Poster Session A

The Use of Continuous Simulation to Evaluate the Performance of Detention Tanks
Paolo S. Calabrò, Mediterranean University of Reggio Calabria, Reggio Calabria, Italy

Experience with Separating Wastewater Treatment Systems – The Ecological Housing Estate Lübeck Flintenbreite
Martin Oldenburg, Ph.D. & Andrea Albold, OtterWasser GmbH, Lübeck, Germany & Jutta Niederste-Hollenberg & Joachim Behrendt, Ph.D., Technical University of Hamburg, Hamburg, Germany

The CSO Control by the Fine CSO Screen
Tsuneto Takasou, Eiichi Ookubo, Kenji Sasoka & Takanobu Hoshi, Japan Institute of Wastewater Engineering Technology, Tokyo, Japan

Development of High-Speed Combined Sewerage Stormwater Treatment Systems
Susumu Yoshida, Tokyo Metropolitan Government, Tokyo, Japan & Yoshibo Tomita, Ph.D., NGK Insulators, Ltd., Aichi, Japan

Treatment, Storage and Control of Stormwater in Urban Developments
Pamela Deahl, P.E., Hydro International, Portland, OR & Michael G. Faram, Ph.d., Hydro International, Clevedon, UK

Filtration of Storm Water for Metal Reduction using Natural Filter Substrates
Carina Färm, Mälardalen University, Västerås, Sweden

Survey of Oil Water Separators and Drainage Design Aspects at Transformer Stations
Paul Wisner, Ph.D., Wisner Hydrology Consulting, Toronto, Ontario, Canada, Karel Heimlich, P.Eng., Hydro One Networks, Inc., Toronto, Ontario, Canada & Liza Gervais, URS Cole, Sherman & Associates, Ltd., Thornhill, Ontario, Canada

Impacts of Dust Suppressant Application on the Quality of Urban Runoff from Disturbed Lands
Daniela Loreto, Jacimaria Batista, Thomas Piechota & Vivek Singh, University of Nevada, Las Vegas, NV

An Evaluation Method for Stormwater Infiltration
Masanori Nakanishi, Ph.D., Kinki University Technical College, Kumano City, Mie, Japan

Rainfall Simulation on Disturbed Lands Treated with Dust Suppressants: Hydrologic Impacts
Vivek Singh, Thomas Piechota & Vitor Ponte, University of Nevada, Las Vegas, NV

A Laboratory Study of the Effect of an Island to Extend Residence Time in a Rectangular Track

Åsa Adamsson & Lars Bergdahl, Chalmers University of Technology, Göteborg, Sweden & Maria Vikström, DHI Water & Environment AB, Växjö, Sweden

Evaluation of Possibility of Pollution Control and Stormwater Reuse with Stormwater Reservoir in an Urbanized Area
Yasuhiko Wada, Kansai University, Osaka, Japan, Hiroyuki Miura, Hiroshima Shudo University, Hiroshima, Japan & Ritsuo Tada, Kiyoshi Matsumoto & Masayuki Marikane, Chuo Fukken Consultants Co., Ltd., Osaka, Japan

Potential of Alternative OSD/OSR Technologies Concerning Reduction of Urban Stormwater Flow
Marek Zawilski, Ph.D., & Grazyna Sakson, Ph.D., Technical University of Lodz, Lodz, Poland

Sustainable Urban Drainage Concept for Beijing
W. F. Geiger, University of Essen, Essen, Germany, W. Koeniger, Dorsch Consult, Munich, Germany, G. Weiss, UFT, Bad Mergentheim, Germany, Ch. Willhelm, GEP, Eitorf, Germany, B. Monninkhoff, WASY Berlin, Berlin, Germany, T. Ludwig, Technical University of Berlin, Berlin, Germany, M. Jelinek, ibb, Munich, Germany, A. Pan, Beijing Water Bureau, Beijing, China & Y. Ding, Beijing Hydraulic Research Institute, Beijing, China

Multiphase Modeling and the Prediction of Retention Efficiency in a Side Weir CSO
David Burt & Mick Corton, Rose Consulting Engineers, Ltd., Bristol, UK, David Hetherington, United Utilities, Warrington, UK & David Balmforth, Ph.D., Montgomery Watson, West Yorkshire, UK

Particle Retention in Rectangular Storage Tanks: Computations with a Linear Mass Transport Model and Comparison with Laboratory Experiments
Mogens Jensen & Niels Bødker Thomsen, Vivendi Water, Søborg, Denmark

Solute Retention in Storage Tanks
I. Guymer, W. J. Shepherd, M. Dearing, R. Dutton & A. J. Saul, University of Sheffield, Sheffield, UK

Research on Evaluation Method for Stormwater Infiltration Facilities
Masato Takasou, Yuuichi Ichikawa & Syuuichi Masuoka, Japan Institute of Wastewater Engineering Technology, Tokyo, Japan

Development of an Assessment procedure for Permeable Pavements
S. Fach, W. F. Geiger, Ph.D. & C. Dierkes, Ph.D., University of Essen, Essen, Germany

Restoration of Infiltration Capacity of Permeable Pavers
Christopher Gerrits, Grand Valley, Ontario, Canada & William James, University of Guelph, Guelph, Ontario, Canada

Poster Session B

GIS Based Urban Drainage Analyses and Their Preliminary Applications in Urban Stormwater Management
Linmei Nie, Wolfgang Schilling & Ånund Killingtveit, Norwegian University of Science & Technology, Trondheim, Norway & Sveinung Sægrov & Ingrid Selseth, SINTEF, Trondheim, Norway

Advantages and Limitations of Automated Storm Sewer Design
Jennifer Hatchett & Kristen Dietrich, Haestad Methods, Waterbury, CY & Thomas Walski, Haestad Methods, Nanticoke, PA

Technical Performance Assessment of Urban Sewer Systems
Maria Adriana Cardoso, Sergio T. Coelho & Paulo Praça, National Civil Engineering Laboratory, Lisbon, Portugal, Rita S. Brito, Saneamento da Costa do Estoril, SA, Paço de Arcos, Portugal & José Matos, Technical University of Lisbon, Lisbon, Portugal

New One-Dimensional Implicit Numerical Dynamic Sewer and Storm Model
Ming Jin, Samuel Coran & Jack Cook, Haestad Methods, Waterbury, CT

Comparison between a Detailed Model and Two Simplified Models in Urban Stormwater Quality Simulation
Paolo S. Calabrò, Mediterranean University of Reggio Calabria, Reggio Calabria, Italy & Marco Maglionico, University of Bologna, Bologna, Italy

Predicting Attenuation of Viruses in Percolating Water
Barton Faulkner, US Environmental Protection Agency, Ada, OK & William Lyon, ManTech Environmental Research Services Corporation, Ada, OK

Risvollan Urban Hydrological Model (RUHM): Preliminary Results
Bernt Viggo Matheussen & Sveinn T. Thorolfsson, Norwegian University of Science & Technology, Trondheim, Norway

Verification of Urban Runoff Models
Donna Hackett & John Schenk, Ph.D., P.E., NSF International, David Crawfod, P.E., Crawford Engineering Associates & Mary K. Stinson, US Environmental Protection Agency

Poster Session C

Characteristics of Pollutant Load Discharge in Combined Sewer Systems: Focused on nitrogen, Phosphorus and the Characteristics of the Drainage Area
Makoto Matsubara & Hiroaki Morita, Ministry of Land, Infrastructure and Transport, Ibaraki, Japan

System Diagnostics using Flow Data: Quantifying Sources and Opportunities for Performance Improvement
M. C. Almedia, National Laboratory of Civil Engineering, Lisboa, Portugal & R. S. Brito, SANEST, SA, Paço de Arcos, Portugal

Optimisation of Wastewater Systems: A Stepwise Approach
Marcel E. Boomgaard, Witteveen+Bos Consulting Engineers, Ltd., Deventer, The Netherlands & Jeroen G. Langeveld & François H. L. R. Clemens, Delft University of Technology, Delft, The Netherlands

High-Speed Fiber Filter for a Combined Sewerage System to Reduce Discharge Load
Tsuneto Takasou, Toshirou Tashiro, Kenji Sasaoka & Masaharu Katou, Japan Institute of Wastewater Engineering Technology

Ground Characterization and Foundation Evaluation for the Providence CSO Near Surface Facilities
Tennyson M. Muindi, Haley & Aldrich, Inc., Boston, MA, Philip H. Albert, Narragansett Bay Commission, Providence, RI, Donald Olson, CH2M HILL, Milwaukee, WI & Geoffrey Hughes, Louis Berger Group, Providence, RI

Poster Session D

Simple Practical Applications for Sustainability Principles in Urban Drainage Master Planning
Martin A Farber, P.E., Department of Utilities, Sacramento, CA

Urban Runoff Management in High Concentration Industrial Sites: A Case Study
Alessandro Muraca & Matteo Balistrocchi, Brescia University, Brescia, Italy

Extension of Storm Water System at Östra Torn, Lund
Edgar Villareal, Lars Bengtsson, Janusz Niemczynowicz & Linus Zhang, Lund University, Lund Sweden

Ecological Aspects and Management of Water Level Fluctuations in Small Natural Lakes with Urbanized Watersheds
Paul Wisner, Ph.D., P. Eng., Wisner Hydrology Consulting, Toronto, Ontario, Canada & Liza Gervais, P.Eng., URS Cole Sherman & Associates, Ltd., Thornhill, Ontario, Canada

Poster Session E

Concept for Urban Storm Water Treatment in Schleswig-Holstein, Germany
Matthias Grottker, Jutta Nauhaus, Maike Schmelzer & Simone Teichert, Fachhochschule Lübeck, Lübeck, Germany & Thomas Einfalt & Markus Jessen, einfalt&hydrotec GbR, Lübeck, Germany

Application of a New Flow Resistance Formula: Step-Pool Culvert Installation

A. R. Maxwell & A. N. Papanicolaou, Washington State Univerity, Pullman, WA

Watershed Impacts on the Fish population in the Clearwater River, ID
A. N. Papanicolaou & A. Bdour, Washington State University, Pullman, WA & N. Evaggelopoulos, California State University, Sacramento, CA

Overview of the Urban Stormwater BMP Performance Monitoring: A Guidance Manual for Meeting the National Stormwater BMP Database Requirements
Marcus M. Quigley, P.E., GeoSyntec Consultants, Boxborough, MA, Eric W. Strecker, P.E., GeoSyntec Consultants, Portland, OR & Ben Urbonas, Urban Drainage and Flood Control District, Denver, CO

Poster Session F

Estimation of the Runoff Rates from Non-Point Pollutant Sources Considering the Detachment Rate
Masato Noguchi, Yoshinobu Mizuno & Sawami Nomura, Nagasaki University, Nagasaki, Japan

Removal of Dissolved Heavy Metals from Pre-Settled Stormwater Runoff by Iron-Oxide Coated Sand (IOCS)
Jens Møller, Rambøll Water & Wastewater, Virum, Denmark & Anna Ledin & Peter Steen Mikkelsen, Technical University of Denmark, Lyngby, Denmark

Poster Session G

Routine Use of Radar Measurements in a Hydrological Service: What Are the Users' Requirements?
Thomas Einfalt, einfalt&hydrotec GbR, Lubeck, Germany & Bernd Maul-Kötter, Landesumweltamt Nordrhein-Westfalen, Essen, Germany

Using Urban Databases to Determine the Time of Concentration of Urban Catchments
Fabrice Rodriguez & Hervé Andrieu, Laboratoire Central des Ponts et Chaussées, Bouguenais Cedex, France

On Selection of Probability Distributions for Representing Annual Extreme Rainfall Series
Van-Thanh-Van Nguyen & Diana Tao, McGill University, Montreal, Quebec, Canada & Alain Bourque, Environment Canada, Saint-Laurent, Quebec, Canada

Accuracy of Siphoning Rain Gauges
Gery Luyckx & Jean Berlamont, University of Leuven, Heverlee, Belgium

Poster Session H

Inlet Spacing Considering the Risk Associated to Runoff: Application to Streets and Critical Points of the City of Barcelona
M. Gómez & H. Sánchez, UPC School of Engineering, Barcelona, Spain, P. Malgrat, F. Castillo & D. Sunyer, CLABSA Clavegueram de Barcelona, Barcelona, Spain & L. Nanía, Cmp. De Fuentenueva School of Civil Engineering, Granada, Spain

The Effect of Urbanization on the Drainage System in a Semiarid Environment
Jonathan B. Laronne & Ofer Shulker, Ben Gurion University of the Negev, Beer Sheva, Israel

Urban Storm Water Drainage System in the Central Part of Addis Ababa, Ethiopia: Present State and Proposals for the Improvements
D. Muschalla & M. Ostrowski, Darmstadt University of Technology, Darmstadt, Germany

Effective Drainage Plan Including Regulating Reservoir and Connecting Pipe
Yurio Nagata & Yasuhiko Nakashima, Tokyo Metropolitan Government, Tokyo, Japan

Study on Distribution and Evaluation of Stormwater Control Facilities
Mitsuo Shirahama, Tomoya Kawaguchi & Kazuhiro Asada, Nihon Suido Consultants Company, Ltd., Tokyo, Japan

Mechanism behind Manhole Cover Ejection Phenomenon and Its Prevention Measures
Satoshi Yamamoto, City of Osaka, Osaka, Japan

Rainfall Drainage: A Case Study of Cusco City
Graciela A. Camino, Universidad Nacional Autónoma de México, Paseo Cuauhnahuac, México

Study on Evaluation of Necessary Increase in Pump and Runoff Storage Capacity in the Existing Pipe Network for Flood Control using Runoff Simulation
Masaaki Tamura, Tokyo Metropolitan Government, Tokyo, Japan & Takuji Nozawa & Kaoru Kariya, Tokyo Engineering Consultants Company, Ltd., Tokyo, Japan

Poster Session I

Stormwater Pollution as Art for Public Education: The *Pollution in Abstract*™ Photography Series
Kevin G. Coulton, P.E., Philip Williams & Associates, Ltd., Portland, OR

Modeling of Urban Water Systems: Web and Internet Access to Technical Literature (Refereed and Gray) and to User Experience
W. Robert C. James, Benny C. K. Wan, Erika Ryter & William James, University of Guelph, Guelph, Ontario, Canada

Warp and Weft on Urban Drainage

Mtsuyoshi Zaiten, Takenaka Civil Engineering & Construction Company, Ltd., Tokyo, Japan

Poster Session J

Interactions within the Wastewater System: Modeling of Sewer Processes
J. G. Langeveld, F. H. L. R. Clemens & J. H. J. M. van der Graaf, Delft University of Technology, Delft, The Netherlands

Wastewater Infrastructure Technology Verification
Anthony N. Tafuri, P.E. & Raymond M. Frederick, US Environmental Protection Agency, Edison, NJ & Thomas Stevens, P.E., NSF International, Ann Arbor, MI

Poster Session K

Evaluation of Discharges by CSOs from Water Depth Measurements: Case Study of a Lateral with a Low and Long Crest
M. Zug, Vivendi Water, Saint Maurice Cedex, France, F. Blanchet, Vivendi Water, Paris, France, C. Joannis & G. Ruban, Laboratoire Central des Ponts et Chaussées, Bougenais Cedex, France & F. Cohen-Solal, Agence de l'eau Loire-Bretagne, Orléans Cedex, France

Evaluation of Discharges by CSOs from Water Depth Measurements: Case Study of a Frontal Weir with Varying Crest Elevation and Backwater Effect
Gwenaël Ruban & Claude Joannis, Laboratoire Central des Ponts et Chaussées, Bougenais Cedex, France, Mathieu Zug, Vivendi Water, Saint Maurice Cedex, France, Frédéric Blanchet, Water, Paris, France & Franck Cohen-Solal, Agence de l'eau Loire-Bretagne, Orléans Cedex, France

Research on the Repression of a Vortex to Apply a Lightweight, High-Speed, Large Capacity Pump
Tsuneto Takaso, Tsuyoshi Matsumoto & Takahiro Ito, Japan Institute of Wastewater Engineering Technology, Tokyo, Japan

Modeling of the Low Crested Prismatic Sewer Side Weir
M. Buyer & J. Vazquez, University of Strasbourg, Strasbourg, France & B. Bremond, CEMAGREF, Gazinet, France

Flow Characteristics in Manhole with Right-Angle Pipes
Shinji Arao, Kyushu University, Kitakyushu, Japan & Tetsuya Kusuda, Kyushu University, Fukuoka, Japan

A Comparison of Resistance Characteristics between U-Like and S-Like Pipes
Zhiyong Dong, Zhejiang University, Hangzhou, China & Qinghua Xu, Nanjing Hydraulic Research Institute, Nanjing, China

The Determination of Sewer Roughness and Sediment Properties using Acoustic Techniques
K. V. Horoshenkov, R. Ashley & J. Blanksby, University of Bradford, Bradford, UK

Parametric Studies on CFD Models of Sewerage Structures
Virginia R. Stovin, John P. Grimm, Adrian P. Buxton & Simon J. Tait, The University of Sheffield, Sheffield, UK

Renewal of Rectangular Culverts using the RPC Method
Junya Fukumuro, Ikuo Sugimoto & Hideaki Karasawa, Tsurumi Concrete Company, Ltd.

Monitoring of a Side Overflow Structure by Digital Cameras for a Best Knowledge of Its Hydraulic Functioning
Mohamed Khorchani, Olivier Blanpain & François Buyle-Bodin, EUDIL, Lille, France

Energy Dissipation on Stepped Fall Manholes
Stefano Pagliara & Dania Dazzini, University of Pisa, Pisa, Italy

Poster Session L

P Units Calibration for the *RTC* of Sewer Collectors using a Dimensionless Approach
Alberto Campisano & Carlo Modica, Università di Catania, Catania, Italy

Csoft: A New Software for the Design and Real Time Operation of Sewer Networks
François Grondin, Marco Grondin, Hubert Colas, Martim Pleau & Pierre Lavallée, BPR-CSO, Quebec City, Quebec, Canada

The Spanish National CSO Measurement Project (Promedsu) as a Base for Real Time Sewer Management Depending on Water Quality: Barcelona's Case
Jose Ramón Barro, Spanish Environment Ministry, Spain, Luis Ortega, INFRAECO, Madrid, Spain & Maria Salamero & Isabel Escaler, CLABSA, Barcelona, Spain

Poster Session M

Catchment-Wide Efficiency Analysis of Distributed Stormwater Management Practices: The Case Study of Bærum (Norway)
Gabriele Freni, University of Palermo, Palermo, Italy, Wolfgang Schilling, Norwegian University of Science & Technology, Trondheim, Norway & Sveinung Sægrov, Jadranka Milina & Axel König, SINTEF, Trondheim, Norway

First Flush of Organics in Highway Runoff
Sim-Lin Lau, Jiun-Shiu Ma & Michael K. Stenstrom, University of California, Los Angeles, CA & Masoud Kayhanian, University of California, Davis, CA

First Flush Phenomena for Highways: How It Can be Meaningfully Defined

Jiun-Shiu Ma, Sabbir Khan, Ying-Xia Li, Lee-Hyung Kim, Simon Ha, Sim-Lin Nau & Michael K. Stenstrom, University of California, Los Angeles, CA & Masoud Kayhanian, University of California, Davis, CA

Implication of Oil and Grease Measurement IN Stormwater Systems

Jiun-Shiu Ma, Sabbir Khan, Ying-Xia Li, Lee-Hyung Kim, Haejin Ha, Sim-Lin Nau & Michael K. Stenstrom, University of California, Los Angeles, CA & Masoud Kayhanian, University of California, Davis, CA