Table of Contents

Conference Organization and Committees

Chapter 1: Hydrology and Water Resources

Spatiotemporal Variability of Soil Moisture under Different Agroforestry Landscape in Jinghe River	
Q.R. Wang and J. Gao	3
Study on Flow and Sediment Diversion at Four Inlets of Dongting Lake and Tendency and Influences of Erosion-Deposition Variation M.H. Deng, K.B. Liu and Z.Y. Luan	10
On the Suspended Sediment Concentration Profile C. Cheng, Z.Y. Song, Y.G. Wang and J.S. Zhang	20
Multi-Threshold Regression Reference Evapotranspiration Prediction Model Study Based on PSO Algorithm D.C. Chi, T.T. Chen, Q. Liang and W. Chen	25
A New Method to Calculate Mixed-Layer Thickness Based on Sand Wave Movement H. Ge, L.L. Zhu and X.B. Zhang	33
Comprehensive Research and Outlook of Loose Solid Materials on the Gully System under Hydrodynamic Conditions	40
S. Yang, G.Q. Ou, X.J. Ji and J. Wang Calculation of Design Flood for Small Watershed of Miaoyuanxi Stream J.P. Liu, J.Z. Zhang and W.B. Yuan	40
Effect of Grass Coverage on the Sediment Concentration in Overland Flow in the Hillslope-Gully Side Erosion System	
M. Li, W.Y. Yao, E. Yang, J.N. Chen and W.F. Ding Study on the Tidal Current and Suspended Sediment Transport in Taizhou Bay J. He, X.S. Zhao and Y.F. Zhu	50 55
Practice of Floodwater Resources Utilization for the Three Gorges Reservoir Y.Y. Xie, J. Zheng and Y.Y. Huang	59
The Rainfall Measurement Using Dual-Polarization Doppler Weather Radar M.B. Hu, H.B. He, J.Z. Zhao and L. Zhao	63
Evaluation of Water Environment Carrying Capacity in Guanzhong Area Y.X. Chen and J.Y. Gao	68
Numerical Simulation of the Effects of Channel Regulation Engineering Works in the Tianxingzhou Reach of the Middle Yangtze River J.Q. Han, Z.H. Sun and L.L. Zhu	72
Analysis of Sediment Distribution in a Typical Irrigation District Along the Lower Yellow River	
L. Ma and L. Sui Comparative Analysis of Water Reduction Benefits between Terrace and Slope Land in	78
Southern Area of Ningxia: Taking Haoshuichuan Watershed as an Example J. Li, W.J. Zhang and J.P. Zhang Optimal Operation of Underground Reservoir in Tailan River Basin	83
Y.D. Jing, L.C. Shu, M.J. Deng, E.K. Appiah-Adjei, S.L. Zhang, X.H. Wang and P. He Grid Based Change Trend of Precipitation and its Regional Difference in China over the	88
Past 40 Years S.B. Liao and H.W. Zhao	99
Research on Wash Wave in Shallow Water Caused by Ship Moving at High Speed H. Deng, Z.H. Zhang, T. Miao and J.N. Gu	104
Study on the Clay Mechanical Characteristics of "Ripping Up the Bottom" in the Yellow River W.S. Dong, X.F. Jiang, X.F. He and Y.Y. Zai	108

An Integrated Model for Water Resources Allocation in the River Basin Based on Different Allocation Principles	
C. Xiao, D.G. Shao and F.S. Yang	113
Preliminary Study of Regulation Schemes for Navigation Channel in Dinh An Estuary, Vietnam	
V.T. Nguyen and J.H. Zheng	117
Analysis of Fairness of Water Use Based on Geordie Coefficient in China H.X. Chen and X.Y. Xu	123
Prediction of the Maximum Riverbed Erosion Depth nearby the River-Crossing Tunnel in Nanchang Reach of Ganjiang River	
L.M. Tang, Q.S. Liu, G.P. Liu, H.W. Tang and Y. Xiao	130
Impact of Climate Change on Kaoping River Water Quality C.P. Yang, Y.T. Yu and C.M. Kao	137
Effect of Shrub Planting on Runoff and Sediment under Simulated Rainfall P.Q. Xiao, W.Y. Yao and C.G. Wang	141
Study of Critical Values of Sediment Concentration for the Change from Deposition to Erosion in Yangtze Delta Y.P. Yang, Y.T. Li, Y.Y. Fan and J.Q. Han	145
Analysis on Effect of Spatial Distribution of Rainfall on Runoff Modeling in Xixi Watershed	143
of Jinjiang Basin	1.5.1
Y. Gao, H.M. Zhang and G.W. Xu Locating of Salt and Fresh Water Interface in Coastal Zones Using 2D Resistivity Imageries	151
N.D. Subasinghe and P. Jinadasa	155
Experimental Study on Changes of Sloping Sandy Bed Profile under Breaking Waves Y. Pan, Y.Z. Cheng, Q.F. Li and W.C. Wang	163
Study on Relationship between Sediment Transport and Excess Pore Water Pressure under Regular Breaking Wave Action	
Q.F. Li, Y.Z. Cheng, Y. Pan and W.C. Wang	169
One-Dimensional Soil Moisture Simulation Using Ensemble Kalman Filter X.L. Fu, Z.B. Yu, Y. Li, H.S. Lv, D. Liu, J.W. Chen, L. Xiang and C. Chen	177
Generalized Model Study on Tidal Wave Transformation in Estuaries where Sluices are Constructed	
X.Z. Zhang, X.M. Wang, X.P. Dou, X.D. Zhao and M.C. Zhu	181
The Effect of Land Use and Land Cover Change on the Stream Structure: Case Study in the Qinhuai River Basin, China L.F. Han, Y.P. Xu and Y. Shi	186
Study on Wave Spectra in South Coastal Waters of Jiangsu W.B. Feng, B. Yang, H.J. Cao and X.Y. Ni	193
A Numerical Simulations and Optimizations of the Flow Field in TengZhou Quanshang Constructed Wetland	
W.G. Xu, H.Y. Zhang, Z.Y. Wang and W.P. Huang	201
Analysis on Sediment Environment and Waterway Siltation Characteristics of Panjin Port X.X. Feng, M. Zhang and Z. Liu	205
Identifying the Dominant Discharge Based on Coefficient Frequency of Discharge and Sediment in the Lower Yellow River P.T. Wang, S.M. Tian and D.P. Sun	211
Numerical Analysis of the Influence of Saltwater Intrusion on Qingcaosha Reservoir J. Gu, J.Z. Yang, W. Chen, X. Qin, D.Q. Ma and X.L. Wang	216
Analysis on Influences of Nanshatou Passage on the Deepwater Navigation Channel of the Changjiang Estuary	
J. Gu, W. Chen, X. Qin, D.Q. Ma, X.L. Wang and J.Z. Yang Study on the Formula of Settling Valority of Sediment Porticle Cloud in the Water	221
Study on the Formula of Settling Velocity of Sediment Particle Cloud in the Water J. Gu, D.Q. Ma, W. Chen, X. Qin and X.L. Wang	225
Analysis on the Process of Flow-Sediment in Jianli Reach of Yangtze River before and after the Construction of Three Gorges Project	
X.F. Liu, H.Q. Huang and C.Y. Deng	230
Application of Fractal Theory on River Bed Form Y.J. Zhou, F. Li, L. Chen, Z.W. Jin and J. Wang	236

Calculation of Earth-Rock Dam Seepage Based on Boundary Element Method with the Infinitely Deep Permeable Foundation L.L. Chen, L. Ma and F. Liu	241
Analysis for Influence upon Local Climate Factors of Reservoir Area of Hydropower Station after Water Storage W.Y. Wang, W. Liu and X.J. Ma	245
Research on the Influence in Complex River Network Area for Waterway Regulation X.L. Chai, L.M. Zhang, Q.H. Yu, S. He and W. Yao	253
Discussion on Moisture Migration and Law of Frost Heave of Seasonal Frozen Soil in Hetao Irrigation Area, Inner Mongolia Y.H. Wang and S. Li	260
Study on Hillslope Hydrodynamics Process and Catchment Runoff Producing Pattern in Humid Area F.H. Gao, Z.B. Yu, X. Chen and H.W. Liu	264
Effects of Rainfall Intensity and Amount on the Transport of Total Nitrogen and Phosphorus in a Small Agricultural Watershed	
C. Chen, Z.B. Yu, L. Xiang, J.J. He and X.L. Fu Analysis for the Cause of Sharp Cutoff of Water and Sediment in He-Long Reach the Yellow River Middle Area	268
L.L. Kang, K. Liu, F.F. Dong, S.L. Zhang and J.J. Liu Numerical Modeling of Plane Two-Dimensional Flow-Sediment Movement in Inland and Heavy Sediment-Carrying Rivers	272
Z.W. Mu and T. Zhao Study on Flow Pattern and Characteristics of Sediment Deposition in Tidal Reach of Yangtze River	278
Z.Y. Chen, X.N. Zhang, X.Q. Peng and H. Liu Application and Development of Stochastic Hydrological Models in China	283
L.X. Li, S.T. Zhang and X.Z. Wang Discussion on the Development Potential and Supplement Measures of the Groundwater	290
Resources of Jiaodong Peninsula X.R. Li, Y.Q. Qiao and D.C. Zhang Experimental Investigation of the Effect of Flow Turbulence on the Adsorption of	294
Phosphorus onto Sediment Particles B. Xia, Q.H. Zhang, J.S. Yang and C.B. Jiang	299
Pre-Treatment of Karst Groundwater Recharge with Roofwater System W.P. Wang, Y.Q. Zhou and H.Y. Deng	307
Analysis of Precipitation Concentration in Gaoyou Irrigation District: Implications for Increasing Effective Rainfall H.L. Fu, Y.F. Luo, W.G. Wang, Y.L. Jiang and Y.J. Xiong	311
Two-Dimensional Numerical Model for Scalar Transport by Finite Volume Method on Unstructured Grid	216
Z.L. Wang and Y.F. Geng Selection of Groundwater Control Scheme for Deep Excavation in Alluvial Soil along the Yellow River	316
H. Yuan, Z.L. Zhao and Y.H. Li Influences of Wind Field on Flow Regime and Algae Blooming in Dianshan Lake	323
W.H. Jia and S.Y. Li 2-D CFD Model for Free Surface River Flow with Tilt Rigid Leave of Submerged Vegetation	327
Y.H. Li and L.Q. Xie Laboratory Investigation on Tsunami Wave Runup	332
J. Chen, C.B. Jiang, H.Y. Liu and Z.Y. Wu Uncertainty Improvement in a Simulation of Channel Evolution	336
K.I. Son, T.J. Hwang, M.H. Hwang and Y.H. Yoon High-Resolution Integrated Detection of Underwater Topography and Geomorphology Based on Multibeam Interferometric Echo Sounder	341
H.S. Li, C. Xu and T. Zhou	345

Study on Dynamic Equilibrium of Sediment Transport by Qingshuigou Course of the Yellow River	
S.B. Yu, K.R. Wang and W.Z. Wang	351
An Analysis on Water-Saving Potential in Central and Northern Part of Ningxia J.P. Zhang and C. Yang	358
Chemistry of Groundwater from Two Aquifers in Liuyi Coal Mine, Northern Anhui Province, China: a Comparative Study L.H. Sun and H.R. Gui	362
Experimental Study of Sand Sediments Effects on Submerged Hydraulic Jump Properties S. Haghighi, M.R. Kavianpour and K. Nasiri	366
Study and Application of Tidal River Flow-Sediment Mathematical Model H. Chen	372
Laboratory Study of Unsaturated Flow in a Single Fracture-Matrix System: A Conceptual Model	
Z. Zhong, Y.J. Hu, X.H. Zhang and G.L. Chen	377
Evaluation on the River Seepage under Groundwater Pumping near Riverside J.W. Chen, K.W. Chen, J.N. Chang, S.Z. Lee and C.H. Lee	383
Study on Characters of Nitrogen Adsorption and Desorption of Sediment in Ganjiang River Q.L. Ouyang, G.Q. Gao, S.S. Liu and X.L. Shi	391
Changes of Snow Characteristics During Snowmelt Period and Analysis of Influential Factors - Taking the Juntanghu Watershed in XinJiang as an Example H. Wang, Z.H. Liu and Q.D. Zhao	395
Estimation of Suitable Groundwater Safe Yield under the Unusually Constraints of Environmental Conditions in Taipei Basin, Taiwan	
C.H. Lee, K.W. Chen, J.N. Chang, W.P. Chen and J.W. Chen Study of Processes in Shaping High Floodland and Deep-Cut Channel in Xiaolangdi	399
Reservoir K.P. Li, S.K. Chen, H.B. Ma and T. Wang	407
Theoretical Investigation into Plunging Point of Density Current in Reservoir T. Li, G.M. Gao, H.B. Ma and T. Wang	413
Study on Water Level Prediction in the Ganjiang Valley Y.H. Cao, X.F. Ye and G.H. Lv	417
Analysis of Water Resources Carrying Capacity in Liao River Basin Y.J. Fu, J.S. He and X.D. Zhang	423
Simulation and Analysis of Ocean Wave in the Northwest Pacific Ocean Z.X. Zhu and K. Zhou	430
Application Study of Least Squares Support Vector Machines in Streamflow Forecast Y. Zhao, Z.C. Dong and Q.H. Li	436
Analysis for Sediment Deposition and Erosion in Key Sections of River Reach in Chongqing City during the Natural Evolution	
X.B. Liu and H.T. Xu	441
A Simple and Effective Prediction Model of Saline Intrusion in the Modaomen Estuary, the Pearl River Delta, China Y.L. Zhu, X.L. Yan and X.Y. Lin	446
Geotextile Recharge Well with Filter Layer Y.T. Li and W.L. Li	453
The Correlation of Dynamic Cone Penetration Blow Count of Wind Carried Sand vs. Surface Wave Velocity in West Bank of Qinghai Lake	133
J.K. Liu, J.H. Fang, Y.F. Hou and J.H. Xiao	457
Experimental Study on Formation Cause of Sink Reach's River Pattern of Alluvial River Flowing into the Lake J. Chen, X.F. Zhang, H. Chen and C.W. Shu	461
Quantificational Method for Analyzing the Formation of Fluid Mud on Muddy Coast L. Tang, W. Zhang, M.X. Xie, Z. Yu and F. Yang	466
Simply Discussion on the Research of the Carrying Capability of Suspended Sediment in Wave-Current Coexistent System	
J.S. Zhang, S.D. Gan and W.Š. Zhang	477

Development and Utilization Status in the Basin of Shiyang River and Water Quality	
Evaluation W. Sun and J.M. Ren	482
Chapter 2: Irrigation and Water Conservancy	
Summary on River Basin Water Resources Allocation Practice and Institutional Arrangements of China Y.Y. Gao, X.Y. Xu and X.L. Yin	489
A Study on the Watershed Chemical Weathering in the Water Source Area of the Central Guizhou Water Control Projects S.L. Jiao, H. Liang and T. Sun	493
Study on Calculation Methods of Agricultural Water Supply Cost in the Plain Irrigation Area of the Yellow River R. Guo and S.L. Cao	498
Optimal Reservoir Operation Based on Improved Particle Swarm Optimization Algorithm J. Tian, J.C. Xie and X.H. Xing	502
Application of Contrary Degree and Identity Degree Optimization Model to Determine Reservoir Normal Storage Water Table W.W. Zhang, X.F. Liu and Z.Z. Zhang	509
The Impact of Irrigation Diverting from Yellow River Water on Regional Water Cycle in Shandong Province	514
S.S. Qu, Z.Z. Zhu, N. Qiu and W.P. Wang Evaluating the Characteristics of Hydraulic Driven Non-Point Source Pollution Loss in Agricultural Watershed	314
L. Xiang, Z.B. Yu, L. Chen, J.J. He, C. Chen and X.L. Fu	518
The Fuzzy Irrigation Control System Based on PC and C8051F Y.T. Wang, H.X. Zhang, J. Yang and L. Liu	525
The Study on Distribution Characteristics of Water Resources in Guanzhong Region of Weihe River X.J. Wu, H.E. Li and Y. Dong	531
Application of Complex Adaptive System Theory to Water Resources Allocation in Dianchi	
Basin Q. Su and S.H. He	536
River System Connectivity Analysis of Wuxi's Central Urban Area Based on Graph Theory L.Y. Wang, Y.P. Xu and M.J. Yu	543
Analysis Threshold Value of Ecological Water Require-Ment for Vegetation Restoration on Northern Grassland H. Rong, D. Shan and J.Y. Guo	549
Study for Modeling and Solving Method of Water Resources Optimizing Allocation under Considering Uncertainties	349
W.S. Dong and H. Wang Economic and Ecological Benefits on the Implementation of Integrated Water Allocation in	554
the Yellow River C.G. Xu, M.H. Zhao and L.Y. He	560
Dynamic Change of Water Storage under Anti-Drought Measures on Red Soil Slope Farmland R.Z. Huang	564
Research on Assessment Index System for Sustainable Utilization of Urban Water Resources	
L. Tang and W.B. Zhang Social Benefits on the Implementation of Integrated Water Allocation in the Yellow River	569
M.H. Zhao, C.G. Xu and L.Y. He	574
Water Stress Effects on Growth, Yield and Water Use Efficiency of Hemarthria Compressa Z.W. Yang, J.Y. Jin and X.Y. Xu	578
Experimental Study on Muddy Water Delivery for Irrigation in Low-Pressure Pipeline System Q.L. Zong, X.Y. Zhang, Z.J. Wang and H. Tang	586

Chapter 3: Water Supply and Drainage Engineering

The Orban Unsteady and Non-Pressure Rain Pipe Flow Routing by the Dynamical-wave Method	
B.Z. Ren, X. Zhang and H.T. Zhou	593
Application of a Hybrid Process Combining Ozone-Coagulation-Microfiltration for Drinking Water Production Y.L. Song, B.Z. Dong, N.Y. Gao, Y.F. Yang and C. Chang	600
Water Changing Trends and Water Quota Management in China's Public Services	
Q. Liu, H.B. Liu and J.X. Fu Analysis of Water Resources Supply and Demand Balance of Rural Land Remediation	605
Project Area in Fuyu County, Jilin Province X.L. Xu, X.F. Liang, X.J. Liang and C.L. Xiao	609
The Structure Analysis of Urban Household Water Q. Liu, P. Zhou, J.X. Fu and W.R. Wang	615
Statistical Analysis of Domestic Web News Reported Burst Events on Municipal Water Distribution System in 2011 L. Huang, S.P. Li, Y.D. Hou, W.W. Zhou and J. Zou	619
Discussion on the Water Supply Engineering Planning of Small Towns in Southern China S.Y. Li, S.B. Xie, Y.H. Zhou, W.L. Wu and Y. Duan	628
Finding Best Locations for Rainwater Drainage Lines Using DTM, GIS, and Greedy Heuristic	
A.I. Hassabo	634
Chapter 3: Water Supply and Drainage Engineering	
The Analysis on Effect of the Terrain to the Culverts Stress by the Finite Element Method Q. Jiang, H.J. Lai and Z.Z. Su	643
Research on Water Ecology of Tunnel Engineering in Arid and Semi-Arid Regions G.Z. Zhang, Q. Wang and F.P. Wu	647
Practice and Study of the Effect of One-Household-One-Meter Conversion on NRW X.L. Lei, L. Li, H.Y. Wang, X.T. Fang and Y.Y. Huang	653
Study on Industrial Water-Saving System - Taking the Ningdong Energy and Chemical Base as an Example J. Liu, C. Yang and J.P. Zhang	658
Pareto Genetic Algorithms for Multi-Objective Design of Water Distribution Systems M. Nicolini	664
Research on Influencing Factors of Drainage Performance in Engineering X.S. Sun, J.L. Li, X.L. Xu, J.R. Li and F. Liu	671
Research on Inverse Transient Leakage Location of Water Supply Network Based on Genetic Algorithm	
J.G. Fei, S. Dong, M. Lv and Z.B. Sheng	679
Quality Monitoring and Property Analysis of Urban Initial Rainwater Y.H. Wang, Y. Wen and L. Liu	684
Experimental Research and Optimal Design of the Drainage System in a Tailing Pond Y. Miao	688
Investigation of Drainage Ditch of the Plain Reservoir X.L. Wen and X.M. Guo	692
Chapter 4: Flood and Drought Management	
Study on Flood Discharge and Countermeasures of ShiQiao Reservoir Spillway X.Q. Wang, C.W. Liu and J.H. Zeng	699
The Capability Analysis of Flood Discharge in Ningmeng of Yellow River X.A. Jing, X.Z. Lin, S.Z. Hou and G.L. Liu	705

Flood Risk Analysis Based on IOSM Y.F. Diao, Q.H. Zhang, J.Y. Chen and G. Wang	710
Multi-Objective Decision Model of Reservoir Flood Control Operation X.H. Xing, J.G. Luo and J.C. Xie	715
Flood Control Impact Assessment for Gas Station Construction Projects W.H. Yang, G.H. Yu and T. Liu	721
Analysis of Inflow Design Flood for Liujiaxia Reservoir under Dynamic Operation of Flood Limited Water Level for Ten-Day Period	/21
J.Q. Li, D. Shen, A.J. Wang and Y.S. Zhang	725
The Evaluation of Drought Degree in Irrigation District Based on Variable Fuzzy Evaluation Method D. Liu and B.D. Wang	731
Study on Characteristics and Risk Indicators of Agricultural Drought in Northwestern Liaoning Province, China	, -
T. Sun, J.E. Fu and F.X. Chai	739
A Study of Manning Coefficient Related With Vegetation Density along the Vegetated Channel W.G. Xu, H.Y. Zhang, Z.Y. Wang and W.P. Huang	744
Study on Causes and Preventive Measures for Flood Damage of Highway Subgrade along	/44
Rivers B.C. Ma, W.P. Tian and J.C. Li	748
Numerical Simulation of Flooding Effects on Estuarial Reach after Pier's Construction	7-10
D.P. Sun, L.D. Zhang, X.L. Zhang and P.T. Wang	752
Collapse Evolvement Analysis of Upstream Tailings Dam in Flood Situation X.F. Jing, W.Z. Zhang, Y.L. Chen and Z.Y. Cai	759
Observed Changes of Drought/Wetness Episodes in the Middle and Lower Reaches of the Yangtze River, China	
Y.W. Zhang and W.G. Wang	765
Experimental Study on Flood Control during Construction for Jinping II Hydropower Station C.J. Zhao, Y.H. Zhou and H.M. Guo	772
Research on Systematic Risk Model of Embankment Dam Overtopping Flood	112
S. Liu, H. Peng, C.Y. Zheng, S.L. Liu and Q.L. Yan	780
Chapter 5: Hydraulic Engineering Construction	
Stability Experiment of Revetment Blocks for Regulation Project of Mulan Creek River X.D. Zhao, X.S. Xu, X.X. Li and X. Chen	789
Experimental Study of Hydrodynamic Effects of Submerged Breakwaters on the Slope S.H. Zhang, C.B. Jiang, J. Chen and H.Y. Liu	796
Numerical Simulation of Expansion Effect of MgO Concrete J.H. Cui, H.J. Xiao and J. Su	801
Hydraulic Structure Design Concept and Practice - Tacheng Reservoir Project in Xinjiang as an Example	
X.H. Huo, Y.J. Chen, J.J. Mu, S.J. Li, J. Liu and H. Zhao	805
Static Analysis of Bonding Steel Technique for Diversion Tunnel on Hualiangting Reservoir S.L. Liu, H. Peng, C.Y. Zheng, Q.L. Yan and S. Liu	810
The Study on Stripping Time of Concrete Lining in Construction of Derivation Tunnel in	815
ASAHAN NO.1 Hydropower Station Project O.L. Yan, H. Peng, S.Y. Mao, C.Y. Zheng, S.L. Liu, and S. Liu	(11.)
Q.L. Yan, H. Peng, S.Y. Mao, C.Y. Zheng, S.L. Liu and S. Liu The Baffle Blocks Effects of Pressure Characteristics on USBR III Basin Floor	
Q.L. Yan, H. Peng, S.Y. Mao, C.Y. Zheng, S.L. Liu and S. Liu The Baffle Blocks Effects of Pressure Characteristics on USBR III Basin Floor K. Nasiri, M.R. Kavianpour and S. Haghighi Study on Earthwork Allocation Balance of Nuozhadu's Core Rockfill Dam	821
Q.L. Yan, H. Peng, S.Y. Mao, C.Y. Zheng, S.L. Liu and S. Liu The Baffle Blocks Effects of Pressure Characteristics on USBR III Basin Floor K. Nasiri, M.R. Kavianpour and S. Haghighi Study on Earthwork Allocation Balance of Nuozhadu's Core Rockfill Dam C. Tian, G. Chen and C.L. Wang	
Q.L. Yan, H. Peng, S.Y. Mao, C.Y. Zheng, S.L. Liu and S. Liu The Baffle Blocks Effects of Pressure Characteristics on USBR III Basin Floor K. Nasiri, M.R. Kavianpour and S. Haghighi Study on Earthwork Allocation Balance of Nuozhadu's Core Rockfill Dam	821

Stability Evaluation for Cut-Off Wall of Daning Reservoir during Operation Period M. Liu, Z.Y. Wang, Q.W. Zhang and J.C. Li	835
A Discussion on the Differences between Arch Dam Design Standards of the United States, China and Vietnam	
H.H. Vu, T.C. Li and Q.H. Nguyen	841
The Linhuaigang Main Dam Openings Vertical Interlocking Block Revetment Design and Calculation	
Z. Yang and G.S. Wang Research on Influence of Valley Width on the Acceleration Distribution of the Control	846
Research on Influence of Valley Width on the Acceleration Distribution of the Central Points of Concrete-Faced Rockfill Dam H. Zhou and P. Hu	853
Dam Deformation Analysis Based on Independent Component Analysis X.W. Zhan and W.J. Dai	859
Simulation Feedback Analysis of II ₁ -II ₁ Slope at Left Bank of Jinping I Hydropower Station During the Construction Period X. Liu, Z.G. Hu and S.J. Fu	863
Influence of Fineness Coordination of Different Cementitious Materials on Volume Stability of Hydraulic Concrete	072
W.X. Qian, Y.C. Zhang, X.J. Chen and Y.L. Ouyang Effects of Mineral Admixtures on Carbonation and Chloride Ingress of Concrete	873
A. Haibier and Y.X. Wu	878
Structure Design and Mechanics Calculation of Beam Truss Aqueduct Q. Lu, Y. Ye, D. Hu and X.C. Li	883
FEM Simulation of Temperature and Thermal Stress of Xiaowan Arch Dam X.P. Yang, X.L. Chang and X.H. Liu	887
Mechanical Characteristic Research of Novel Prestressed Double Composite Linings X.L. Xie, Y.Q. Gong and H.D. Su	891
Study on Concrete Temperature Crack Based on Mesomechanics X.H. Liu, J.P. Zhu, X.L. Chang and W. Zhou	895
3-D FEM Analysis of Large-Scale Prestressed Concrete Aqueduct in the Middle Route of South-to-North Water Diversion Project C.Y. Zheng, H. Peng, N.H. Li and Y.T. Kang	899
Test Research on Bonding Strength between GFRP Anchor Bolt and Concrete under Corrosive Conditions X.X. Tang, X.Y. Luo, K.L. Li and Y.C. Kuang	904
Study on Thermal Stress and Temperature Cracks Control of Longlin Roller Compacted Concrete Gravity Dam W.Y. Zheng, P. Pan and L.P. Ye	912
Cracking Analysis of Spiral Case Structure with Combinatorial Embedding Manner of Large Underground Power Station Turbine Unit	
Q. Chen, Y.F. Qi and Y.Q. Gong Slope Stability Analysis of High Rockfill Cofferdam Considered with its Construction and	917
Working Processing L.Z. Luo, K. Xiong and Y.S. Ou	922
Study on the Vertical Displacement Models with Impoundment Factors for a High CFRD H.Z. Zuo and C. Zhao	928
The Application of Fuzzy Evaluation Method to Assess Safety Behavior of Xixia Reservoir Earthfill Dam H.N. Yang	934
Temperature Measurement and Data Analysis of the Roller Compected Concrete Dam Z.X. Xing, L. Ni and R.J. Ma	942
Adsorption Behavior and Corrosion Inhibition of 2-Benzothiazolethiol for Q235 Steel in Hydrochloric Acid Solution T. Wang, X.Y. He and X. Yang	947
Nonlinear FEM Analysis of the Steel-Liner Reinforced Concrete Penstock Considering Softening Effect	
H.L. Wu, S.H. Qin, X.F. Du and Q. Li	951
Evaluation for Stepped Apron against Erosion around Piers C.H. Lin, K.H. Cheng and C. Chao	957

Study on the Load-Sharing Ratio of Piles and Soil about the Squared Piles Composite Foundation of Sluice	
Q.L. Cao and Y.K. Meng	963
The Impact of Temperature Difference between Day and Night on Thin-Walled Concrete Structure Z.H. Wang, S.P. Yu, Y. Liu and Y.Z. Liu	970
Analysis on the Dynamical Law of the Dam's Displacement by the Concept of Time- Displacement	
Q. Zhao and X.D. Zhou	974
Chapter 6: Hydropower	
Research on Landslide Accumulation Mass Stability at a Hydropower Station J. Du and Y.X. Zhao	981
Contact Nonlinear Finite Element Analysis for Gate Pier of Pengshui Hydropower Station Y.F. Qi and Q. Chen	985
Numerical Simulation on Hazardous Area Distribution after Gas Outburst in Coal Uncovering Construction of Hydropower Station C.W. Li, W. Yang, B.J. Xie, X. Cao and G.D. Mei	989
Estimation of Excavation Disturbed Zone of High Slope in the Left Bank of Jinping-I	
Hydropower Station J. Peng, G. Rong and Z.L. Li	998
Study on Capabilities of Hydropower Development Project J.N. Wang, W.Z. Tang, Y.X. Li and Y.M. Shen	1004
Hybrid Differential Evolution Based Multi-Objective Approach for Hydrothermal Power	1001
Systems C.L. Chiang	1009
Cost Risk Assessment for Large Hydropower Project Based on the Probability Distribution N.M. Zhang, F.L. Luo, L. Bi and L.X. Hu	1015
Environmental Effect of Large-Scale Hydropower Project - A Case Study in Three-Gorge Project of China	
A.J. Shao, Z.G. Li and Y. Yuan	1020
Design Study of Dual Generated Radial Flux Permanent Magnet Generator for Pico Hydro Generator G.C. Lee, H.C. Kim, T.U. Jung and J.M. Kim	1025
Research of Hydropower Construction Work System Safety Evaluation Based on SEM and	1020
ANP Model J.L. Zhou and Z.Y. Sun	1030
Application of Hydropower Unit Governor Islanding Control Methods in the Xiaowan	
Direct Current Island System X.F. Cai, H.T. Zhang, H. Rong, C.B. Lio, X. Zhu, Z. Zhong, L. Zhang, D.W. Gong, Z.T. Ji and	1024
W.J. Cai Study on Generalized Hamiltonian Model of Hydraulic Generator Unit with Elastic Water	1034
Column T.M. Xu, L.X. Zhang, Y. Zeng and J. Qian	1043
Experimental Research on Structure of Surface Orifice Flood Discharge and Energy Dissipation of Hydropower Station with Large Discharge J. Li and B.L. Jiang	1048
Field Tests of Guide Vanes and Runner Blades of a Large Bulb Turbine for Output Deficiency Diagnosis	
Z. Liu, Z.Q. Huang, S.Y. Zou and H.D. Rao The Non-Equidistant Grey GRM(1,1) Model Based on Reciprocal Accumulated Generating	1057
R.B. Zou, W. Yi and Z.X. Mou	1062
Study on the Downstream Surface Flow Pattern Critical Water Depth of the Hydropower Station H.J. Zhao, D.X. Li and X.K. Wang	1067
Stability Calculation of High Side Slope of Diversion Power System Inlet on Left Bank of Jinchuan Power Station	
L.Q. Tang, D.Y. Liu and Y.J. Li	1071

Study on Short-Term Scheduling of Day-Controlled Hydropower Station Base on the	
Minimum Range of Stage B.Q. Hu, J.P. Liu, T. Cheng, Y.G. Wu and L. Zhou	1076
Chapter 7: Hydraulics	
Estimating Turbulence and Shear Stress under Regular Waves from ADV Data Z. Xiao, C. Shen, Z.X. Guan, Y. Li and R.M. Ji	1083
Experimental and Numerical Study of 3D Hydrodynamic Characteristics in an Excavated Harbor Basin H.Y. Liu, C.B. Jiang, B. Deng and Z.X. Guan	1092
Verification of STACS-VOF Based Two-Phase Flow Model for Interfacial Flows B. Deng, C.B. Jiang, Z.X. Guan and C. Shen	1098
Numerical Investigation of Impact of Pile Space on Flow around Two Vertical Cylindrical Piles	1102
J.W. Qi, C.P. Kuang, J. Gu and J. Huang	1103
Numerical Experiments of Bottom Stress on Wave Setup S.C. Liu and L. Huang Application of Dynamic Mask in Applying of Branches Harden dynamic Characteristics	1108
Application of Dynamic Mesh in Analysis of Propeller Hydrodynamic Characteristics F.L. Wu, Y.L. Peng, Z.G. Zhang and G.D. Wang Hydrodynamic Characteristics in Ecological Arc-Shaped Baffle Fishway	1112
F. Yu, J.Y. Wang and L.Q. Xie Characteristics of Non-Linear Internal Waves in a Three-Dimensional Numerical Wave	1119
Tank L. Zhang, L.L. Wang, Z.Z. Yu, Y.B. Leng, W.Z. Song and B. Zhang	1123
Numerical Simulation and Model Test on Hydraulic Characteristics of Long-Distance	
Inverted Siphon J. Li, Z.W. Mu and L. Li	1131
A New Formula for Critical Depth of the U-Shaped Channels F.L. Li, H. Wen and X.G. Lin	1136
Research on Turbulent Boundary Layer Development of Hydraulic Jump Region with the Theory of Plane Adhesive Wall Jet Flow Z.C. Zhang, R.B. Li, Y. Zhao and M.H. Fu	1141
Energy Loss during Density Current Flowing through Width Abrupt Changed Channel P. Zhang, S.X. Li, W.Y. Sun and L.Y. Gu	1147
Effects of Water Temperature on Clinging Flow of Rectangular Sharp-Crested Weir Y.J. Ji, X. Zhang, H.F. Zhai, D.Y. Ren and L. Hua	1151
Vertical Distribution of Turbulence Shear Stress During Tidal Period Z. Zhang and Z.Y. Song	1155
Specification of Turbulent Diffusion by Random Walk Method for Oil Dispersion Modeling J.H. Wang and J.S. Zhang	1161
Solution to the Shallow Water Equation with FVM Based on Unstructured Grid J. He, X.S. Zhao and H.Y. Liu	1168
Simulation Study on the Characteristics of Flow Field in the Process of Wave Impact J. Feng	1172
A Study on the Evolution Characteristics of the Large Structure of Turbulence in a Meander Channel Y.H. Yang, X.Q. Liu and M.J. Zhang	1177
Investigation of Apron Setting on the Main Deep Trough of River Bed by 2D Unsteady Flow Simulation	
K.H. Cheng, C.H. Lin and C. Chao	1182
Chapter 8: Hydraulic Machinery	
Software Development of Hydraulic Design for Pump Suction Chambers H.C. Ma, K. Wang and X.H. Zhou	1191

Numerical Simulation on Flow Field of Screen Filter for Drip Irrigation in Field Q.L. Zong and T.G. Zheng	1197
High-Speed Hydraulic Compactor Application in the Backfilled of Bridge Platform Y.K. Wu, X.S. Sang and B. Niu	1201
Numerical Model for Shallow Wake behind Cylinder L. Li, Z.F. Yan and Z.W. Liu	1205
The Float Motion Analysis in Rotameter C.L. Zhang and Y. Zeng	1213
Overview of a Few Key Issues for Optimal Operation of Parallel Pumping Stations Y. Gong, G. Shen, K. Zuo and H.S. Shi	1217
The Robustness Analysis for Hydro Turbine Governing Systems Used Different Governor Y. Wang and Y. Zeng	1223
L ₂ Disturbance Control Based on Generalized Hamiltonian Model of Hydro Turbine Generating Sets	
Y. Zeng, L.X. Zhang, J. Qian, C.L. Zhang and Y. Wang Study on Flow Measurement of Large-Scale Low-Lift Pumping Stations with CFD Method	1228
B. Cheng and Y.H. Yu	1233
Numerical Simulation of 3D Solid-Liquid Two-Phase Turbulence Flow in Axial-Flow Pump Impeller H. Hua, X.B. Liu, S.B. Ou and Y.Z. Zeng	1237
Fuzzy PID Control for Valve-Controlled Cylinder Hydraulic System Y.J. Liu, Y.D. Xie and H. Wang	1244
Research of the Influence of the Variable Tidal of the Yangtze River on Optimal Operation of Adjustable-Blade in the Large Pumping Station	1240
L.H. Zhang and H.T. Qian Numerical Simulation and Experimental Research of a New Butterfly Valve Y. Wang, Y. Zhu, X.R. Shen and J.F. Ma	1249 1255
Research of Erosion, Cavitation and Their Interactive Wears of Fluid Machinery Three- Phase Flow	
Y. Tang, L. Liang, Y.X. Pang, Z.M. Zhu and Y. Xu	1261
Research and Development of Acoustic Emission Signal Monitoring System for Hydraulic Turbine Cavitation Z. Liu, S.Y. Zou, F.H. Jin and Z.C. Xie	1267
Numerical Analysis of Sludge Pump with Recessed Centrifugal Impeller H.G. Zhu, R.T. Zhang, L.S. Wei, L.M. Zhang, R.Y. Lu and J.J. Wang	1271
Analysis on the Application of High Speed on-Off Valve(HSV) as Pilot Valve K.S. Zheng, L.F. Shao, F. Liu, G.J. Chen and Z. Tian	1275