

Hydraulic Engineering and Sustainable City Development III

Part 1

Edited by
Xun Wu, Weizhen Chen,
Weijun Yang and Jianguo Liang



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Hydraulic Engineering and Sustainable City Development III

PART 1

Selected, peer reviewed papers from the
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July 30-31, 2014, Hangzhou, China

Edited by

**Xun Wu, Weizhen Chen,
Weijun Yang and Jianquo Liang**



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Preface

This proceeding contains the accepted papers from The 2014 3rd International Conference on Civil, Architectural and Hydraulic Engineering (ICCAHE2014). The first of this conference was held in Zhangjiajie, China on 10-12 August 2012 and the second conference was held in Zhuhai, China on 27-28 July, 2013. Following the success of the previous conferences, The third of this conference series (ICCAHE 2014) was held in Hangzhou, China, on July 30-31 2014. This conference series is a forum for enhancing mutual understanding between scientists, engineers, policymakers and experts in the civil, architectural and hydraulic engineering field. This proceeding is enriched by contributions from many experts representing many industry and academic establishments worldwide. Authors from more than 20 different countries have pooled their rich multidisciplinary up-to-date knowledge, in order to share their invaluable experience with the community.

All papers published in this volume have been peer reviewed through processes administered by the proceedings editors. Reviews were conducted by expert referees to the professional and scientific standards. This book covers the subject areas of Hydrology, Water Resources, Flood and Drought Management, Hydraulic Engineering, Water Purification and Wastewater Treatment, Sustainable City and Regional Development, Indoor Environment, Urban Ecological Environment, Environmental Engineering and Environmental Protection, Electricity Infrastructure and Power Transmission, Road and Railway Engineering, Transportation Planning, Construction and Operation and Organization, Bridge Engineering, Traffic Control and Information Technology, Carrying Tools and Operation Engineering, Computer Applications and Intelligent Algorithms.

We would like to express our deep gratitude to all the keynote speakers, authors, referees, exhibitors, technical co-sponsoring organizations, committee members, and many others on whom the success of this prestigious event depends.

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Table of Contents

Preface	v
Conference Organization	vi

PART 1

Chapter 1: Hydrology, Water Resources, Flood and Drought Management

3D-GIS System Research and Development for Emergency Hydrologic Analysis F.X. Chai, D.M. Chai, H.R. Dai and S.F. Huang	3
A Comparative Study of Different Hydrological Model and their Application in Little River Catchment S. Yan, Z.Y. Zhang, F.L. Zuo and W.H. Zhang	9
Allocation of Water Resources and Environment Management of the Bachuan River in Chongqing Based on Ecological Water Requirement T.Y. Xiang and L. Sun	14
An Assessment on Geographically Weighted Regression-Based Merging Method of Satellite and Gauge Rainfall Q.F. Hu, Z. Li, Y.T. Wang, Y.L. Liu and T.T. Cui	19
Analysis for the Characteristics of Sediment in Tarim River S.Y. Deng	25
Analysis of Precipitation Characteristics of Poyang Lake Basin Y.H. Cao, X.F. Ye and G.H. Lv	29
Analysis of Spatial Distribution Characteristic of Urban Landscape Water in Shandong Province Q.Y. Xu, W.P. Wang and H.Y. Deng	33
Analysis of the Rigional Water Resource between Supply and Demand Balance and the Study of Countermeasures under the Background of Urbanization - A Case Study of Yulin City X.J. Liu and N. Lei	37
Application of Fuzzy Pattern Recognition Model on the Regional Water Resources Carrying Capacity Evaluation Y.D. Wei, X.F. Yu and M. Li	43
Evaluation of Rural Water Security in Shandong Province of China M.M. Leng, L. Jin and Q.G. Li	49
Fuzzy Comprehensive Evaluation of Carrying Capacity of Water Resources in Shanxi Province Y. Liu, H. Wang, J.H. Wang, X.D. Chen and J.H. Liu	53
Multi-Objective Optimal Allocation for Regional Water and Land Resources G.H. Fang, Q.Q. Yin, X.F. Huang and S. Xu	58
Multi-Reservoir Ecological Operation Using Multi-Objective Particle Swarm Optimization W.L. Liu and L.N. Liu	65

Non-Uniform Sediment Input of the Middle Yangtze River, China	70
H. Ge, L.L. Zhu and R.Y. Huang.....	
Optimal Allocation of Water Resources Based on Multi-Objective Particle Swarm Algorithm and Information Entropy	75
W.L. Liu and L.N. Liu	
Research and Application on Technology of Flood-Storage and Flood-Detention of Coal Mining Subsidence Area of Suzhou Coal Mine	80
J.Z. Zheng, M. Zhu and Z.L. Wang	
Research on the Challenges and Solutions of Urban Flood Control System of Nanjing City	84
X. Wen and G.H. Fang.....	
Reservoir Flood Forecast of NanSi Lake in China	88
J. Ma and L.Q. Yang	
Study on Off-Stream Ecological Water Demand of Fu River Basin	92
F.L. Wang and W. Hu	
Study on the Influence of Shallow Groundwater Source Heat Pumps on Groundwater Quality in Weifang, China	97
Q. Huang, W.P. Wang and H.Y. Deng.....	
The Pattern and Cause Analysis of Tidal Level Fluctuation of the Yangtze River in Nanjing Section	101
H. Yu, Q. Li, L.X. Wei, Z.K. Xiao, S. Cao and W.G. Zhang	
The Sensitivity Levels of the Parameters in SMAR Model	108
L.H. Dong, L.H. Xiong, C. Shen and J.W. Wang	
The Spatial-Temporal Variability of Karst Water Chemistry in Houzhai Karst Basin, Guizhou, China	114
X. Li, Y.Q. Wang and L.H. Liu	
The Study of Precipitation Forecast Model on EMD-RBF Neural Network - A Case Study on Northeast China	119
X. Sun, S.F. Qiao and J.R. Xie.....	
The Study on Initial Allocation of Water Rights in China	123
Q. Zhang, J.Y. Jin, D.K. Wang and L. Qin	
Use of Hydrologic Time Series Data for Analysis the Karstic Drought Characteristic	127
L.H. Liu, D.S. Wang, H. Huang and G.Q. Xu	
Trend Analysis on the Flow Alteration in the Nature Reserve, Upstream of Yangtze River	132
C. Shen, L.H. Dong, Y.C. Wang, S.X. Feng and Y. Wang.....	
Problems on Sediment Treatment and Utilization on Sediment-Laden River	137
G.M. Gao, T. Li, S.Q. Jiang and Z.F. Yan	
Characteristics of Temporal and Spatial Distribution of Water Quality in the Ponds of Lv-Tang-River National Urban Wetland Park, China	141
Y.Y. Liu, Y.Y. Liu, L.B. Mo, C.S. Zeng, M.L. Yang, Y.H. Li and C.M. Zhong	
Deposition Morphology of Tributary Zhenshui in Xiaolangdi Reservoir	145
T. Wang, Y.P. Ma, J.H. Zhang, H.B. Ma and W.L. Fan Li	
Design Research on the Planning and Architecture of Water Conservancy Control Projects near Urban Waterfront Area	149
G. Wu and Q.B. Zhuang.....	
Ecological Revetment Reconstruction of Huang Jia River in Licha	156
Y. Wang and Y.T. Xu	
Effect of New Village Layout on Flood Control Based on Hydrodynamic Model in Henan Yellow River Floodplain	162
L.Q. Li, W.J. Cui and X. Liu.....	

Effect of Projects within River Courses on Flood Control through Superposition Calculation Method	167
X. Liu, F.Q. Wang, J. Du and L.Q. Li.....	
Experiment Study of Bed Sediment in Yi River Shandong China	171
Y. Wang and L.Q. Yang.....	
Flow and Sedimentation Characteristics on Typical Tributary in Xiaolangdi Reservoir on Yellow River	175
T. Li, J.H. Zhang, G.M. Gao and T. Wang	
Grey Logistic Model to Predict the Effective Irrigation Area in Liaoning Province	179
J.L. Chen	
Infiltration Characteristics of Soil Moisture in Liangping County	183
S. Yan, J. Gao, Z.Y. Zhang, F.L. Zuo and W.H. Zhang.....	
Investigation and Analysis of the Present Sedimentation Situation of the Small Sized Reservoir in Jiangxi and Guizhou Provinces	187
D.D. Li and J.B. Sheng	
Model Test of the Riverbed Deformation for the Flood Control Project of Chengde Reaches of Luanhe River	191
H.J. Zhao, Y.D. Jin, H.F. Yan and F.X. Chai.....	
Periodical Water Production Function of Processing Tomato (<i>Solanum lycopersicum</i>) Subjected to Water Deficit in an Arid Environment	196
H.J. Zhang and J.D. Zhang.....	
Sensitivity Analysis of Parameters in HEC-RAS Software	201
S. Li, J.M. Zhang, W.L. Xu, Y.R. Wang, Y. Peng, J.N. Li, X.L. He and P. Li	
Study on Evolvement of High Beach and Deep Channel of Reservoir in the Sediment-Laden Rivers	205
K.P. Li, J.H. Zhang, H.B. Ma, G.M. Gao and W.L. Fan.....	
Study on the Adsorptive Solute Cr(VI) Loss from Soil to Surface Runoff with Temkin Adsorption	209
X.J. Wu, J.X. Tong, C.Q. Tan, B.X. Hu and J.Z. Yang	
Study Optimization Irrigation Schedule of Winter Wheat in Hetao Irrigation District	217
H.X. Zheng, H.P. Li, S. Zhang and J.C. Zhang.....	
Numerical Study on the Initial Formation of the Radial Sand Ridges	222
S.S. Zhang, Y. Li and C. Hu	
The Eco-Hydrological Demand Research on <i>Coreius heterodon</i> Reproduction in the Upper Yangtze River Reserve	226
B.Y. Chen, H.H. Luo, Q.R. Yang, W. Huang and H.L. Han	
Application of HEC-RAS Model in Simulation of Water Surface Profile of River	232
C.H. Wang.....	
Application of Permeable Spur Dike in Mountain River Training	236
Y.J. Zhou, S. Qian and N.N. Sun	
Calculation and Analysis on Water Flow Character of Dongbei Waterway in Middle Reaches of Yangtze River	241
Y.H. Yang, M.J. Zhang and H.J. Xu	
Calibration and Evaluation of ORYZA2000 under Water and Nitrogen Managements	246
G.B. Pang, Y. Li, Z.H. Xu and H.Z. Gao	
Cognitive Calculation on Water Flow of Dongbei Waterway in Middle Reaches of Yangtze River	251
Y.H. Yang, M.J. Zhang and H.J. Xu	
Temporal Variation of ET₀ in Recent 50 Years in Hilly Area of Central Sichuan	255
Y.M. Tang.....	

Chapter 2: Hydraulic Engineering

Design of a Pressurized Rectangular-Shaped Conduit Using the Rough Model

Method (Part 1)

B. Achour	261
-----------------	-----

Discussion of Muddy Surface Settling of Xiaolangdi Reservoir

S.Q. Jiang, J.H. Zhang, G.M. Gao, H.W. Wang and T. Li	267
---	-----

Formula Type of Local Scour Depth on Spur Dike Nose

Q. Ying	271
---------------	-----

Friction Head Loss Calculation for the FRP Pipes of Inverted Siphon Project

S. Chang, Z.W. Mu and L.B. Wan	275
--------------------------------------	-----

Game Theory Analysis of Private Supply in Farmland Water Conservancy

X.Y. Ji and M. Song	279
---------------------------	-----

Hydrocomp Design and Prediction of Hydrodynamic Performance of Propeller

A.F. Zhang, T.L. Zhang, J.M. Ding and J.Y. Liu	283
--	-----

Lateral Distributions of Depth-Averaged Velocity in Compound Channels with Submerged Vegetated Floodplains

M.W. Zhang, C.B. Jiang and H.Q. Huang	288
---	-----

Modal Analysis of a Turbine Blade Based on Fluid-Thermal-Structural Coupling

Q. Zhang, W. Zhao, T.Y. Liu and Y.H. Xie	300
--	-----

Numerical Simulation of High Speed Water Jet Erosion of Sand Bed Based on SPH

F.S. Ni, D.Y. Zhang, H. Wang and L. Gu	304
--	-----

Numerical Simulation of Piping Mechanism under Unsteady Flow

X.D. Ni, S.L. Zhao and Y. Wang	309
--------------------------------------	-----

Numerical Simulation of U-Shape Bend Flow Movement Based on CCHE Model

Y.Y. Li, Z.W. Mu, Y.P. Sun and Y.F. Jia	316
---	-----

Preliminary Experimental Study of Landslide Generated Waves in the Reservoir

K.J. Ren, J.B. Han, G.B. Huang and Z.B. Jiang	321
---	-----

Proposal of a Conceptual Model as Tool for the Hydraulic Design of Vegetated Roof

M. Carbone, F. Principato, G. Nigro and P. Piro	326
---	-----

Study on Free-Surface-Pressurized-Flow of Pressure Spillway Tunnel under Different Submerged Depth

Y.K. Wang, R.Q. Liao and J. Zhu	332
---------------------------------------	-----

Study on Operation and Control of Long Distance Canal System by Stages in Winter

G.Q. Liu, C.D. Wang and Z.Y. Wu	336
---------------------------------------	-----

The Size Distribution of Carrying Capacity in the Non-Uniform Suspended Load Capacity Calculation Method and its Verification

J.F. Xu	341
---------------	-----

To Confirm Structural Coefficient for Design of Penstocks in Hydropower Stations by Partial Factors-Based Method

Z.H. Yuan, W. Sun and Y.C. Yuan	345
---------------------------------------	-----

The Physical Model and the Numerical Model of Flow Pattern Downstream a Flat-Bottomed Sluice

C. Hu, Y. Li and S.S. Zhang	349
-----------------------------------	-----

Hydraulic Method and a Device of Fish Protection at Water-Intake from the Mountain Rivers

N. Vatin, N. Lavrov and N. Korzhavin 353

Chapter 3: Water Purification and Wastewater Treatment**A Mini Review of Soluble Microbial Products in the Membrane Bioreactor Systems**

D.Q. Ran, L.G. Lu, W.D. Zhao and Y. Shang 361

Defluoridation of Algerian Drinking Water by Precipitation and Adsorption Methods

S. Achour and L. Youcef 365

Plants of Constructed Wetland Wastewater Treatment Systems: A Comparison of the Oxygen Release from Roots of Typha and Phragmite

C. Dong, Y.H. Huang, S.C. Wang, Y.J. Huang, L. Tao and Y.X. Xu 371

Progress in the Development and Application of Oilfield Produced Water Treatment Processes

J.D. Wang, C.T. Qu and S.Y. Liu 376

Research on Foam-Separation Type of Surfactant Wastewater Treatment

Q.H. Shen, X.J. Wang and Y.Z. Ji 380

Study on Biological Purification Effect on Tail Water from Sewage Treatment Plant at Small-Scaled Town, South Jiangsu

R. Wu, L.G. Xu and D. Chen 384

Study on the Treatment of Oil-Produced Wastewater Using the Combined Processes Including Advanced Oxidation

Y.C. Li, R.J. Su, Y. Su, F.Y. Zhang, B.J. Ye, P. Wei and Y.Q. Liu 390

Synthesis Technology of Amine Surfactant Modified Brewer's Grains for the Adsorption of Cr(VI)

X.L. Jiang, Y.H. Jiang, C.G. Cai and H. Chen 394

Urban Sewage Treatment Process and Selection Principles

C.M. Liu and Z.Y. Wang 399

Discussion on MBR Treatment Process of Domestic Landfill Leachate Design Issues in Northeast Area

X.S. Wang, Y.C. Fei and Y. Zhao 403

Megacities Land Drainage and Land Runoff Features and Treatment

V. Chechovichkin and N. Vatin 409

Leakage Mechanism of the Wastewater Dam in Metal Mine and its Anti-Seepage Technology

J.Q. Zhao, H.Y. Ju, P. Zhang and S.L. Liu 416

Chapter 4: Oil, Gas and Mineral Resources Exploitation**Fracture Propagation Direction during Simultaneous Frac in Shale Gas Development**

P. He and D.S. Zhou 423

Investigation on Material Selection in Missan Oilfields Similar Environment

S. Cheng, F. Lin, P.L. Yang, P.K. Zhu, J.G. Deng and X.Q. Sun 427

Research on the Moveable Oil in Tight Oil Reservoir with NMR and Centrifugal Experiment	434
H.K. Guo, Q. Zhu, Z.Q. Meng and H.B. Li	
Study on the Bauxite Slimes Engineering Characteristics of Pingguo Alumina Industry Company	441
J.H. Wang and C.H. Zhao	
Study on the Effect of Humic Acid Acetamide on the Rheological Properties of Gas-to-Liquid Based Drilling Fluids	447
L. Li, X.B. Yuan, C. Ma, R.C. Cheng and Y.P. Yang	
Wellbore Stability of Shale below Salt Formation of Faqui Oilfield in Iraq	451
F. Zhang, Y.L. Mu, S. Cheng, J.G. Deng, B.H. Yu and Y. Cao	
A New Method to Improve Waterflood Effect Analysis in Karamay Glutenite Reservoir	458
H. Wang, X.W. Liu and C.C. Gai	
Wellbore Stability of Salt and Anhydrite Formation of Fauqi Oilfield in Iraq	462
Y.L. Mu, L. Wang, K.M. Liu, J.G. Deng, B.H. Yu and Y. Cao	
The Influences and the Mechanism of Action of Sodium Hexametaphosphate during Micro Fine Particle of Lean Hematite Ore of Grinding Operation	469
B. Liang, L.B. Zhao, M.M. Han, H. Zhang, Q.F. Zhang, W.M. Zheng, W.S. Wu and A.S. Meng.....	

Chapter 5: Landscape Planning and Design

Construction of Eco-Civilization of Water Based on Human-Water Harmony	477
M.D. Jiang, H.L. Wang and J. Wang	
Explore the Commercial and Residential Area of Contemporary Landscape Design Problems	481
Y. Zhang.....	
Present Situation Evaluation on Scenery Resources of the Canal Water Scenic Park in Linqing	484
X. Zhang, J.W. Huang, H.W. Chen and X.S. Sun.....	
Street Corner Space Landscape Design	489
H.Y. Ouyang and B.F. Chen	
Study on Waterfront Landscape Design Based on Regional Culture	493
Y. Wang and Y. Chen	
The Green Space Growing from Building: Space Analysis and Evaluation on the Outdoor Environment of Shenzhen Foreign Languages School	497
Y.R. Hu, K.L. Zhang and X. Zhou.....	
The Strategic Research on Green Space System Planning of Small Towns in Cold Region	502
L.J. Guo, S.T. Li and H.Q. Sun.....	
The Study about Geomancy Art in Su Prince Tomb of Ming Dynasty	506
M.H. Ye, Z.H. Liu and X.W. Meng	
Under the Influence of Modern Western Culture a Strong Trend in Chinese Landscape Design	510
W.X. Li	
Landscape Pattern Analysis of Land Use in Low Mount Hilly Land of Harbin Eastern Suburb	514
H.H. Song and Y.F. Tan.....	

Chapter 6: Urban, Rural Planning and Design

A Shape Grammar Experiment in Generating Urban Tissues X.Z. Zhang and B.B. Man.....	521
An Empirical Study on the Impact of Road Infrastructure of Urbanization in Shaanxi Province X.L. Tang and Y.F. Zhang	526
Discussion on Construction of the Weihe River System Heritage Corridor in Xi'an Metropolitan Area D.Q. Zhang, W.W. Shao and T.Q. Feng	531
Green System Planning Based on the Green Infrastructural C. Wang and Y.X. Meng.....	537
Numerical Simulation of Wind Environment in a Hill and Buildings Configuration C.J. Shen, C.L. Gao and Y.M. Song	544
Reflections on the Construction of the New Urbanization in Shanxi X. Ma, Z.P. Zhang and Y. Liu.....	550
Research on the Homogeneous-Grid Spatial Structure of Rural Habitats: A Cast Study of Yishikuli T.W. Gong, J. Shi, Y. Zhang and F. Li	556
Study on Measures against Urban Construction of Port City Face to DPRK with Uncertain Factor - A Case Study on Ji'an City in JiLin Province M. Li.....	560
Study on Urban Design of Ganzhou & Nankang Financial Center X.Q. Wang, L.Y. Fan and L. Cao	564
Study on Utilization of the Space under Urban Viaducts in Harbin S.T. Li and L.J. Guo	568
The Cause of Urban Color Pollution and Countermeasures X.B. Wang.....	572
The Characteristic Analysis and Protection Thinking on the Xinmin Street Historical and Cultural Blocks in Changchun L.M. Bai and J.M. Hou	576
The Characteristic and Protection Analysis on the Renmin Street - The Historical Axis of Changchun L.M. Bai and J.M. Hou	580
The Countermeasures for the Institutional Limitations on Planning and Implementation in China Rural Towns X.P. Liu	584
The Dialogue of New and Old Building in the Process of City Development - Research the Fusion Methods of New and Old Building in Yichang City T. Yan, Y.C. Xia, J.Y. Li, M.M. Ji, X.H. Liang and K. Wang	587
The Ecological Planning of Riverside Region in Lanzhou X.J. Zhang and H. Chen	593
The Ecological Strategies on Development of Rural Communities in Northwest China Z.C. Yu and Z.L. Lei.....	598
The Research of Evolution of Spatial Morphology of Harbin H.T. Sun, L.L. Zhang and X.W. Bai	603

The Study on Problems of Urban Transportation Development Planning - Base on Changchun Case	
H. Gong and W. Gao.....	607
To Promote Sustainable Urban Development - Advantage Study of Roof Greening	
H.S. Ma and W. Lu	612
Arcades City: Early-Modern City Planning Practice of Wuzhou	
J. Li, B.H. Li and L. Lin.....	616
The Development Planning of Boxue Ecological Village, Haikou	
Y. Wang and Y.P. Wang.....	620
Study on the Enlightenment from EU Smart City Evaluation System	
D.M. Ni and R.H. Liu	624
The Research of Smart Town Construction	
S.H. He	629
Development of the Capital Cetinje Surrounded by of Centuries-Old Coastal Towns of the Southern Adriatic Sea	
G. Radovic, V. Murgul and N. Vatin	634
Present Situation and Countermeasures of China's Wisdom Scenic Area	
B. Yu	639
Researching on New Urbanization in County Regions	
G.R. Hong and B.F. Chen	644
Old Neighborhoods Renovation Design from Low-Carbon Eco Perspective - About Yong Kong "Old Town Characteristic Cultural Blocks" Renovation Design	
K. Wang, Z.Y. Cao and L. Xu.....	648
Spatial Integration and Structural Optimization of Tourism Resources in Jiangsu by Analyzing the Condensation Nucleus	
T. Hong and H. Wu	654
Study on Subway Public Art Based on Space Atmosphere - A Case Study of Xi'an Subway Public Art and Design	
J. Sun and Z.G. Li	658
Method of Quick-Survey of the Phytocoenosis in Urban Green Space	
Y. Tan, Q.S. Yao, H.X. Ji and L.Y. Wei.....	662

Hydrology, Water Resources, Flood and Drought Management

CHAPTER 1:

Hydrology, Water Resources, Flood and Drought Management