, J. Ji and Y.X. Yuan</td>
<td>4780</td>
</tr>
<tr>
<td>An Equation Involving the Smarandache Function</td>
<td>B. Chen</td>
<td>4785</td>
</tr>
<tr>
<td>An Improved Algorithm of Histogram Equalization to Increase Brightness of Image in Mine</td>
<td>Y.B. Yuan, B. Zhang, X.H. Yuan, X.P. Zhang, W.Z. Xia and Y. Chen</td>
<td>4789</td>
</tr>
<tr>
<td>Business Procurement Software Application for Project of Universal Studio of Singapore</td>
<td>L.H. Li</td>
<td>4794</td>
</tr>
<tr>
<td>Positive Radial Solutions for Elliptic Systems with Nonlocal Conditions</td>
<td>S.L. Xie</td>
<td>4800</td>
</tr>
<tr>
<td>A Heterogeneous Strategy Genetic Algorithm and its Application in Dynamic Optimization of Structure</td>
<td>L.W. Yan and Y.Y. Chen</td>
<td>4827</td>
</tr>
<tr>
<td>Rules of CST Blunt Edge Roundness and the Influence on Collision Characteristics</td>
<td>Z.B. Lei, L. Yang and M.X. Lei</td>
<td>4831</td>
</tr>
<tr>
<td>Oscillation Criterion of Third-Order Nonlinear Neutral Damped Functional Differential Equations</td>
<td>Y.H. Zeng</td>
<td>4835</td>
</tr>
<tr>
<td>Deterministic Method of Floor Rock Permeability Tensor of Mining over Confined Water and Application in Numerical Simulation</td>
<td>W.T. Liu, J.J. Shen and Y.J. Liu</td>
<td>4840</td>
</tr>
<tr>
<td>Structure Optimal Design for Portable Exoskeleton Using Improved Particle Swarm Optimization</td>
<td>F. Liu, W.M. Cheng and Y. Zhou</td>
<td>4845</td>
</tr>
<tr>
<td>Weibull Model Based on the Maximum Entropy Principle and its Applications on Elements Grade Distribution</td>
<td>L. Wan, P. Chen and X.Y. Hu</td>
<td>4851</td>
</tr>
<tr>
<td>Integrated Design of Control/Structural Systems Based on Genetic Algorithm</td>
<td>B. Xu, Y.L. Zhang, S.X. Yao and J.S. Jiang</td>
<td>4855</td>
</tr>
<tr>
<td>Integrated 3D Spatial Data Model of Object-Oriented Digital Landslide</td>
<td>D.X. Ma, X.H. Liu and L.W. Ma</td>
<td>4872</td>
</tr>
<tr>
<td>Load Distribution Calculation of Pile Group Using Artificial Bee Colony Algorithm</td>
<td>G.S. Su, K. Qian and Y. Zhang</td>
<td>4878</td>
</tr>
<tr>
<td>The Influence of the Convective Terms Discretization Scheme on the Simulation Results of Architectural Numerical Wind Tunnel</td>
<td>J.F. Wu, C.H. Wang and C.L. Song</td>
<td>4884</td>
</tr>
<tr>
<td>The Selection of Pressure Velocity Coupling Algorithm in the Numerical Wind Tunnel of Arch Roof</td>
<td>J.F. Wu, C.H. Wang and L.P. Yi</td>
<td>4888</td>
</tr>
<tr>
<td>Analysis on Equivalence between Transfer Function and Equivalent Circuit Simulation in General Hamiltonian Modeling</td>
<td>J. Qian, Y. Zeng, L.X. Zhang and T.M. Xu</td>
<td>4896</td>
</tr>
<tr>
<td>A New Method of Sensitive Analysis Based on the Weighted Inverse Topological Change Method</td>
<td>P. Liang, Q. Zhang and J. Wei</td>
<td>4900</td>
</tr>
<tr>
<td>A New Method to Mine Classification Rules</td>
<td>Y.J. Dun, Y.B. Shao and S.L. Tian</td>
<td>4904</td>
</tr>
<tr>
<td>Title</td>
<td>Authors</td>
<td>Page</td>
</tr>
<tr>
<td>----------------------------------------------------------------------</td>
<td>----------------------------------</td>
<td>------</td>
</tr>
<tr>
<td>An Advanced Multi-Objective Genetic Algorithm Based on Borda Number</td>
<td>J. Zou and Y.G. Wu</td>
<td>4909</td>
</tr>
<tr>
<td>Motion Simulation of Dual-Frequency Vibrating Screen</td>
<td>Y.J. Hou, P. Fang, Q.Y. Liu and J. Liang</td>
<td>4916</td>
</tr>
<tr>
<td>A New Construction Method for Web-Based Large-Scale 3D Terrain Model</td>
<td>Z.P. Li, Z.G. Wang and H.L. Jia</td>
<td>4922</td>
</tr>
<tr>
<td>Research of Information Retrieval Based on Web Page Segmentation</td>
<td>Y.X. Yu</td>
<td>4928</td>
</tr>
<tr>
<td>Reliability Model of Series and Parallel Systems under Imperfect Information</td>
<td>B. Suo, C. Zeng, Y.S. Cheng and J. Li</td>
<td>4932</td>
</tr>
<tr>
<td>A Novel Image Registration Approach With SIFT Algorithm and Tangent-Cross-Point Feature</td>
<td>Z.L. Song</td>
<td>4936</td>
</tr>
<tr>
<td>Decentralized NExT/ERA and RDT/ERA System Identification in Wireless Smart Sensor Networks</td>
<td>D.Y. Cui, K.G. Xin, B.F. Spencer and Y.F. Liu</td>
<td>4946</td>
</tr>
<tr>
<td>Simulation and Implementation of HLA-Based Branch Predictor of Multi-Pipeline Processor</td>
<td>J.H. Ye, Q. Xie and Y.H. Xiahou</td>
<td>4952</td>
</tr>
<tr>
<td>Classical Models and its Applications in D-S Evidence Theory</td>
<td>Y.W. Du and C. Han</td>
<td>4958</td>
</tr>
<tr>
<td>Sensitivity of B-Splines Weight Function Neural Networks and its Application on Signal Recognition</td>
<td>D.Y. Zhang</td>
<td>4962</td>
</tr>
<tr>
<td>The Application of BP Neural Network on Research of DO Influence on Fluidized Bed Step-Feed Process</td>
<td>B. Wang, J.K. Zhang, Y.F. Li and J. Li</td>
<td>4967</td>
</tr>
<tr>
<td>Numerical Study of Wave Slamming on a Rectangular Slab</td>
<td>Y.M. Lan, W.H. Guo and Y.G. Li</td>
<td>4971</td>
</tr>
</tbody>
</table>