Table of Contents

Preface, Conference Organization and Committees

Chapter 1: Geological and Geotechnical Engineering

Numerical Study of the Rock Fragmentation by Three TBM Cutters
Y. Wang and Z.Z. Liang 3

Energy Variation Characteristics of Exploding Ground Motion within Typical Loess Field of China
J.J. Sun, L.M. Wang and W.T. Tian 8

Influence of Matric Suction on the Stability of Unsaturated Slope
X.H. Hu, S.G. Cheng and Z.W. Yu 18

The Effects of Fines on Post Liquefaction Strength and Deformation Characteristics of Sand
Y.L. Wang and Y. Wang 23

Application of Improved Gray Correlation Analysis Model to the Estimation of Country Rock Stability
J.S. Lei, L. Bao, L. Wen and J.F. Chen 28

Application of NMR in the Study of Shale Gas Reservoir
W. Guo, W. Xiong and S.S. Gao 33

Research on Similar Material of Physical Model for Bai Jiabao Landslide
Y.H. Yang and S.G. Cheng 37

Research and Application on Laws of Consolidation Time Calculate in Saturated Soft Clay Soil by Using Vacuum-Surcharge Combined Preloading Method
P.B. Xu, S.Q. Lu and J.T. Zhang 42

The Review of Experimental Studies on Non-Coaxial Soil Behaviour Using HCA
Y.Y. Cai, J. Yu, L.T. Yang and M. Mu 46

Comparative Analysis of Single Belled Wedge Pile with Conventional Piles under Lateral Load
G.Q. Kong, X.L. Tan, Z.W. Deng and Z.R. Jin 50

Study of Dynamic Coordinates Time Function in Mine Subsidence

Fracture Characteristics of High Pressure Granite under Unloading Condition
Y.H. Lv, X.T. Feng and B. Yan 61

Calculation and Analysis of Rock Stress State near the Bit
W. Li, T. Yan, S.Q. Li, L. Zhang and X.H. Xu 65

The Study on Key Issues of Slope Instability during Turning Open-Pit into Underground Mining
S.G. Sun, H. Yang, C.S. Li, B.L. Zhang, A.W. Miao and M.Z. Wang 70

Experimental Comparison Study of Stress Sensitivity at Different Levels of Permeability Core
Y.C. Xue, L.S. Cheng and C. Li 76

Influence of Underground Mining on Failure Mode and Stability of Counter-Tilt Slope in Surface Mines
D. Wang, L.Z. Cao, C.D. Piao and R.C. Bai 80

Study on the Regularity of Surface Movement and Deformation in Long Coal Face with Large Mining Height
Z.Q. Xiong, J. He and L.L. Zhao 86

Study on the Treatment Measures of Expansive Rock Slope
E.P. Zhao and X.B. Jia 92

Study on the Impact of Cyclic Wetting and Drying on the Shear Strength of Stabilized Expansive Soils
Y. Dong, W.Z. He and B.T. Wang 96

Analysis on Mesoscopic Dynamic of Soft Soil Foundation in the Pearl River Delta Region Based on the Vacuum Preloading Method
J. Song, R.Y. Yue and P. Zhang 100
Model Test Based on Mechanical Characteristics of Slope Anchor and Water Influence
C. Lin, X.W. Lei, Q.S. Meng and R.F. Zhou

Rheological Test and Research of Deep Clay
X. Zhou, M.G. Xiao, G.C. Sun and J. Cao

Impact Assessment on the Ore Body under the Tower Footing of 500kV Transmission Line
C. Zhang, E.C. Yan, Y. Zhou and Y.J. Wang

Study on Foundation Structure for Comprehensive Power Generation of Offshore Renewable Energy
N. Wang, D. Chen and Y.D. Liao

Stability Analysis of Unsaturated Soil Slopes under Rainfall Infiltration
R.F. Zhou, X.W. Lei, Q.S. Meng and C. Lin

Studies of the Numerical Simulation of Sediment Scour for Wind Power Station in Intertidal Zone
G. Sun, Z.G. Bai, L. Yang, J. Zhang and F.M. Gong

Geological Characteristics and Waterflooding Strategy for Yuanshi Low Permeability Sandstone Reservoir
W. Zhu and Z.J. Cao

Quantitative Study for the Impact of Fines Content on Soil Surface Cracking
Y. Lu, N.S. Chen, L.Q. Lv and M.F. Deng

Stability and Seismic Behavior of Landslide with Deep Overburden Layer in Kala Hydropower Station, China
L. Zhuo, J.D. He, H.Q. Xie and H.L. Yang

Geological Protection Project of the Longmen Grottoes in Luoyang
Q.X. Liu, Y.H. Duan and J.Y. Deng

Influencing Factors and Prevention Measures of Erosion Damage for Highway Slope in Loess Area
L. Hai and X.B. Zhu

Influencing Factors Analysis and Zonation Model Research of Landslides in Loess Region
Z.Z. Zhang, Z.J. Wu, P. Wang, W.J. Yan and T. Chen

Discussion on the Geometric Methods to Calculating the Fault Complexity Coefficient
J.G. Zhang

Analysis of the Calculation Method of Active Earth Pressure of Unsaturated Expansive Soil
J.S. Zhang

Testing Study on the Change Law about Internal Friction Angle of Geogrid Reinforced Clay under many Times Freezing-Thawing Cycles
R.F. Zhao, Y.N. Mi and W. Gao

Numerical Analysis on Ground Displacement at Mined-Out Area of Yuecheng Reservoir Project
S.W. Duan and X.E. Xu

Numerical Analysis of Passive Pile due to Excavation
Y. Sun, Z.Y. Wang, Y.N. Chen and Y.S. Jiang

Influence of Perforation Parameter on Crack Initiation and Extending of Hydraulic Fracturing
M.Z. Jiang, Y. Li, Y.M. Zhang, T.X. Jiang and M.X. Liu

On the Seepage Stability of a Tailing Dam in Wushan Copper Mine

Consolidation Properties of Dredger Fill over Liquid Limit under Different Back Pressure Levels
Y. Shen and Z.Q. Fei

Experimental Investigation on Mechanical Properties of Soft Rock under Instantaneous Triaxial Compression
Y. Wang and F. Liu

Numerical Simulation Method Ascertaining Slope Stabilization Anti-Slippery Pile's Basic Parameters
W.J. Feng, X.D. Ju and Z.S. Zou

The Practice and Cognition of Tracing with Drilling in Fish Bone Horizontal Well
K.C. Yu, Y. Zhu, X.X. Li and S.F. Zhang
<table>
<thead>
<tr>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rock Mesoscopic Structural Plane, Mesoscopic Anisotropy and Mesoscopic Anisotropy</td>
<td>230</td>
</tr>
<tr>
<td>Index</td>
<td></td>
</tr>
<tr>
<td>H.N. Xu, J. Xu and Z.H. Li</td>
<td></td>
</tr>
<tr>
<td>The Affecting Factors of Soil-Reinforcement by Plant Roots</td>
<td>237</td>
</tr>
<tr>
<td>Z.Y. Xia, W. Xiao, Y. Fang and Y.B. Wen</td>
<td></td>
</tr>
<tr>
<td>Study on Restraining Effect of Ground Grouting to the Vertical Additional Force of Shaft Lining</td>
<td>241</td>
</tr>
<tr>
<td>H.Q. Liang and J.X. Wu</td>
<td></td>
</tr>
<tr>
<td>Stability Analysis Method to Underground Goafs in Opencast Mining Based on FEM</td>
<td>246</td>
</tr>
<tr>
<td>F.B. Li, C.W. Lu and Y.F. Li</td>
<td></td>
</tr>
<tr>
<td>The Compression Behavior of Contaminated Clay under Coupled Temperature and Chemical Solution</td>
<td>251</td>
</tr>
<tr>
<td>H.J. Lu, B.Z. Su, Q. Tao, Y.L. Guo, Y. Cao, C.C. Liu and N.J. Zhang</td>
<td></td>
</tr>
<tr>
<td>The Application Research on the Elastic-Flexible Anchor in the Retaining Wall</td>
<td>255</td>
</tr>
<tr>
<td>L. Gao, Y. Shi and G.Q. Xu</td>
<td></td>
</tr>
<tr>
<td>Nonlinear Analysis of Foundation Settlement by Modified Secant Modulus Method</td>
<td>259</td>
</tr>
<tr>
<td>R.P. Li</td>
<td></td>
</tr>
<tr>
<td>FEM Simulation of Earth Pressure on Geosynthetic-Reinforced Soil Retaining Wall under Variable Rate Loading</td>
<td>266</td>
</tr>
<tr>
<td>F.L. Li and F.L. Peng</td>
<td></td>
</tr>
<tr>
<td>Stability Analysis of Unstable Rock after Strong Earthquake</td>
<td>270</td>
</tr>
<tr>
<td>J.P. Pan, J.H. Tian and X.P. Liu</td>
<td></td>
</tr>
<tr>
<td>Additional Stress Distribution in DJM Pile Composite Foundation and Simplified Calculation Method</td>
<td>274</td>
</tr>
<tr>
<td>F.D. He, G.J. Guo and J.Q. Wu</td>
<td></td>
</tr>
<tr>
<td>Numeric Analyses of Dynamic Crack of the Stabilizing Concrete Pile in a Sandy Slope without Underground Water</td>
<td>280</td>
</tr>
<tr>
<td>R.J. Li, R. Yan and J.D. Liu</td>
<td></td>
</tr>
<tr>
<td>Deformation Pattern of Foundation Pit Excavation beside Silt Soil Railway Subgrade</td>
<td>284</td>
</tr>
<tr>
<td>F.D. He, G.J. Guo and Y.N. Zang</td>
<td></td>
</tr>
<tr>
<td>Experimental Study on Creep Characteristics of Coal under Uniaxial Compression</td>
<td>290</td>
</tr>
<tr>
<td>Y.J. Yang, M.F. Guo and D.W. Chen</td>
<td></td>
</tr>
<tr>
<td>The Application of the Ground Penetrating Radar in the Inspection of Gravel Pile Composite Foundation</td>
<td>294</td>
</tr>
<tr>
<td>C.Z. Zhu and X.L. Zheng</td>
<td></td>
</tr>
<tr>
<td>Analysis of Safety and Risk Factors about the Tailings Dam in the Mental Mines</td>
<td>299</td>
</tr>
<tr>
<td>H.Y. Ju, G.Q. Gao, Q.X. Li and J.H. Li</td>
<td></td>
</tr>
<tr>
<td>Research on Gradual Deformation and Fracture Mechanism of Landslide by Model Test</td>
<td>303</td>
</tr>
<tr>
<td>Y.G. Wang, W.Z. Ren and W.Q. Ding</td>
<td></td>
</tr>
<tr>
<td>Experimental Research on Tailings Briquetting for Filling Mining Subsidence Area in Jinshandian Iron Mine</td>
<td>310</td>
</tr>
<tr>
<td>C.F. Du, Y. Zuo, H.F. Li and S.P. Wang</td>
<td></td>
</tr>
<tr>
<td>Research on Pile Foundation of Transmission Tower Stability Analysis Based on Numerical Simulation in Karst Areas</td>
<td>316</td>
</tr>
<tr>
<td>Settlement Analysis of Single Large-Diameter and Super-Long Bored Piles in Cohesive Soils</td>
<td>320</td>
</tr>
<tr>
<td>R.K. Zhang, M.L. Shi and J. Wang</td>
<td></td>
</tr>
<tr>
<td>Triaxial Test of Unsaturated Clay and the Engineering Application at the Naji Reservoir in Guangxi Province</td>
<td>327</td>
</tr>
<tr>
<td>D.G. Ma, Z.K. Zhang and Y.Z. Wang</td>
<td></td>
</tr>
<tr>
<td>Analysis of One-Dimensional Thermal Consolidation of Saturated Soil with and without Thermo-Mechanical Coupling</td>
<td>335</td>
</tr>
<tr>
<td>X. Shen and R.Q. Wu</td>
<td></td>
</tr>
<tr>
<td>The Evaluation of Surrounding Rock Stability around Underground Engineerings Based on Improved Extension Evaluation Method</td>
<td>339</td>
</tr>
<tr>
<td>S.J. Zhang, G.Q. Qiu, W.B. Xie, X.L. Qi, Z.G. Ao and Y. Huang</td>
<td></td>
</tr>
<tr>
<td>Unconfined Compression Strength of Tianluoshan Relic Soils Solidified by Methyl Acrylic Acid Resin</td>
<td>343</td>
</tr>
<tr>
<td>X.J. Chai, C.F. He, J.W. Yu, Y.S. Gao and C.X. Rao</td>
<td></td>
</tr>
<tr>
<td>Title</td>
<td>Page</td>
</tr>
<tr>
<td>----------------------------------------------------------------------</td>
<td>------</td>
</tr>
<tr>
<td>Deformation Prediction of Slopes Based on Grey Verhulst Model</td>
<td></td>
</tr>
<tr>
<td>Z. Qiang</td>
<td>347</td>
</tr>
<tr>
<td>Primary Study on Mechanism of Earthquake-Induced Differential Settlement of Buildings on Liquefiable Subsoil</td>
<td></td>
</tr>
<tr>
<td>F.C. Meng, X.M. Yuan and H. Xue</td>
<td>352</td>
</tr>
<tr>
<td>Stability Analysis and Control Measures of the Kim-Yun-Mine Collapse</td>
<td></td>
</tr>
<tr>
<td>S.S. Zhang and Y.L. Wu</td>
<td>358</td>
</tr>
<tr>
<td>Numerical Analysis on Effect of Rock Rheology on Fully-Grounded MFRP Bolt Stress</td>
<td></td>
</tr>
<tr>
<td>J. Li and B.L. Zheng</td>
<td>362</td>
</tr>
<tr>
<td>Selection of Support Form and Water-Sealing Measure for Deep Excavation in Miscellaneous Interphase Distribution Strata</td>
<td></td>
</tr>
<tr>
<td>H. Yuan and P. Yuan</td>
<td>366</td>
</tr>
<tr>
<td>Research on Mechanism of Consolidating the Saturated Soft Clay with the Application of Pile-Supported Composite Foundation</td>
<td></td>
</tr>
<tr>
<td>Z.H. Zhang</td>
<td>370</td>
</tr>
<tr>
<td>Study on the Prediction Method for Brittle Failure of Hard Rock Based on Acoustic Emission Test</td>
<td></td>
</tr>
<tr>
<td>S.C. Xu, B.R. Chen and C.Y. Jin</td>
<td>376</td>
</tr>
<tr>
<td>Study about the Relationship between the Local Precipitation and Landslide in Zhejiang Province in Recent Years</td>
<td></td>
</tr>
<tr>
<td>S.M. Zhang and S.J. Wang</td>
<td>380</td>
</tr>
<tr>
<td>Analysis on Stability of Powerhouse Slope under the Operation Water Level Condition of Tianhuaban Hydropower Station</td>
<td></td>
</tr>
<tr>
<td>Y.C. Tang</td>
<td>383</td>
</tr>
<tr>
<td>The Saturated - Unsaturated Seepage Analysis of Hualianshu Landslide on the Condition of Rainfall</td>
<td></td>
</tr>
<tr>
<td>Y. Hu and Q. Feng</td>
<td>387</td>
</tr>
<tr>
<td>Structural Damage Detection of Unsaturated Soil Embankment Slope Based on Artificial Neural Network under the Rainfall Infiltration</td>
<td></td>
</tr>
<tr>
<td>Y.J. Wang, W.J. Si, Y.F. Gao and H. Zhou</td>
<td>391</td>
</tr>
<tr>
<td>Moisture Migration Mechanism in Granite Residual Soil Embankment under the Combined Action of Rainfall and Capillary</td>
<td></td>
</tr>
<tr>
<td>Y. Que and X.Q. Yao</td>
<td>395</td>
</tr>
<tr>
<td>Rapid Improvement Technique of Shallow Base in Super-Soft Foundation</td>
<td></td>
</tr>
<tr>
<td>P.S. Chen</td>
<td>401</td>
</tr>
<tr>
<td>Analysis of Dynamic Response of Landslide Stability to Reservoir Water Level Fluctuation Using Numerical Simulation</td>
<td></td>
</tr>
<tr>
<td>Study on Stability of Dayantang Landslide under the Engineering Disturbance and Rainfall</td>
<td></td>
</tr>
<tr>
<td>J.J. Zhou, H. Deng and H. Peng</td>
<td>415</td>
</tr>
<tr>
<td>Comprehensive Effect of the Property Indexes on the Saturated Original Loess Liquefaction</td>
<td></td>
</tr>
<tr>
<td>Q. Wang, L.M. Wang, J. Wang, H.P. Ma and Y.Q. Su</td>
<td>419</td>
</tr>
<tr>
<td>A (\Phi^p) Model for Predicting Shear Strength of Unsaturated Soils</td>
<td></td>
</tr>
<tr>
<td>J.Y. Chen and Y. Hai</td>
<td>425</td>
</tr>
<tr>
<td>Unified Solution of Passive Earth Pressure for Unsaturated Soils</td>
<td></td>
</tr>
<tr>
<td>C.G. Zhang, D.H. Zhu, Z. Gao, G.W. Xue and Z. Li</td>
<td>430</td>
</tr>
<tr>
<td>Research on Engineering Geology Properties of Residual Diorite in Jinan, Shandong Province, China</td>
<td></td>
</tr>
<tr>
<td>M. Shang, Q. Xu, S.C. Li and L.X. Zhang</td>
<td>434</td>
</tr>
<tr>
<td>Fractal Description of Rock Mass Structure Representative Elementary Volume</td>
<td></td>
</tr>
<tr>
<td>T.T. Zhang, E.C. Yan, X.M. Hu and Y.B. Cao</td>
<td>439</td>
</tr>
<tr>
<td>Research on Solid-Gas Coupling Dynamic Model for Loaded Coal Containing Gas</td>
<td></td>
</tr>
<tr>
<td>D.K. Wang, J.P. Wei, H.J. Qin and L. Wei</td>
<td>446</td>
</tr>
<tr>
<td>Studies of Hard Interlayer's Influence on the Creep Deformation of Salt Rock Cavity</td>
<td></td>
</tr>
<tr>
<td>X.L. Huang and C. Yu</td>
<td>452</td>
</tr>
<tr>
<td>Study on Test Cycle of Build-up Well Test in Low Permeability Reservoir</td>
<td></td>
</tr>
<tr>
<td>T.J. Liu, B.Y. Jiang, R. Liu and P.X. Diwu</td>
<td>456</td>
</tr>
<tr>
<td>Pore Pressure Build-up of Silt Soft Clay under Dynamic Loading at Zhoushan Islands</td>
<td></td>
</tr>
<tr>
<td>Q. Shi, K. Zhou and Q. Li</td>
<td>460</td>
</tr>
</tbody>
</table>
Slope Protection with Vegetation for Waste Dump at Guanyue Road in Shanghai
Y.W. Xu 465

A Failure Model for Heterogeneous Nonlinear Anisotropic Geomaterials
H.N. Ruan, D. Wang and J.W. Ju 472

Model Experimental Research of Double-Sided Reinforced Earth Retaining Wall
J. Su and X.Q. Yang 482

The Influence of Dehumidifying Condition on Expansive Soil Engineering Properties
X.W. Li, A.J. Wang and G.Z. Dai 487

Study on Instability Mechanism of Super-Deep Anchorage Foundation Pit Slope of Tertiary Strong Weathered Basalts
Y. Ma, J. Cao, J.X. Shen, K.Y. Jiang and B.J. Zhang 493

Analysis on Deformation Failure Mechanism of Woshaxi Landslide in the Three Gorges Reservoir Area
S.Q. Lu, Q.L. Yi and W. Yi 498

Experiment Study of the Soft Rock Materials Based on Rotary Penetration Test
Q. Li and N. Li 502

Numerical Simulation of Vibration Compacting Process on Hydrous Embankment by Discrete Element Method
B.T. Huang, X. Yuan, J. Zhou and D. Liu 506

Strength and Deformation Characteristics of Stabilized Silty Soil
Z.R. Zhao and H.X. Yang 512

Ground Behaviors due to Seepage Force of Groundwater
L.Y. Meng and H. Yamamoto 516

Study for Quantitative Analysis of Loess Microstructure Influence
P.R. Song and C.M. Wang 522

Experimental Study of the Rotary Filling Piles with Large-Diameter under the Axial Load
W.Q. Zhou and S.P. Ouyang 527

Research Status and Prospect of Strain Monitoring Method of Geotechnical Engineering
J.C. Wu, X.L. Hu, M.J. Sun and S. Hua 532

Numerical Simulation of Stress Wave Propagation in Coal-Rock Combination Media
D.J. Xue, H.W. Zhou, J.D. Liu and H.Y. Yi 542

Finite Element Analysis of Deformation Characteristic for Weak Interlayer Foundation
X.Y. Liu, X.L. Du, J. Zhou and J.S. Sun 552

Analysis of the Shear Stress on Prestressed Anchor in Rock Mass
Y.L. Pan, Y.H. Chen, Y.C. Ma, W.L. Chen and G.Q. Sheng 557

Pseudo-Dynamic Test Analysis of Rigid Pile Composite Foundation

Finite Element Analysis of Cushion Thickness and Ultimate Bearing Capacity of Lime Soil Pile Composite Foundation
Z.S. Wei, Y.M. Zhang and D.H. Peng 565

A Multivariable Grey Model and its Application to Subgrade Settlement Prediction
H.B. Liu, Y.M. Xiang and H.Z. Wang 570

Study on Three-Dimensional Fracture Persistence of a Jointed Rock Mass in a Dam Site in China
X.M. Wang, L. Xia and Q.C. Yu 574

Geosynthetic-Encased Sand Column Behavior under Triaxial Test Simulation
Y.S. Hong, C.S. Wu and C.S. Sun 581

Numerical Analysis on Loading History Correlation for Large Deformation Control within Deep Soft Rock
Y. Yuan, X.C. Wang and X. Liu 585

Evolution Mechanism Study to the Loose-Fractured Rockmasses of Badong Group in Fengjie New Town

Test Research on the Basic Properties of Soft Soil along the Yangtze River Anhui Province
S. Wei, Q.Y. Zhang, J.G. Liu, L.H. Xu and Q. Chen 596

Influence of Groundwater Seepage during Foundation Pit Dewatering on Soil’s Effective Stress
H. Yuan and Y. Hong 600
Change of Soil Stress State around Foundation Pit due to Dewatering
H. Yuan and Y. Hong

Finite Element Analysis of the Effect of Core Pile in Combined Composite Foundation
S.D. Liu, W. Guo and X. Zheng

Research on the Axial Load Transmission Function of Cast-in-Place Pile in Xigeda Rock Stratum
Z.F. Sun, H.L. Qu and X.X. Wu

Research and Exploration on Combined Support Technology in Deep Soft-Rock Roadway
L.W. Ren, G.Y. Wang and L. Wang

Analyze of the Affection of Excavation Unloading of the Rock Mass of the Spillway Tunnel of a Hydropower Station on the Slope’s Stability
L.H. Wang and J.L. Bai

On the Calculation Method of Bearing Capacity of Combined-Pile Composite Foundation
C.Z. Zhu

Study on Surrounding Rock Deformation Characteristics and Control Technology in Deep Soft Rock Roadway
W.H. Zha and X.Z. Hua

Active Limit Equilibrium Method of the Stability Analysis for Soil Slopes
Y. Huang, Z.L. Zhang and K.S. Jin

A Road Slope Stability Analysis
A. Yu, J. Liu, D.D. Yang, H.F. Cao and X.P. Yang

Influence Analysis of Salt Resource Exploitation on Geological Environment in Huai’An
Y. Zhang and Y.L. Wang

Chapter 2: Structural Engineering

Seismic Behavior of Reinforced Concrete Core Wall under Different Span-Depth Ratio of Coupling Beam
P. Jia

Mechanics Simulation and Analysis of the Main Palaestra of the World University Games during the Unloading Process
J. Zheng and J.P. Hao

3D Continuum Model for Nonlinear Dynamic Analysis of Wall-Frame Structures with Uniform Stiffness and Yield Strength
K. Huang, L.H. Zou and J.M. Chen

Stress Analysis of Grain Steel Silo with Hole
Q.F. Peng and F. Wang

Research on the Equivalent Mechanical Parameters for the Honeycomb Core Based on the Y Element
Z.B. Deng, J.S. Zhao and L. Jiang

Research on Mechanical Analysis of Bulk Grain Storehouse Columns by Different Span and Different Height of Grain
L. Huang and H. Zhang

The Improved Structure Design for the Joint of End Floor Beam and Main Longitudinal Girder in Certain Combined Platform
Y.Q. Zeng, M.L. Wang, R.P. Zhang and X.J. Shen

The Overall Stability Calculation Method for Sway Frame
W.F. Tian, J.P. Hao and C.L. Fan

Vertical Bearing Capacity Properties Study of Punched Cast-in-Place Pile Based on Field Test in Driving Analysis Test on Piles of a Thermal Power Plant
L. He, S.J. Ding, Z.X. Feng and Z.W. Han

Study on Comprehensive Performance of the New-Type Steel-Encased Concrete Composite Beams Using FEM

Blasting Technology for Demolition of Large-Scale Steel Structure Buildings by Shaped Charge Cutter
H.P. Ma, K. Yi, M.A. Zhou, M.C. Qiu and K.B. Li
Discussion on Effect Factors and Formula of Bearing Capacity of Reinforced Mixing Pile
G.L. Sheng and Y.G. Zhang 708

Finite Element Analysis of Mass Concrete Temperature Crack Mechanism
Z.H. Xu, D.W. Sun and H. Xiao 713

The Applied Research of Steel-Timber Combined Member to Steel Structure Residence
F.T. Pan, T. Wu and L. Zhang 717

Experimental Study on Bond Behavior of Profiled Steel Sheet-Lightweight Aggregate
Concrete Composite Slab
Y.K. Zhang, Y.X. Han and Z.Z. Song 721

Analysis on Dynamic Failure of Steel Double-Layer Spherical Latticed Shell under Strong Earthquake
Y. Li, H.W. Li and J. Liu 725

The Investigation of Stability Analysis of Tube and Coupler Scaffold
H.Z. Li, Z. Liu and J.Y. Miao 730

Applied Study on Influence Lines of the Statically Determine Plane Trusses Based on EXCEL
M.B. Zhao 734

Theory of Temperature Dynamic Control in Arch Dams and its Application
Y. Duan, X.H. Liu and X.L. Chang 738

Calculation of Temperature Rise of Mass Concrete and Modification of Formula
Y.M. Hu and C. Liang 742

Nonlinear Analysis of Prestressed Cold-Formed U-Shaped Steel and Concrete Composite Beams
J.J. Yu and L.G. Wang 749

Combination of Cable - Pole Grid Static Performance Analysis
G.H. Qin, C.W. Huang and M. Ning 753

Experimental Study on the Flexural Property of GFRP I-Beam
J.Y. Zheng, G.Y. Zhang, Y.H. Chen and S.Z. Li 757

Reliability Control of Quality of Reinforced Concrete Structure during Construction
J.P. Wang, X.Y. Zhao and C.L. Li 761

Chapter 2: Structural Engineering

Timing Analysis on Rock-Bolted Crane Beam of the Underground Power House of Jinping II Hydropower Station
J. Li, S.C. Xu and C.Y. Jin 769

Application Research on Concrete Filled Steel Tube Supports Supporting Technology in Stress Concentration Roadway
G.L. Liu, J. Wang, H.B. Wang, X.S. He and X.B. Li 773

Parametric Study of Beam to Column Extended Endplate Connection in Fire
M. Wang 779

Experimental Research on Bending-Torsion Characteristics of Steel-Concrete Composite Box Beams
Y.L. Zhang, W. Ge and D.Y. Zhang 785

Practical Design Method of the Snow Load for the Low Rise Roof Structures
F. Meng, F.H. Li, M. Gu and S.Z. Shen 791

A Displacement-Based Optimal Design Method of RC Frames Subjected to Minor Earthquakes
G.T. Chen and D.M. Wei 795

The Nature Frequency of Point-Fixed Glass Facades and the Influencing Factors Study
F. He, C.W. Huang and Z.P. Huo 800

Temperature Sensitivity Analysis of Massive Concrete Mixing with Slag Powder and Fly Ash
F. Wang and C. Chen 804

Finite Element Analysis on the Steel Transmission Pole
Y.H. Wang, W. Jiang and H. Wang 808

The Pushover Analysis of R.C Frames Based on SAP2000
J. Li and X.H. Yu 812
Study on Mechanical Properties of Iron Wire Cement Mortar
Z.H. Liu, C.X. Liu, D.C. Huang and L. Wang 816

Split Rigidity Method for Analysis of Three-Way Double-Layer Space Grids Structure
W.Y. Liu and W.F. Zhang 820

Analysis of Failure Mode and Ultimate Bearing Capacity of Steel Truss Coupling Beam
H. Qiang, Z.H. Deng, L. Qian and D.X. Xu 824

A New Method to Estimate Ductility of L-Shaped CFT Columns with Binding Bars under Axial Compression
Y.L. Long and J. Cai 828

Queries for the Calculations of the Shear Wall Stability
X.L. Tong and F. Chen 832

Analysis of the Fire-Resistance of Beam String Structure
F. Zhang 836

Study on the Ultimate Pullout Force of Prestressed Cable Based on Triple Shear Unified Yield Criterion
X.Y. Luo and W.P. Liu 840

Finite Element Analysis of a Single-Layer Reticulated Dome and the Suspendome under Impact Loading
L. Zheng 844

Design Study of Steel Structure Fire-Retardant Coatings under High Temperature (Fire) Conditions
M.L. Ou, W.J. Cao, L.M. Jiang and H. Cao 849

Dynamic Nonlinear Analysis of an Out-of-Code Highrise Building
K. Hu and G. Qu 860

Strength Analysis of Vessel Based on the Fluid Structure Interaction Method
C. Liu, F.C. Li and Y. Yun 869

3-Dimensional Stress Analysis and Safety Assessment of the Underground Draft Tube
X.S. Liu and B.H. Song 876

Theoretical Analysis of Natural Vibration Frequency for Unbonded Prestressed Concrete Beams
F.G. Li and R. Li 882

Nonlinear Dynamic Analysis of the Damping Frame Structure System
G. Hong, M. Li and Y.Z. Yang 886

Summary of Research on Concrete Filled Steel Tubular (CFST) Columns
F.X. Yin, J.T. Zhang and P.B. Xu 891

A Measure to Imitate the Boundary Condition of Local Structure in Modal Analysis
Y.C. Song, B. Yang and H.L. Yu 896

Study on Type Design of Multi-Circuit Transmission Line Tower
Y.H. Wang, S.M. Meng and B. Tang 900

Dynamic Analysis of Steel-Concrete Composite Frames with Partial Interaction
J. Xia, Z. Shen and B. Chen 904

Test and Finite Element Analysis on Dynamic Characteristics of Trestle Wharf
X.P. Sun, Z.Y. Zhu and B.H. Zhao 908

Analysis of Prestressing Loss on Construction of External Prestressed Wooden Buildings
J.M. Zhang, J.L. Pan and H.B. Dong 914

Dynamic Response of the Glass Curtain Wall of the Cable Truss under Wind Loads
R.F. Liu, C.W. Huang and Z.P. Huo 921

The Study on the Strengthening of Wind-Resistant for Transmission Tower in Coastal Areas
Q. Xiao, Z. Li and X.H. Xu 925

The Impact of Aggregates Distribution on Concrete Failure
M. Du, P. Gao and F.J. Chen 929

Inspection and Appraisal Method of a Wharf on Piles and Result Analysis
L.Q. Wang, K.H. Jiang and C.H. Huang 933

In-Plane Dynamics of Multilayer A-Type U-Shaped Corrugated Structure Materials
Y. Liu, D.Q. Sun, X.Y. Pan and G.H. Yao 937
### Study on Mechanical Behavior Influence of the Hollow Ratio to the Cast-In Situ Concrete Hollow Slab with Two-Way Tube Fillers
Z.Y. Jiang and Z.H. Luo
942

### Experiment Study on Interfacial Normal Bond Strength of Concrete Filled Steel Tube
Z.Y. Liu
947

### Mechanical Property Study of Corroded Steel Beams Strengthened with Prestressed CFRP Sheets
J.H. Huo and B. Pang
955

### The Equal Projection Model and Application of Short Fiber Reinforced Concrete
Y.R. Li, H.B. Jiang and Z.B. Kan
959

### Equilibrium Paths of a Fractional Order Viscoelastic Two-Member Truss
M.Q. Tang and Y.P. Li
963

### Dynamic Behavior of Extra-High Building with Wind Load and Gravity Coupling Effect
Z.Y. Zhong
969

### Numerical Simulation Analysis of the Typical Reinforced-Concrete Wall-Beam Joint
J.T. Jiang, Y. Liu, W.H. Wu, S. Yang and D.R. Du
973

### Sliding Analysis on Steel Encased Concrete Composite Beams
J.T. Jiang, Y.Y. Xue, K. Dong, D.R. Du and S. Yang
977

### The Principle of Equivalent Center of Mass of FPB & Superstructure
J.Y. Xia, H.X. Hao, X.L. Ning, Y.X. Hu, S.H. Li and X.Y. Leng
982

### Study on Capacity of High-Strength Angle Struts Connected by Single Limb
C.L. Fan, J.P. Hao and W.F. Tian
987

### Discussions on Shape Determination of a New Space Beam-String-Structure with Outer Truss Torus
Y.L. Yao and G.Y. Ma
993

## Chapter 3: Reliability, Durability and Rehabilitation of Structures

### Sensitivity Analysis of Durability Parameters of Concrete Structures Corroded by Chloride Ions
L. Zeng, Y.C. Guo and Z. Zhao
999

### Reliability Study on Bolt Support Systems of Coal Roadway under Group Failure Modes Based on Maximal Entropy Principle
F. Wang and T.J. Cui
1005

### Durability Design of Tunnel Concrete Lining under Chloride Attack
L.F. Yang, H. Bin and Y. Bo
1009

### The Application Research on the Carbon Fiber Sheet Reinforcement Technique in the Frame Beamstrengthening
L. Xu and W.Z. Gao
1014

### On Analysis of Ancient Town Settlement along Sichuan Salt Road - Taking the Landscape Optimization and Updated Design of Xianshi Ancient Town, Zigong, Sichuan as an Example
P.Y. Li and Y.C. Chen
1025

### Kiln-Courtyard Residence in Western of HenanResearch of the Characteristics of Ancient Residences in Qiaozhuang Village
Y.J. Hu
1029

### The Application of Fuzzy Synthesis Evaluation Method on Assessing Bridge Durability
F. Zheng, Y. Wang and P.Y. Zhang
1033

### Fatigue Reliability Updating Evaluation of Hydraulic Steel Gate Based on Bayes Theorem
K. Li
1038

### The Properties of High Strength Bolt Connection Pairs with Hot-Dip Coating
Y.L. Peng, G.X. Li, L. Hui and S.J. Xia
1042

### The Effects of Two Anti-Corrosion Processing Mode on the against Slip Coefficient between Friction Surface of High-Strength Bolts Connection
L. Hui, G.X. Li, Y.L. Peng and S.J. Xia
1046
Study on Rectification Plan of the Ancient Pagoda
J.W. Zhang, G.L. Sheng and H. Yuan 1050

Evaluation of Reinforcement Effects for Earth Cliff of Jiaohe Ancient City

The Durability Failure of Pre-Damaged Concrete Induced by Mechanical Load
F.Z. Zhu, F.X. Jiang, J. Shang and Z.H. Bi 1061

Chapter 4: Monitoring and Control of Structures

Distributed Landslide Monitoring by Wireless Sensor Nodes
C. Hu, S.B. Zhang, S.Z. Xu and B. Xu 1069

Structural Damage Detection Based on Generalized Flexibility Matrix
J. Li 1074

The Monitoring Technology Research about the Tunnel Blasting Vibration under the Complex Construction
J.Q. Zhao, H.Y. Ju, J.H. Li and Y.P. Liu 1078

Structural Damage Identification Based on Moving Load and High-Order Spectrum Analysis
B.Y. Wang 1082

Remote Video Surveillance Applications in Landslide Monitoring
J. Yin, H.F. Wang, S.M. Wang and F. Xu 1086

To Realize the Detection and Control of Environment Temperature and Optical Intensity Based on AT89S52
T.X. Yang and S.L. Bi 1093

Optimal Sensor Configuration for Bridge Structures Following a Probabilistic Approach
T. Yin, H.P. Zhu and D.Q. Li 1098

Application of Wavelet Packet Transform and Neural Network to Detect Damage of Elastic Thin Plate
D.H. Xie and H.W. Tang 1105

The Application of Elastic Wave Reflection Method in the Pile Foundation Inspection
J.S. Liu 1109

Modal Parameter Identification Method for Structural Health Monitoring Benchmark Model
C. Li and L. Yu 1113

Optimal Sensor Placement Based on MAC and SPGA Algorithms
Y.M. Fu and L. Yu 1118

The Design of Densely Measured Points Long-Term Monitoring System Based on Wireless Sensor Network
X. Cheng, Z.H. Liu and W.C. Gao 1123

The Design of the Sewage Device in Seepage Monitoring Instrument for Dam Foundation
H. Deng, Z.H. Zhang, J. Li, M. Yuan and F.Y. Wang 1128

Structural Identification of an Old Bridge by Multiple Reference Impact Test Method
Y.J. Liao, Y. Zhou and P. Qin 1132

Study on Infrared Thermography Mosaic Algorithm Based on the Feature Point Detection and Registration
J.T. Jiang, C. Song and J. An 1138

Research on the Optimization of Dam Foundation Seepage Control System
J. Wang 1143

Construction Quality Control of Dynamic Compaction Method Treatment Collapsible Loess Foundation
Z.R. Zhao and H.X. Yang 1149

The Rail Bridge Bearing Long-Term Online Monitoring and Analysis
J. Liu 1153

Chapter 5: Tunnel, Subway and Underground Facilities
Advances in Industrial and Civil Engineering

Analysis on Bolt Supporting Mechanism for Roadways Driving along next Goaf Based on Triaxial Compression Test
S. Zhong, Y.J. Yang and M. Wang

Mechanics Characteristic Analysis of Loess Metro Tunnel Structure in Soaking Surrounding Rock
J.J. Zheng, L.J. Wu and R.G. Guo

Study on Splitting Tensile Strength of Shotcret Layer of High Temperature Tunnel
Y. Zhang, N. Li and H.B. Zhang

Surrounding Rock Stability Analysis and Rock Burst Prediction of Underground Cavity in High In Situ Stress
H.Y. Zang and G.D. Wang

Numerical Simulation Analysis and Engineering Applications on the Double-Side-Wall Heading Step Bench Excavation of Large-Cross Section and Shallow Tunnel
W.H. Li, D.J. Zhao and S.S. Zhou

Water Jet Vacuum Dust Suppression Device Used to Tunnel Development
L. Jian, H. Na, Y.W. Wu and L. Jin

Energy-Saving Experimental Study on Reflective Material Auxiliary Tunnel Lighting Based on Visual Effect
B. Liang, G.B. Pan, Y.H. Pi and W.Y. Li

Illumination Energy Conservation Analysis of Reflective Material on the Tunnel Sidewall
G.B. Pan, L.N. Shi, B. Liang and Y.H. Pi

Research and Design Optimization of Canceling Setting Invert in Road Tunnel
D.Q. Xu, J. Liu and Y. Sun

Calculation of Underground Tunnels' Safety Factor Based on the Strength Reduction Technique
C.P. Shi, X.T. Feng and Q. Jiang

Mechanical Behaviour of Shallow Tunnel in Unsymmetrical Strata
S.Y. Yang

Design of Broad-Columns Joint and Analysis of Stress for Top-down Construction Method of Underground Engineering
W.M. Xiang, X.C. Zheng, K.P. Shen and M. Zhou

Seismic Analysis of Nuclear Project for Joint between Intake Tunnel and Circumfluence Groove
J. Zhao, G.X. Wang and X.H. Lu

Research on Collision of Metro Comprehensive Pipeline
Q. Zhao, G.L. Bai, X.H. Hei and P.F. Zhang

Numerical Simulation on the Influence of the Groundwater Flow Field during Tunnelling
X.B. Kang, X.W. Hu and H.Q. Xie

Effect of EPB Shield Tunneling on Adjacent High Speed Railway Viaduct
Y. Xiang

Research on Stability in Metro Tunnel Constructing with Shallow Buried Covered Excavation in Loose Sand Layers
S.G. Li, W. Zhao, X.L. Cai, Y.F. Ma and L. Zhang

Analysis of Fire Smoke Control System of under Construction Tunnel
J.Y. Sun, Z. Fang and J.P. Yuan

Risk Assessment of High-Speed Railway Tunnel Construction Based on Fuzzy Synthetic Evaluation
L. Wu, L.G. Zhang, Y. Lai and J. Chen

Research on Numerical Simulation of High Filling Culverts Foundation Failure Mode
J.W. Cao, C.M. Sha, B. Liu and Y. Sun

Research of Water Inflow Impact on Ecological Environment for Cimushan Tunnel
X.G. Jin, H.W. Liu and S.X. Zhou

Water Inflow Quantity Evaluation and Prediction for Cimushan Tunnel
X.G. Jin, Y.J. Jin and H.F. Tang

Study on the Methods of Advanced Geological Prediction of Double-Arch Highway Tunnel in Karst Area
C.X. He, C.J. Lin and X. Yao

Research about the Rationality of Neighborhood Tunnel Spacing
B.W. Yang and S.S. Yang
Studying the Three Dimensional Excavation Effect Affecting the Monitoring Displacement of Metro Station
Z.P. Song, J. Liu and A.N. Jiang

Controlling Technology Research of Deforming due to South-to-North Water Transfer Tunnel down Crossing Subway
D.H. Li, Y. Liu, M.S. Wang and D.L. Zhang

Y. Jia, Y.L. Li and L. Huo

Construction Schedules Simulation and Prediction of Water Conveyance Tunnel Based on Karst Geological Condition
L. Bi, J.Q. Luo and D.W. Tong

Safety Analysis of the Vertical Shaft and Corresponding Safety Measures
H.L. Zhu, X.H. Liu and X.P. Yao

Analysis on Damage Cause of Shield Tunnel Segments during Construction

Experimental Study on the Technology of Middle Empty Hole in Parallel Hole Cut Blasting
R.S. Yang, Y.L. Che, X. Tong, Y.L. Mi and L. Feng

Quantitative Analysis of Several Influencing Factors on TBM Advance Speed
C. Li, J. Tiedemann and H.W. Zhou

Numerical Analysis of Underground Concrete Arch Structure Strengthened with Near-Surface Bonded CFRP Strips

Significant Analysis of Soft Rock Tunnel Disaster-Causing Factors Based on Orthogonal Test
J.P. Chen, Y. Xu, C.Q. Zuo and Y. Yi

New Technologies for Highway Alignment under Complicated Environmental Conditions in Mountain Areas
C.D. Gao

An Analysis on Failure Pattern of CFG Pile-Net Composite Foundation of High-Speed Railway
D.P. Jiang and B.L. Wang

Several Related Factors on Highway Nondestructive Testing
S.M. He

Cement-Gravel Piles for Highway Soft Soil Settlement Treatment in Yunnan Province
G.X. Wu, L. Zhang and L.J. Luo

Study on Durability of High Bending Strength Pavement Concrete
W.H. Guo

Stress Characteristic Analysis of Repaving Asphalt Pavement Structure on Old Cement Road
H.L. Mao, P.Z. Zhuang, Y.N. Zang and X.M. Yi

Analysis of Equivalent Static Method for Subway Station
L. Chen and D.J. Yang

Experimental Analysis of Failure Modes and Pavement Strength Control Parameters to Existing Cement Concrete Pavement
J.Y. Yuan, Y. Yu, T. Cheng, D.B. Zhang, Z.H. Wu and J. Xiang

Poisson Log-Linear Regression Model for Rural Signalized Intersection
Z.P. Ren
<table>
<thead>
<tr>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dynamic Response of Airport Concrete Pavement to Impact Loading</td>
<td>1395</td>
</tr>
<tr>
<td>J. Cai, L.N.Y. Wong and H.W. Yan</td>
<td></td>
</tr>
<tr>
<td>The Study on Road Performance and Pavement Structure Analysis for the</td>
<td>1402</td>
</tr>
<tr>
<td>Base Layer Material Stabilized by SRX</td>
<td></td>
</tr>
<tr>
<td>Y. Zhang, Y.L. Zhao and B.Y. Yu</td>
<td></td>
</tr>
<tr>
<td>Experiment Data Analysis of Comparative Test Research on Expressway</td>
<td>1407</td>
</tr>
<tr>
<td>Asphalt and Asphalt Mixture</td>
<td></td>
</tr>
<tr>
<td>Y.D. Hu, M.D. Xiong and T.T. Yu</td>
<td></td>
</tr>
<tr>
<td>High-Grade Highway Safety Evaluation Method Based on Grey Clustering</td>
<td>1412</td>
</tr>
<tr>
<td>S.N. Hu</td>
<td></td>
</tr>
<tr>
<td>Construction Technology of Airfield Pavement Gravelly Substructure</td>
<td>1416</td>
</tr>
<tr>
<td>under Saline Soil Condition</td>
<td></td>
</tr>
<tr>
<td>C.G. He, Z.C. Li and T. Zhang</td>
<td></td>
</tr>
<tr>
<td>Study on the Effect of Jet Grouting Pile Reinforcing Soft Soil</td>
<td>1420</td>
</tr>
<tr>
<td>Subgrade</td>
<td></td>
</tr>
<tr>
<td>G.Y. Liu and B.L. Wang</td>
<td></td>
</tr>
<tr>
<td>Protection and Utilization of Soil Seed Bank in Road Construction</td>
<td>1429</td>
</tr>
<tr>
<td>G.Z. Luo, J. Wang and J.S. Fu</td>
<td></td>
</tr>
<tr>
<td>Numerical Simulation on Stress Transmission under Vehicle Load for</td>
<td>1435</td>
</tr>
<tr>
<td>Western Expressway</td>
<td></td>
</tr>
<tr>
<td>C. Li, J.J. Zhang and L.P. Gao</td>
<td></td>
</tr>
<tr>
<td>Mechanics Properties of the Lime-Fly Ash Stabilized Soil for</td>
<td>1445</td>
</tr>
<tr>
<td>Pavement Structures</td>
<td></td>
</tr>
<tr>
<td>T. Cheng and K.Q. Yan</td>
<td></td>
</tr>
<tr>
<td>Discussion on Overpass Pedestrian System in Downtown Area</td>
<td>1449</td>
</tr>
<tr>
<td>Y. Jiang and Z. Yang</td>
<td></td>
</tr>
<tr>
<td>Prediction of Possible Speed and its Application in Highway Alignment</td>
<td>1456</td>
</tr>
<tr>
<td>Design</td>
<td></td>
</tr>
<tr>
<td>Y.H. Fan and S.W. Yang</td>
<td></td>
</tr>
<tr>
<td>Evaluation of Highway Alignment Safety Design Based on Operating</td>
<td>1463</td>
</tr>
<tr>
<td>Speed</td>
<td></td>
</tr>
<tr>
<td>S.N. Hu, P. Qiu, Q.D. Fan and Z.H. Hu</td>
<td></td>
</tr>
<tr>
<td>Research and Application of Anti-Rutting in the Asphalt Mixtures</td>
<td>1467</td>
</tr>
<tr>
<td>X.H. Yang</td>
<td></td>
</tr>
<tr>
<td>Adaptability Analysis of Preventive Maintenance Measures for Asphalt</td>
<td>1471</td>
</tr>
<tr>
<td>Pavement</td>
<td></td>
</tr>
<tr>
<td>Application Study of Impact Compaction Technology in Wetness and</td>
<td>1477</td>
</tr>
<tr>
<td>Softness Loess Roadbed Treatment</td>
<td></td>
</tr>
<tr>
<td>R.F. Song and D. Wang</td>
<td></td>
</tr>
<tr>
<td>Finite Element Transient Analysis on the Highway Reflective Crack in</td>
<td>1482</td>
</tr>
<tr>
<td>Temperature Change</td>
<td></td>
</tr>
<tr>
<td>S.Y. Yang</td>
<td></td>
</tr>
</tbody>
</table>

### Chapter 7: Bridge Engineering

<table>
<thead>
<tr>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Study on Transverse Linear Stiffness of Bridge Piers in a High-Speed</td>
<td>1489</td>
</tr>
<tr>
<td>Railway</td>
<td></td>
</tr>
<tr>
<td>H. Li, H. Duan, X.Z. Li and C.S. Shan</td>
<td></td>
</tr>
<tr>
<td>Stress Analysis of High Thin-Walled Box Girder Bridge in Chong He</td>
<td>1494</td>
</tr>
<tr>
<td>Bridge</td>
<td></td>
</tr>
<tr>
<td>P.X. Wang, K.X. Yu and J. Di</td>
<td></td>
</tr>
<tr>
<td>Shrinkage and Creep of Concrete on the Mechanical Properties of</td>
<td>1498</td>
</tr>
<tr>
<td>Cable-Stayed Bridge</td>
<td></td>
</tr>
<tr>
<td>H.S. Gao and T.Y. Li</td>
<td></td>
</tr>
<tr>
<td>Study on Fluid-Solid Coupling Analysis Method of Bridge Pier</td>
<td>1504</td>
</tr>
<tr>
<td>J.X. Yang, S.R. Zuo and Y.F. Huang</td>
<td></td>
</tr>
<tr>
<td>The Experimental Study on Controlling the Hydration Heat Temperature</td>
<td>1509</td>
</tr>
<tr>
<td>Field of the Zhenyuling Bridge Pile Caps</td>
<td></td>
</tr>
<tr>
<td>C.J. Lin, G.G. Fu and L.L. Guo</td>
<td></td>
</tr>
<tr>
<td>Prestressed Concrete Continuous Girder Bridge Reinforcement</td>
<td>1516</td>
</tr>
<tr>
<td>Simulation Analysis and Carrying Capacity Assessment</td>
<td></td>
</tr>
<tr>
<td>L. Yu, T.Z. Qiao, L.S. Bao and G.S. Zhu</td>
<td></td>
</tr>
<tr>
<td>Stressing and Monitoring Techniques for Steel Tie Rods in</td>
<td>1522</td>
</tr>
<tr>
<td>Special-Shaped Inclined-Column Bridge</td>
<td></td>
</tr>
</tbody>
</table>
Chapter 7: Bridge Engineering

The Application of Carbon Fiber Concrete in the Intelligent Bridge Reinforcement
R. Lu and X.M. He 1539

Vessel-Bridge Collision Force Research on Ordinary Highway Bridge in Fujian Navigable River
J.F. Lin, Y. Su and Y.T. Du 1543

Experimental Research on Concrete Shrinkage and Creep for Main Girder of Sutong Continuous Rigid-Frame Bridge
Y.T. Zhang 1547

Analytical Solution for Vertical Dynamic Response of Railway Simply Supported Beam Bridge under Bidirectional Moving Loads
W. Ye, X.Z. Li, H. Duan, C.S. Shan and X.H. Liu 1552

Fine Analysis for Bursting Damage of Bottom Plates in Closure Section of Continuous Rigid Frame Bridge
X.D. Zuo, B. Ge and J.Y. Song 1557

Internal Force Calculation of Two-Way Curved Arch Bridge
B.R. Huo, G.N. Yang and X.D. Zhang 1561

Study on Normal Section Bearing Capacity of Stone Arch Rib Enclosed by Reinforced Concrete
J. Zhang and Y.J. Qian 1565

Dynamic Analysis for Steel Bridge Deck Thin Surfacing with Cracks
X.Q. Xu, J.B. Wang and J.P. Chen 1569

Static and Dynamic Response Contrast Simulation of Long-Span Beam Bridge Subjected to Flowing Ice
Z.P. Bai, X.D. Zhang and C.L. Han 1573

Wudu Bridge - The Structure Stress Numerical Analysis of Triangle Frame Hanging Continuous Beam Combination Bridge
S.S. Zhou, W.H. Li and X.D. Chen 1577

Pre-Evaluation of Durability for Concrete Bridge
X.Z. Zheng and J.F. Lin 1581

Application of the Influence Line on the Bridge Testing
R.F. Zhang, X.M. Zhang and C.X. Qi 1586

Research on the Load Distribution Coefficient of Cable-Stayed Bridge with Long Cantilever Structure Based on Full-Scale Test
X.Z. Li, H. Duan, H. Li, W. Ye and X.H. Liu 1590

Research on Base Frequency of Simple Supported Beam Footbridge
T.T. Gao, Z. Li and Y. Shi 1595

Bridge Technology and Aesthetics of Chinese Poetry in Bridge Design
Y. Li and L.L. Zhang 1600

Scaffold Design and Stability Design of Tangfangya Bridge
Y.J. Xie 1604

Chapter 8: Seismic Engineering

Status of Seismic Isolation Research on Underground Structures
Q.H. Wei and H.F. Sun 1611

Analysis on Dynamic Failure Behaviors of Steel Double-Layer Grids Supported by Circumjacent Steel Columns Used in a Gymnasium with the Function of Earthquake Victims Shelter under Disaster Earthquake
X. Zhao, H.W. Li, J. Liu and Y. Ma 1616
F. Wang, X.L. Li and T.H. Yi 1620

Experimental Study on Behavior of Interface between Coarse-Grained Soil and Gravel-Clay under Seismic Loading
P. Liu and G. Yang 1624

The Mitigation Measures of Frequent Earthquake in the Construction of New Rural Area
W. Liu, X.L. Zhang and P. Zou 1629

GB ASME & RCCM Analysis of Piping Design Comparison about Class 2 Components
W.T. Bai and J.W. Dai 1634

Research on the Dynamic Response of Dam under Rare Earthquake through Dynamic Time-History Analysis Method
Y.X. He, Y. Qiang and L. Li 1640

The Application of Mode-Superposition Response Spectrum Method in Seismic Calculation of the Boiler Steel Structure
S.W. Li, W. Zhao and J.X. Jin 1645

Difference Analysis of Loess Seismic Subsidence between In Situ Experiment and Laboratory Test
S.H. Xu, L.M. Wang and J.J. Sun 1652

The Effect of Site Condition on Ground Motion in Gansu Province during the Wenchun Ms8.0 Earthquake

Effects of Overburden Thickness and Slope Grade of Loess Sites on the Amplification of Peak Acceleration

Experimental Study on Seismic of High-Strength Spiral Stirrups Prefabricated Column Encased by Steel Plate Hoop and Bolt Reinforcement
X.C. Zheng, Q.N. Li, S.B. Pan and W.S. Jiang 1675

Test Research on Seismic Performance of Beam
H.T. Wan and Y.Q. Yuan 1680

Research on Performance-Based Design Theory
H.T. Wan and Q.M. Kong 1684

Identification Methods of Important Parameters for Near-Fault Pulse-Type Ground Motions
M. Li, Q. Jin, Y. Liu, H. Yuan and Z.Z. Sun 1688

Forecasting Seismic Damage in Frame-Shear Wall Structure Based on Fuzzy Neural Network
W. Jiang and B.X. Gu 1692

Effect of Ridge Topography on Earthquake Ground Motion
G.D. Xu, Z.H. Zhou, J.S. Bo and W.H. Fang 1696

Analysis of Using Interlayer Seismic Isolation Technology in Storey-Adding Structure
W. Guo, S.D. Liu, J.Y. Liu and R.H. Zhang 1702

Scientific Problems on Seismic Resistance of Bridge of Pile Foundation in Liquefiable Site

Earthquake Action of Cold Storage Structure
J.M. Zhang and H.B. Dong 1713

Study on Critical Shear Wave Velocity of Saturated Loess Foundation Soil Liquefaction under Different Seismic Magnitudes Action
P. Wang, L.M. Wang, Q. Wang and J. Wang 1720

The Spatial Distribution Characteristics of Seismic Induced Geo-Hazards and Ground Damage Classification in Baisha River
H.J. Meng and J.P. Qiao 1727

Isolated Structures Research and Comparative with Traditional Seismic Structures
M. Yao and T.Y. Li 1734

Seismic Evaluation and Strengthening on Teaching Building of Masonry Structure
D.R. Du, Y.N. Wu and J.T. Jiang 1740

Research about Efficiency of Seismic Mitigation for the Dry Friction Plate-Spring Reverted System in High-Rise Building
N. Ge, H.B. Chen and J.S. Hao 1745
Research about Rolling Friction Pendulum Seismic Isolation System on Ellipse Track
J. Pan, N. Ge and L.T. Yao

Earthquake and Underground Powerhouse: On the Aseismic Issues of Baihetan Underground Cavern Complex
X.L. Leng, J.J. Liu, C. Zhen and S. Qian

The Cable-Stayed Bridge with the T - Structure Collaborative System Bridge Seismic Response Analysis
B.C. Yu, D.Y. Zhang, S.X. Gao and X.C. Tang

Seismic Performance on Reinforced Concrete Frame Joints of Open Set Corner Floor
H.B. Chen, N. Ge and Y.P. Zhang

Hybrid Base Isolation System with Friction Sliders and Viscous Dampers in Parallel: Comparative Dynamic Nonlinear Analysis with Traditional Fixed Base Structure
D. Cancellara and F. de Angelis

The Effect of Structural Parameters on Seismic Behavior of Concrete-Filled Steel Tubular Frames with Buckling-Restrained Brace
F.M. Ren, J.B. Zhang, Y. Zhou and X.L. Du

Seismic Analysis and Comparison of Different Base Isolation Systems for a Multi-Storey RC Building with Irregularities in Plan
D. Cancellara and F. de Angelis

Seismic Performance Reliability Analysis of Frame Structure with Special-Shaped Columns
Y. Liu and H.B. Liu

Laboratory Study and Evaluation of the Loess Liquefaction under Random Seismic Loading

Seismic Analysis of an Earth-Rock Dam on Thick Alluvial Deposit
W.J. Cen, S. Wang, Z.X. Yang and H. Sun

The Study on the Effects of Different Forms of Steel on Seismic Performance of Steel Reinforced High-Strength Concrete L-Shape Short Pier Shear Wall
Y.S. Su, J.Y. Quan, W. Zhang and Y.B. Yang

Development Law of Seismic Subsidence of Loess through In Situ Explosion Test
Q. Wang, J.J. Sun and L.M. Wang

Study on Seismic Reinforcement Measure of Mountain Tunnel Cavity
T. Deng, S.L. Zhang and J.M. Yao

Progress in the Seismic Strengthening of RC Frame Connections
L.H. Wan, G.D. Zhao and L.L. Li

Simulation of the Seismic Response of 2D Sedimentary Basin with Hybrid PSM/FDM Method
W.J. Yan, Y.B. Wang and Y.C. Shi

The Dynamic Response and Stability Analysis of Nuclear Power Station Water Intake Diversion Dike
J. Zhao, L.Y. Deng and G.X. Wang

Characteristic and Stability Analysis for Loess Seismic Landslide in Valley City
W. Nai, L.M. Wang, Z.X. Yuan and W. Qian

Failure Mechanisms of the Landslides Triggered by the 2008 Wenchuan Earthquake, China
F.P. Cui, Y.P. Yin, R.L. Hu and J.Q. Yu

Chapter 9: Hydraulic Engineering

A Method to Determine the Warning Value of the Opening of Concrete Dam Crack Based on the Analysis of Time-Effect and the Low Probability Method
J. Jing

Flood Influence Evaluation of Xiazhu Village Construction Land in Wuqing District in Tianjin City
P. Yu, P. Feng and S.H. Sun

Design and Application of Concrete Faced Rock-Fill Dam Numerical Simulation Analysis Program
H.R. Li, F. Feng and Q. Wang
A Simplified Analysis Method for the Validity of Pipeline Rock Armour Berm Protection Design
W.B. Liu, R. Liu, G.M. Sun and S.W. Yan 1888

Finite Element Analysis of Unsteady Seepage Flow through the Earth Dam of Huangbizhuang Reservoir
E.X. Du and J.H. Sun 1892

An Improvement of General Design Methods for Lock Castle Structures
Z.H. Cao, J.J. Lian and X.Z. Liu 1897

Control of Artificial Recharge on Foundation Pit Deformation due to Dewatering
H. Yuan and Y. Hong 1901

New Type of Spur Dike at the Exit of Diversion Channel: Courter-Arc Vertical Ladder Spur Dike
S.B. Yue and M.J. Diao 1905

Temperature Induced Cracking Analysis for Lushui Pier Using LEFM
J. Cheng, X.L. Chang and T.C. Li 1913

Analysis and Research on Dynamic Characteristics of Bulb Tubular Pumping Station Structure
Y. Xiao and X.T. Ding 1917

Dynamic Stability and Reinforcement Effect Analyses of Dagangshan High Arch Dam Abutment
Q. Yang, J.H. Zhang, J.D. Shao and M.L. Li 1922

The Research on the Relation between Flexibility Coefficient and Buckling Stability of High Arch Dam
H. Li, Z.Z. Wang and X. She 1932

Stability Analysis to the Imports Slope of the Spillway Tunnel of a Hydropower Station
R.H. Wang, J.L. Bai and Z.R. Jiang 1936

The Influence of Turbulence Model Selection and Leakage Considerations on CFD Simulation Results for a Centrifugal Pump
H. Liu and H.C. Pan 1940

Applying the Method of Fuzzy Clustering to Study Leakage from Dyke
Z.C. Fan and J. Sun 1945

Numerical Simulation of the Influence of Water Flow on Navigation and Optimization Scheme Selection of a Power Station
J. Hu 1950

Study on Estimating Failure Probability of Earth-Rock Dams
R.R. Sun, X.L. Wang, X.F. Ao and W.P. Guo 1957

Hydraulic Experimental Study on Nonmetallic Plastic Pipeline
B.J. Liu, L. Zhang and C. Guan 1961

Study on the Gray Fuzzy Comprehensive Evaluation Model about Dam-Break Consequences
X.L. Wang, Q.S. Wang, R.R. Sun and X.F. Ao 1965

Study on Stress of Closed Cut-Off Wall in Earth-Rock Dam Reinforcement under Different Engineering Conditions
J.L. Gao and Y.X. Chen 1969

Study on Flow Velocity Field of Local Scour around the Pier Protected by the Sediment Storage Dam
H.J. Zhao, D.X. Li and X.K. Wang 1975

Temperature Control Measures and Feedback Analysis in Rapid Construction of Guandi RCC Dam
W. Zhou, X.Y. Jing and X.H. Liu 1979

Flood Risk Map Analysis Based on Dam-Break Simulation
X.L. Wang, L. Zhou and R.R. Sun 1983

Influence of Hydraulic Factor of Vertical-Slot Fishway on Swimming Ability of Fish

The Advances in Risk Analysis of Reservoir Operation Research
Y. Ye, G.W. Ma and Y.B. Zhang 1993

Research on Influence of Sediments Mechanical Parameters of Seismic Arch Dams
Y.Z. Yan, Z.M. Su and L. Wu 1998
The Normal Depth and Critical Depth of Special Cross-Section

Use of Prior Information for Calibration of River Roughness
Y.F. Chen and C. Wang 2009

Hydraulic Experimental Study on Two Kinds of Nonmetallic Plastic Pipes
B.J. Liu, C. Guan and Z.C. Zong 2014

The Analytical Solution of Hydrodynamic Pressure of Full Water Tunnel in the Horizontal Excitation
J.Y. Liu and S.N. Sun 2018

Chapter 10: Water Supply and Drainage Engineering

The Application of Three Dimensional Drainage Flexible and Ecological Reinforced Construction in High-Speed Railway Station Roadbed
A.H. Wang and H.S. He 2025

Simplified Technology for Modified Micro-Irrigation of Agricultural Sheds
L. Yu and H. Peng 2030

Research on Urban Water Demand Prediction
K.Y. Wan 2037

Research on Identification of Comprehensive Pipeline Headroom in Certain Area
Q. Zhao, G.L. Bai, X.H. Hei and P.F. Zhang 2041

Magnetic Water Treatment to Inhibit Calcium Carbonate Scale Deposition in the Drainage System of an Old Tunnel in Seoul, South Korea
E. Yee, J.W. Lee, D.S. Lim and B.S. Chun 2045

Characteristics of Combined Sewer Overflows in Nanjing and Selection of Intercepted Time
Q. Feng and C.Y. Wu 2056

The Evaluation of the Water Quality of Shenwo Reservoir Based on Fuzzy Comprehensive Evaluation Method
D. Liu, N. Hu, H.Y. Liu and A. Gong 2061

Numerical Simulation of Hydraulic Characteristics in a Tangential Vortex Dropshaft
R.Y. Jia, S.F. Zhang and L. Hu 2066

Chapter 11: Heating, Gas Supply, Ventilation and Air Conditioning Works

Tests on High-Pressure Water Rotational Jetting Ventilation Cooling Characteristic
Z.F. Ma, L. Chen and F.Q. Wang 2073

The Analysis on Energy Saving Reconstruction of a Grade III-A General Hospital in Wuhan
Y.Y. Li, Z. Zhang, H.C. Li and C.Z. Zhang 2077

Optimal Model for HVAC Based on System Energy Input Ratio
M. Qing and W. Hao 2082

Simulation Study on the Radiant Tube Transferring Characteristics for the Gas-Infrared Heated System
D.Y. Zhang, W.D. Zhuang and K.Q. Gong 2086

The Effect of Ventilation Mixed Coefficient on Main Filter Efficiency
Y.S. Fan, W. Xie, J.T. Li, L.Y. Li and H.X. Shi 2090

Lanzhou City Sewage Heat Utilization Measurement Analysis
J. Zhang and M.L. Wang 2095

Research on the Simulation of Auxiliary Boiler System on Ships
X.G. Song, N. Zhang and Q. Ma 2099

Simulation Based on CFD to Temperature and Flow Fields of Vertical Air Conditioner Operation

Research on Energy-Saving of the Pebble Thermoregulation Greenhouse
Y.L. Shi, M.D. Chen and F. Wang 2112
<table>
<thead>
<tr>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Study on Temperature Distribution Regularity of Pebble Thermoregulation Greenhouse</td>
<td>2116</td>
</tr>
<tr>
<td>The Influence of Heat and Moisture Transfer in Soil on the Performance of the Ground Heat Exchanger</td>
<td>2120</td>
</tr>
<tr>
<td>Comparing of Temperature Variation with Different Types Greenhouse</td>
<td>2128</td>
</tr>
<tr>
<td>The Application of Catalytic Combustion in Natural Gas Power Generation</td>
<td>2132</td>
</tr>
<tr>
<td>Characteristics of Gas Transport within Uniaxial Compression of Granite Sample</td>
<td>2136</td>
</tr>
<tr>
<td>The Research of Building Air Permeability Based on Building Structural Tightness</td>
<td>2142</td>
</tr>
<tr>
<td>Installation Design and Energy Conservation Analysis of Floor Radiant Cooling/Heating System with Solar Energy</td>
<td>2146</td>
</tr>
<tr>
<td>Test and Analysis on Thermal Environment of Commercial Kitchen in China</td>
<td>2154</td>
</tr>
<tr>
<td>Application of Finite Element Method of Composite Wall Insulation System</td>
<td>2158</td>
</tr>
<tr>
<td>Numerical Simulation about the Effect Rules of Particles Concentration on Erosion of the Centrifugal Fan</td>
<td>2162</td>
</tr>
<tr>
<td>Test on Characteristics of the High-Pressure Secondary Rotary Water Gas Jet Ventilation</td>
<td>2167</td>
</tr>
<tr>
<td>The Heat Transfer Model of V Shaped Solar Flat-Plate Air Collector</td>
<td>2171</td>
</tr>
<tr>
<td>Numerical Simulation on V Shaped Solar Flat-Plate Air Collector</td>
<td>2175</td>
</tr>
<tr>
<td>Physical-Rule Based Adaptive Neuro-Fuzzy Inferential Sensor vs. GA-BP Based Prediction Model in Indoor Temperature Predicting</td>
<td>2179</td>
</tr>
<tr>
<td>Improvement of Proximal Support Vector Machine and its Application to Enhance Antifreeze Heat Transfer Capability in Ground Source Heat Pump System</td>
<td>2186</td>
</tr>
<tr>
<td>Numerical Simulation of Natural Ventilation in Typical Residential Layout</td>
<td>2192</td>
</tr>
<tr>
<td>A New Type Thermal Insulation Fireproofing Wallboard</td>
<td>2197</td>
</tr>
<tr>
<td>The Coupled Heat Conduction &amp; Advection Model for Ground Heat Exchanger and its Application for Utilizable Resource Amount Calculation in Soil</td>
<td>2201</td>
</tr>
</tbody>
</table>

**Chapter 12: Natural and Technogenic Disasters Prevention and Mitigation**

<table>
<thead>
<tr>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Numerical Investigation of Fire Dynamic Behavior for a Commercial Building Basement</td>
<td>2213</td>
</tr>
<tr>
<td>Experiment of the Mechanical Performance of Reinforced Ceramsite Lightweight Aggregate Concrete Beams after Fire</td>
<td>2219</td>
</tr>
<tr>
<td>Gas Control in Special Soft Coal with Lower Permeability in Liangbei Coal Mine</td>
<td>2223</td>
</tr>
<tr>
<td>The Experimental Investigation of GBE-050 Safety Netting System</td>
<td>2228</td>
</tr>
<tr>
<td>Advanced Alert and Warning Systems</td>
<td>2232</td>
</tr>
</tbody>
</table>
Crack Detecting and Localizing Using Distributed Optical Fiber Sensing
F. Lu, Z.F. Chen and Y.S. Guan

A Study on the Occurrence Law of Coal Seam Gas in Shanxi
G.W. Xue, H.F. Liu and J.L. Guo

Full-Scale Experimental and Numerical Simulation of Fire in a High-Rise Residential Building
J.T. Yang, Y. Yang and J. Liang

Experimental Research of Three-Phase Foam Fire-Fighting Technology in 7312-2 Caving Face Prevention Goal of a Coal Mine
L. Jian, M.M. Liu and Z.H. Xie

Natural Dam Break Forecasting by Use of DamBrk Model
C. Dang, N.N. Chu and Y. Ding

Research on the Sensitivity of Rock Slope Stability to the Effect Factors under Blasting Disturbance
P. Chen, M. Chen, J. Kong and Y. Liu

On Analysis Economic Loss Appraisal Method for Geological Disasters
S.G. Li, Q.L. Yi and J.J. Wu

Research on Disaster Prevention Technology of Huizhou Traditional Architecture
Q. Sun and S.T. Wang

Horizontal Pillar Stability Evaluation and Instability Risk Prediction of Jinchuan No.2 Mine Area
Z.H. Liu and Q. Gao

Discussions on Zonal Disintegration around Tunnel in Deep Rock Mass
P. Jia, T.H. Yang and C.M. Zhang

The Application of BP Neural Network in the Research of the Landslide Stability
P.L. Li, W.P. Tian and J.C. Li

Finite Element Analysis of Fire Behavior of Steel Girders in Bridges
Y.J. Liu, G.Y. Wang and Y.S. Song

Study on Social Risk Evaluation Index System for Tailings Pond Dam-Break Based on the Vulnerability Theory
G.D. Mei and Z.Z. Wu

Study on Quantity Calculation and Influencing Simulation of Debris Flow Based on Three-Dimensional Remote Sensing System
Y.L. Yin, B. Xu, M.W. Xie and X.Y. Liu

Characteristics and Mechanics Analysis of Debris Flow Disaster in Xinjiang Arid Area
L.Q. Lv, N.S. Chen, Y. Lu, Q. Huang, J. Li and Y.H. Zhu

Experiment Study on the Relationship between the Height of Capping Layer and the Porosity of Broken Rocks
C.F. Du and B. Li

Chapter 13: Surveying Engineering, Cartography and Geographic Information System

3D Modeling of Building Based on CSG and SketchUp
Y.B. Wang, M.X. Zheng and X.J. Li

An Implementation of 3D Landslide Geological Modeling and Visualization
T.Y. Jiang, L.L. Cui and J.H. Li

Study on Highway Intelligent Travel Service Improvement Using Location-Based Service
Z.N. Wang

Chapter 13: Surveying Engineering, Cartography and Geographic Information System

A 3D Surface Data Model for Fast Visualization of 3DCM
Q.G. Wang

Three-Dimensional Slope Stability Analysis Methods Based on GIS Technology
X.D. Pan, L.H. Yang, S.Y. Zhang, W. Pu and M. Sun
Filtering LiDAR Data Using Binary Quadric Trend Surface and Morphological Approaches
F. Li, X.M. Cui, L. Zhang, S.W. Shan and K.L. Song

ArcGIS-Based the Dam of Three-Dimensional Modeling Technology
T. Huang

Application of GPS-RTK Technology in the Measurement of Discontinuity Traces
Y.S. Zhang, R.Y. Li and F. Wen

Establishment of Virtual Campus Based on ArcGIS
C.L. Sa, G.X. Liu and M.L. Wang

Design on Information Management System of Buildings Based on WebGIS
F.X. Ouyang and X.C. Du

The Service of Digital Measurable Images in Smart Jiuzhaigou
Y. Bai, C. Xu and Z.F. Shao

A Map Matching Algorithm Based on Curvature and Slope
W.Y. Wu and C.L. Kang

Research on City 3D Modeling and Application Based on Skyline
J. Cui, D.L. Ma and F. Cai

Three Dimensional Modeling of Buildings Using Three Dimensional Laser Scanning Data
D.L. Ma, J. Cui and F. Cai

Application of Fuzzy Least Squares Support Vector Machines in Landslide Deformation Prediction
W. Chen, X. Xiao and J. Zhang

Analysis of Landslide Surface Deformation Using Geographically Weighted Regression
H.F. Huang, W. Yi, Q.L. Yi and G.D. Zhang

A Summary of the Scientific Data and its Quality Evaluation
C.L. Sun and R.P. Wang

Evacuation Simulation Model for Large Hotel Based on GIS
F. Cai, J. Cui, D.L. Ma and J. Li

A Semi-Automatic Algorithm on Extracting Road Networks from Airborne LiDAR Data
F. Li, X.M. Cui, D.B. Yuan, K.L. Hu and W.Y. Xu

Chapter 14: Multi-Field Coupling Theory and its Applications

The Analysis Model of Coupling Heat Flux in Heavy Oil Reservoir and its Application

Analysis of the Instantaneous Local Thermal Equilibrium Assumption for Heat Exchange between Rock Matrix and Fracture Water
W. Lu and Y.Y. Xiang

Study on Heating Zone and Producing Zone of Cyclic Steam Stimulation with Horizontal Well in Heavy Oil Reservoir
S.J. Huang, P. Hu and Q. Li

A Method to Determine the Optimal Water Injection Intensity Based on Oil Production Rate and Water Cut
J.C. Zhang, Y. Jia and X.N. Cui

Deformation Module Dynamic Inversion of Xietan Sewage Treatment Plant Slope when Exposed to Reservoir Water Level Fluctuation Based on Fluid-Solid Coupling Theory
X.L. Wang, Z.H. Zhang, Q.C. Sun and S.J. Li

Asphaltene Deposition Induced by Carbon Oxide and its Influence on Displacement Efficiency
F.L. Zhao, J.R. Hou and S.J. Huang

Block Element Method for Seepage/Stress Coupling in Fractured Rock Foundation of Gravity Dam
D.S. Yin and W.X. Qing

Mechanical Simulation Experiment of Coiled Tubing in Wells
F. Guan, W.G. Ma and X.Z. Yi

Research of Short-Leg Shear Wall Structure System Function in Multiple Coupled Field
K. Dai
Experimental Study of Improving the CO$_2$ Flooding Development Effect in Ultra-Low Permeability Reservoir
L. Zhang, F.L. Zhao and J.R. Hou

Study on Variation Regular Pattern of Development Indexes in Beierdong Block after Layer Recombination
G.X. Qi, H.X. Zhang, M. Long, J. Qin and J.C. Zhang

A Capillary Bundle Model Based on Aperture’s Exponential Distribution and its Application in Porous Media’s Mono Direct Percolation
X.D. Ju, W.J. Feng, Y. Zhang and Z.S. Zou

The Coupling Model of Wellbore Conduit Flow, Throttled Flow and Formation Seepage in Water Injection Wells
B.J. Liu, H.X. Shi and Y.S. Cai

Oil-Water Two Phase Flow Model Considering Threshold Pressure Gradient
Y.K. Liu, S. Liang, X. Wan and Y. Xuan

Discussion on the Disappearance of Transition Flow of Fractured Gas Reservoir with Pressure Transient Analysis
Y.H. Su and X.H. Liu

Research on the Discontinuous Deformation Analysis for Hydro-Mechanical Coupling Model of the Fractured Rock Masses
X.S. Liu

Numerical Analysis of Deformation and Stability of Rock Slope under Rainfall Condition
B.H. Zhao and S.P. Zhang

The Characteristics of Seepage Field and Numerical Analysis on the Stability of Reservoir Landslide
X.S. Tang, Y.R. Zheng and Y.F. Wang

The Salinization Problem of the Deep Groundwater Based on Multivariable Statistical Methods
A.H. Wei, F.S. Ma, D.F. Yan and Y. Feng

Modal Analysis of Multi-Span Pipes Conveying Fluid Based on Three Different FSI Methods
T. Zhang, H.H. Ding, Y. Su and H. Chen

Mesh Moving Scheme Based on Solving the Laplace Equation with Jacobian Stiffening Technique
H.K. Wang and G.L. Yu

Determination of Forchheimer Term in Porous Media Consisting of Obstacles of Different Sizes
R.X. Liu, A. Nakayama and X.L. Haung

The Research of Flood Pattern Completeness in the Thin and Poor Oil Layers of South West II Area
X.H. Wu, K.P. Song, C. Dong, J.C. Zhang and J.F. Deng

A Stochastic Finite Element Heterogeneous Multiscale Method for Seepage Field in Heterogeneous Ground
Y.H. Xia

Research on Coupling of Seepage and Stress Fields with Variable Modulus of Elasticity
X.S. Sun, J.L. Li, S. Zhou and J.L. Bai

Study on Seepage Properties of Zheng-Gang Large Landslide under Rainfall Condition
Y. Zhang, B. Lu and H.K. Sun

Stability Analysis of Deep Roadway Based on Coupled Thermo-Hydro-Mechanical Behaviors
Q.F. Guo, F.H. Ren and Z.C. Zhang

Research on Seepage Field of Underground Petroleum Storage Caverns in Fractured Rock Mass
Y.P. Zhang, S. Yu and W.S. Zhu

Treatment of Well Point during Numerical Analysis about Water Pumping
H. Yuan and C. Yan

Analysis on Coupling of Temperature Field and Stress Field for Tunnel Surrounding Rock in Cold Region
H.M. Zhang, Y. Liang, C.G. Chen and H.B. Cao
Numerical Research on the Heat Transfer Properties of Pulsating Flow around the Vibrating Tube

Sectional Optimization Study on Perforation Parameters of Horizontal Wells in DaQing Oilfield
H.J. Zhang, Z.Z. Yang, P.J. Guan, G.P. Xu, L. Fu, H.Y. Li and L. Xu 2586

Research on Factors and Model of Water Production of Bottom Water Reservoir

Discuss on down-Hole Intelligent Intermittent Pumping Technology in Low Liquid Production Well

Experimental Study on Fluid-Solid Coupling Seepage Flow in Putaohua Reservoir
Y. Zhao, K.P. Song and Y.F. Liu 2602

Fracture Zonation for Overlying Strata in Underground Mining of Shallow Coal Seam
G.W. Fan, D.S. Zhang and L. Zhou 2607

Determining Informational Entropy of KARST Spring Hydrology Based on Wavelet Transform
Y. Wang, L.C. Shu, C.P. Lu, R.R. Zhang and H. Ping 2612

The Research of Layer System Adjustment Methods in DQY103 Block of the Low Permeability Reservoirs
T.J. Yang, C.L. Liu, C.Q. Fu, J.T. Zhang and H.J. Yin 2616

The Sediment Group Evaluation Index System of Extra High Water-Cut Stage in Waterflooding Oilfield Reservoir
L.J. Wang and Q.G. Duan 2620

Simulation for Gas-Membrane Interaction of Folded Membrane Tubes during Inflation
J.Z. Wei, R.Q. Ma, H.F. Tan and X.W. Du 2627

Numerical Simulation Study on Diamond-Shape Inverted Nine-Spot Well Pattern
S.P. Wang, R.Z. Yu and Y.A. Bian 2632

Features of Coal Pore & Fracture in Chuandong and their Relationship with Extra-Low Permeability
F. Mao, J.X. Tang, J.J. Peng and Z.Q. Li 2636

The Study of Combined Mining Technology at Thin Coal Seam with Hard Limestone Floor
Y.S. Shen and L.J. Zeng 2640

The Research of Liquid Producing Capacity Variation Law in Water Controlled Reservoir
C. Fu and B. Huang 2644

Chapter 15: Applied and Computational Mechanics

Stability Analyses of a Moving Rectangular Plate by the Element Free Galerkin Method
Y. Wang and Z.M. Wang 2651

Calculation of the Tension of Coastal Shore-to-Ship Transmission Cableway
Z.D. Tan, Z.F. Du, J. Zhang, C. He and W.G. Wu 2655

Solving the Deflection Equations of Thick Plate under Concentrated Load
D. Zhang 2659

Analysis about Efficiency of Floor Isolation System Consisting of RFPS System and Dish Spring
N. Ge, H.B. Chen and C.Y. Yu 2664

Numerical Study on Mechanical Response of Steel Wire Wound Reinforced Rubber Flexible Pipe under Internal Pressure
F. Gu, H.X. Wang and L. Sun 2668

Mechanical Analysis and Stability Design of Extrusion Forming Machine of Thorn Pile

On the Investigation of Flow around the Square Cylinder Based on Different LES Models
Z. Liu 2676

A Numerical Study on Shock Wave Characteristics for the Underwater Explosion
W. Ju, Y. Liu and J. Ding 2680

The Boundary Negative Slippage of Fluid Flowing in Hydrophilic Micro-Channels
F.Q. Song and L. Yu 2684
### Study on Collision Damage Behavior of Ship
Y.S. Lü and Z.Y. Mei

### Bifurcation Analysis in a Lotka-Volterra Model with Delay
C.J. Xu

### Calculation of Interface Slips in SRC Members by Energy Method
X.H. Hu and P.H. Yang

### Bifurcation Phenomena of Secondary Flows in Curved Duct of Square Cross-Section
L. Xue

### Semi Analytical Solutions of Elastic-Plastic Contact between Two Surfaces
H.L. Tian

### A Hybrid Finite Volume Meshless Method and its Application to Elasto-Plastic Problems
J.Q. Zhang

### The Analysis and Inspection Technology of Product Assembly Properties for Virtual Assembly Based on Assembly Force
X.X. Chen, Z. Wang and G.H. Dai

### Plastic Deformation Theory Application in Finite Element Analysis
W.S. Lin

### A Comparative Study of the Methods for Calculation of Journal Bearing Elastohydrodynamic Lubrication
J.Y. Zhang, S.K. Han, S.F. Zhang and Y.W. Zhang

### Extension of Material Derivative Concept in Fluid Mechanics
F.X. Liu

### Velocity Distribution of Viscoelastic Fluid Axial Flowing in Eccentric Annulus Based on the Upper-Convected Maxwell Model
X.S. Han, F.M. Li and B.J. Liu

### Research Review on Bearing Capacity Behavior of Pile Foundation under Lateral Load
J.W. Zhang, H. Yuan and S.H. Zhang

### Causes Analysis of Eccentric Wear of Sucker Rod in Produced Fluid with Polymer
B.J. Liu, C.X. Fan and H. Du

### The Finite Element Method for Mechanics Analysis of Joints in pin Coupling of Beam Structures
Y.J. Xia

### Nonlinear Buckling Behavior of Cylindrical Shells of Uniform Thickness under Wind Load
L. Chen, Y.L. Peng, L. Wan and H.B. Li

### Dynamic Response of a Poroelastic Half-Space with Semi-Permeable Surface Subjected to Time-Harmonic Vertical Load
X. Luo, X.W. Zeng and L.Q. Tang

### Analysis of a New Adjustable Mixer Base on Large Eddy Simulation
X. Nie, L.X. Ding, B. Guo, L.B. Chen and H.C. Pan

## Chapter 16: Noise and Vibration Control

### Study on the Effect of Resistance Sliding Key Chamber Blasting Construction of a Hydropower Station on Adjacent Buildings
H.F. Deng, Q. Luo, X.F. Yuan and M. Zhu

### Oscillatory Behavior in a System of Coupled Van Der Pol-Duffing Oscillators with Delays
Y.H. Lin and C.H. Feng

### Experimental Investigation on Damping Effect of NOPD Slender Cables
L. Zhao, D. Shen and T.J. Ma

### Evaluation of a Rail-Damper for the Vibration Reduction and Noise Suppress for Railway
Q. Xue, F.Y. Sun and J.L. Wu

### Analysis on Impact Factor Spectrum for a Continuous Bridge under Normal Traffic Flow
Z.Q. Fei and T. Wang

### Reliability Analysis of Turbine Generator Units Spindle System with Vibration Fault Tree
Z.J. Li, Y. Liu, H. Long and Y.L. Zhang

### Dynamic Response of an Elastic-Supported Bridge Beam Subjected to Velocity-Varied Moving Loads
F.L. Mei and G.L. Li
Analysis and Comparison Research of Airport Noise Metrics
Y.H. Wang, F. Xia and T. Xu

Study on Sub-Span Oscillation of Bundle Conductor for Transmission Line
D.L. Zhu and C. Ma

The Practical-Analytical Solutions of the Wind Turbine Tower System’s Natural Vibration Properties
Q. Cao, C.Y. Fan and Q. Wang

Prediction on Sound Insulation to a Single-Leaf Wall
X.F. Huang, Z.X. Yang and Y. Yang

Prediction on the Sound Insulation of a Double-Leaf Lightweight Panels
X.F. Huang, Y. Yang and Z.X. Yang

The Structural Refinement and Vibration Analysis of Apparatus Based on Inertia
Benchmark for Measuring Road Roughness
J.L. Xue, H.Y. Wang and B.S. Chi

Experimental Research on the Heat Transfer Characteristics of Electrorheological Fluid Shock Absorber
R. Wang, Y.C. Wang, C.Q. Feng and F. Zhou

Chapter 17: Computer Applications in Industry and Civil Engineering

Research on Influence Factors of Strata Classification Based on Fuzzy Cluster Analysis and Fuzzy Pattern Recognition
S.Y. Liu and L.N. Chen

Research of Ship-Bridge Collision early Warning on the Basis of Fuzzy Neural Networks
X.H. Yang and X. Zhou

Analyzing the Influence of Road Reflection Crack on Pavement Structure under Transportation Loads through ANSYS
D.D. Li and S.S. Zhou

Design and Implementation of 2-3-Dimension Transformation for Last with Rhino Developer Platform
J.C. Jin and C. Wang

Research on Visualization of 3D Modeling of Hydropower Project Based on NURBS
P. Yue, Z.J. Miao and D.H. Zhong

Modal Analysis of a Simple Supported Beam Steel Bridge Based on ANSYS
D.L. Wang, T. Li and C.Y. Wang

Prediction of Mine Accidents Based on Fractal Theory
Y.F. Chen and Q.X. Sun

Wavelet Estimation Method for Short-Term Prediction of Deep Pit Settlement
J. Guo, N.H. Lin and Q.M. Yang

A Parallel Algorithm for Stiffness Matrix Decomposition Using Threadpool Method
J.T. Chen, M. Xiao and H.B. Liu

Information Flow Molding Technology of GBIM
M.Y. Yang, S.Y. Chen and J.Y. Xu

Research on 3D Dredged Soil Visualization Analysis of Qinhuangdao Harbor Project

Research on Constructing 3D Geological Model of the Construction Layers in Daxing New City Area of Beijing
X. Huang, G. Chen and Z.L. Li

Study on the Method of Generating Digital Elevation Topographic Map in the MATLAB
M. Wang, Z.W. Yu, C.M. Guo and C.H. Sun

Numerical Simulation Analysis of Soil Nailing Wall Based on FLAC during the Excavation of the Foundation Pit
C.W. Chen

Simulation Research of PV Module in Islanded Operation State
W.J. Li, X.H. Wang, S.X. Ma and J. Wang

Initial Prestress Optimization of Tensegrity Structures Based on Fish-Swarm Algorithm
C.Q. Liu, R. Liang and W.X. Shi
Web-Based 3D Visualization of Dam Safety Monitoring
B.P. Wu, B. Cui and D.H. Zhong

Study and Application of Slope Displacement Time Series Forecast Based on CO-WLSSVM
F. Xu and K. Wang

Application Study of Landscape Design Based on Visual Authenticity and Intellectual Authenticity
C. Liu and X.S. Yang

The Finite Element Analysis of Truss Beam Structure Based on ANSYS
L. Xia

The Study and Application of Slope Displacement Time Series Forecast Based on CO-WLSSVM
B. Cui and D.H. Zhong

Application Study of Landscape Design Based on Visual Authenticity and Intellectual Authenticity
C. Liu and X.S. Yang

Chapter 18: Engineering Management

Risk Study on Underground Construction Using Reliability Theory
M. Li and J.L. Wang

Influence Analysis to Beneficial Period and Pricing of Hydraulic Project Based on Risk Allocation
B. Yan and Q.H. Zhao

Analytical Analyses of a Failure Department Project in Northern Ireland
Y. Zhuang, X.Y. Cui and H.L. Liu

Application of Fuzzy Comprehensive Evaluation Method Considering Risk Factors in Project Schedule Management
Q.L. Yi, J.J. Wu and T.F. Dai

Research on the Commercial Environment of China’s High-Tech Districts: The Integration of City Function and Innovation Function
C.L. Wang, X. Wang and M.M. Ma

Research on Management Information System for Construction Consultant in Hydropower Project Based on Process Control
R. Wang, D.H. Zhong and J.P. Zhou

Economic Applicability Evaluation of the Method of Replacement with Gobi Desert in Tibetan Areas
J. Liu and J. Pan

Energy Efficient Building Cost Control Research Based on Whole Life Cycle
Y.P. Wang, W.G. Qiao and H. Fang

Management Mode of Super Large Scale Project - Case as Chongqing Public Rental Housing

A Quality Cost Evaluation Model of Construction Enterprises Based on Unascertained Method
C.Y. Gao, J.G. Niu and X.Q. Xing

Study on the Selection of Subcontractors Based on Fuzzy Comprehensive Evaluation
Y. Feng and K. Bin

Quality Cost Forecast of the Construction Enterprise Based on SVR Model
J.G. Niu, C.Y. Gao and X.Q. Xing

Cross-Sea Bridge Construction Contract Management Research
L.L. Yang, H.S. Qiu and C. Wang

Application of Oppression Construction Method in Soft Soil of Deep Foundation Pit Engineering Management

Research on the Construction Mechanisms for Intelligent Transportation Systems in Foreign Countries
Construction of the Influence Relationship Model between the Construction Project Safety System and the City Public Safety System and Analysis of the Influence Types
X.L. Yan 3029

AHP-Based Research on the Selection of Construction Project Subcontractor
M. Cheng, G.X. Ma and J.K. Sun 3035

The Research of Enterprise Work Safety early Warning Index Based on Risk Management
Q. Hou and Z.Z. Wu 3040

Study on Scenario Analysis Method Based Safety Pre-Warming of Large Construction Engineering

Business Intelligence in Construction: A Review
H. Shi, C. Peng and M.Z. Xu 3049

Research on the Theory and Application of River Course Regulation Projects’ Post-Economic Evaluation
X.Y. Li, M. Chu and F. Ge 3058

Quantitative Relationship Model and Case Study on Technological Progress and Industrial Structural Optimization of China's Construction Industry

Alternative Selection of Expressway in the National Nature Reserve
J.P. Gao, X.G. Zhang, Z. Zhang and G.X. Wu 3066

Y.W. Zhang, S.C. Li, X.G. Chen and W. Xu 3072

Operation Performance Comprehensive Evaluation of Execution Control System in Freeway Construction Project
Z.Y. Tu, N. Qu, L.X. Li and Y. Lu 3080