

CCWI2005 Presentation Schedule

Day 1: Monday 5th September 2005

08:00 - 09:30	Registration and Coffee
09:30 - 10:00	Welcome and Formal Opening of the Conference: (Newman Hall A) Vice Chancellor of Exeter University, Prof S Smith Mr R J Baty, OBE, Chief Executive of South West Water
10:00 - 10:40	Plenary Invited Lecture - Newman Hall A (Chair: Godfrey Walters) 'The Changing Role of Computer Systems in Water Management - a Supplier's Perspective' Mr D. Fortune, Director of Product Management, Wallingford Software Ltd, UK
10.40 - 11.10	Coffee
11.10 - 12.50	<p><i>Parallel Session 1: Asset Management (Peter Chalk Hall A) (Chair: Yehuda Kleiner)</i></p> <p>11.10 - Managing sewer assets through integrated data acquisition N Scarlett, J Grandison & N Rothwell</p> <p>11.30 - Analysis of water industry assets using advanced spreadsheeting A Selby</p> <p>11.50 - Estimating time to failure of ageing cast iron water mains under uncertainties B Rajani & S Tesfamariam</p> <p>12.10 - A case based reasoning approach for underground water asset management K Vairavamorthy, J Yan & N Trifunovic</p> <p>12.30 - A decision support framework for short-time rehabilitation planning in water distribution systems O Giustolisi, D Laucelli and D A Savic</p> <p><i>Parallel Session 2: Operations Management (Peter Chalk Hall B) (Chair: Petr Ingeduld)</i></p> <p>11.10 - Efficient energy management of large-scale water supply system P Bounds, J Kahler & B Ulanicki</p> <p>11.30 - Saving energy while managing demand in water delivery systems C A Diaz, B W Karney & A F Colombo</p> <p>11.50 - Encoms- An energy cost minimisation system for real-time, operational control of water distribution networks Z Rao, J Wicks & S West</p> <p>12.10 - Hydraulic reliability of pressurized water distribution networks for on-demand irrigation L Cozzolino, C Covelli, C Mucherino & D Pianese</p> <p>12.30 - Robust optimization for feedback control design of booster disinfection systems M Propato, JG Uber & O Piller</p> <p><i>Parallel Session 3: Data Management, Calibration & Monitoring of WDS (Newman Hall C) (Chair: Giovanni de Marinis)</i></p> <p>11.10 - Diagnosing error prone application of optimal model calibration Z Y Wu & T M Walski</p> <p>11.30 - Genetic Algorithms for water distribution network calibration: a real application A Borzi, E Gerbino, S Bovis & M Corradini</p> <p>11.50 - Calibration of the model of an operational water distribution system A Vassiljev, T Koppel & R Puust</p> <p>12.10 - Effect of uncertainty on water distribution system model decisions D Sumer & K Lansey</p> <p><i>Parallel Session 4: Steady-state and Transient Analysis, Modelling and Simulation (Newman Hall B) (Chair: Avi Ostfeld)</i></p> <p>11.10 - Synthesising real water distribution network performance under pressure deficiency M Hayuti & R M Burrows</p> <p>11.30 - UDF Analysis using hydraulic modeling W de Schaetzen, B Beach & T Mizuik</p> <p>11.50 - Dynamic behaviour of water networks controlled by pressure reducing valves S Prescott, B Ulanicki & J Renshaw</p> <p>12.10 - Comparison of hydraulic methods for network analysis considering head driven demand K Formiga, F Chaudry & L Reis</p> <p>12.30 - ANN architectures for simulating water distribution networks F Martínez, V Bou, V Hernández, F Alvarruiz & J M Alonso</p>
12:50 - 14:30	Lunch
14:30 - 15:30	<p><i>Parallel Session 1: Asset Management (Peter Chalk Hall A) (Chair: Mark Engelhardt)</i></p> <p>14.30 - Pipe level estimation of burst rates in water distribution mains J B Boxall, A O'Hagan, S Pooladsaz, A J Saul & D M Unwin</p> <p>14.50 - A strategy for optimal replacement of water pipes integrating structural and hydraulic indicators based on a statistical water pipe break model L Dridi, A Mailhot, M Parizeau & JP Villeneuve</p> <p>15.10 - Application of a fuzzy Markov model to plan the renewal of large diameter buried pipes: a case study Y Kleiner, B Rajani & R Sadiq</p>

	<p>Parallel Session 2: Operations Management (Peter Chalk Hall B) (Chair: Kalanithy Vairavamoorthy)</p> <p>14.30 - Optimal pump scheduling for East Bay Municipal Utility District, Oakland CA, using the Derceto package S Bunn</p> <p>14.50 - Extraction of optimal operation rules for water distribution systems using multi-objective genetic algorithms and machine learning I B Carrijo & L Reis</p> <p>15.10 - Optimal pump scheduling: Representation and multiple objectives M López-Ibáñez, T D Prasad & B Paechter</p> <p>Parallel Session 3: Data Management, Calibration & Monitoring of WDS (Newman Hall C) (Chair: Olivier Piller)</p> <p>14.30 - Sampling design for calibration of water distribution system models by genetic algorithms D Kozelj, S Šantl, F Steinman & P Banovec</p> <p>14.50 - A simple sampling design strategy for water distribution systems O Giustolisi & M Mastroianni</p> <p>15.10 - Topological GIS-based analysis of a water distribution network model. Applications of the minimum spanning tree H Bartolín, F Martínez & J Cortés</p> <p>Parallel Session 4: Steady-state and Transient Analysis, Modelling and Simulation (Newman Hall B) (Chair: Bruno Brunone)</p> <p>14.30 - Field verification of a continuous transient monitoring system for burst detection in water distribution systems M Stephens, D Misiunas, M Lambert, A Simpson, J Vítkovský & J Nixon</p> <p>14.50 - Slow transient pressure regulation in water distribution systems O Piller, G Gancel & M Propato</p> <p>15.10 - Condition assessment of water transmission pipelines using hydraulic transients D Misiunas, M Lambert, A Simpson & G Olsson</p>
15:30 - 16:10	Tea
16:10 - 17:10	<p>Parallel Session 1: Asset Management (Peter Chalk Hall A) (Chair: Alain Mailhot)</p> <p>16.10 - Water distribution system failure analysis O Giustolisi & A Doglioni</p> <p>16.30 - Wilco State of the art decision support M O Engelhardt & P J Skipworth</p> <p>16.50 - Strategic infrastructure asset management within NWL E Jennings</p> <p>Parallel Session 2: Operations Management (Peter Chalk Hall B) (Chair: Kobus van Zyl)</p> <p>16.10 - Hydraulic water quality and realtime control model of South West Moravian regional water supply system R Farmani, P Ingeduld, D A Savic, G A Walters, Z Svitak & Jan Berka</p> <p>16.30 - Combined genetic algorithm-linear programming (GA-LP) procedure applied to the operation of the Fortaleza water supply reservoir system (Brazil) L Reis & T Pinheiro</p> <p>16.50 - Reducing groundwater management costs by parallel simulation-based optimization F Thilo, U Junghans, M Grauer, S Kaden & J Hillebrandt</p> <p>Parallel Session 3: Data Management, Calibration & Monitoring of WDS (Newman Hall C) (Chair: Steven Buchberger)</p> <p>16.10 - Analysis of Parameter Uncertainty on Water quality in Distribution Systems: Unsteady conditions M F K Pasha & K Lansey</p> <p>16.30 - Yatesmeter to Optimal Real-time Control L Reynolds</p> <p>16.50 - Advanced calibration of water distribution models using the Bayesian type procedure Z Kapelan, D A Savic & G A Walters</p> <p>Parallel Session 4: Steady-state and Transient Analysis, Modelling and Simulation (Newman Hall B) (Chair: Marko Ivetić)</p> <p>16.10 - Unsteady friction models for conservative solution schemes in transient pipe flows Y Kim, A R Simpson & M Lambert</p> <p>16.30 - Coupled numerical simulation and sensitivity assessment under slow transient conditions G Gancel & O Piller</p> <p>16.50 - A 2-D approach for energy dissipation evaluation in pressurised transient flow A Berni, B Brunone & M Ferrante</p>
18:30 - 19:30	<p>Software Presentation (Peter Chalk Hall A)**</p> <p>Stuart Dodd, Wallingford Software Ltd</p>
19.30	<p>Conference Barbeque, Reed Hall, Streatham Campus, University of Exeter</p>

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Day 2: Tuesday 6th September 2005

09:00 - 09:40	Plenary Invited Lecture - Newman Hall A (Chair: Soon-Thiam Khu) 'Practical Approaches to Modelling Leakage and Pressure Management in Distribution Systems' by Mr A Lambert, International Leakage Consultant
09:50 - 10:50	<p><i>Parallel Session 1: Planning, Optimisation and Decision Support Methodologies (Peter Chalk Hall A)</i> (Chair: Orazio Giustolisi)</p> <p>9.50 - Sustainable modelling: The road from single use throw away models to ongoing operation support tools S Tomić</p> <p>10.10 - Water distribution systems optimisation and technical performance assessment P Duarte, R Farmani, H Alegre, D Savic, G Walters & J Monteiro</p> <p>10.30 - Optimizing water system improvement for a growing community Z Wu, T Walski, G Naumick, J Dugandzic & R Nasuti</p> <p><i>Parallel Session 2: Data Management, Calibration & Monitoring of WDS (Newman Hall C) (Chair: Jim Uber)</i></p> <p>9.50 - Calnet project: Building and updating water distribution models from GIS + CIS + O&M + SCADA F Martínez, V Hernández, H Bartolín, V Bou, F Alvarruiz & J M Alonso</p> <p>10.10 - Pattern matching of live data to implement proactive network management S Mustard & M Thornton</p> <p>10.30 - Optimal location of water quality sensors in supply systems by multiobjective genetic algorithms P B Cheung, O Piller & M Propato</p> <p><i>Parallel Session 3: Steady-state and Transient Analysis, Modelling and Simulation (Newman Hall B)</i> (Chair: Tiit Koppel)</p> <p>9.50 - Hydraulic transients for diagnosis of inline valves in water transmission pipelines D Misiunas, A Simpson, M Lambert & G Olsson</p> <p>10.10 - Systematic protection for worst case transient loadings in pipeline systems B Jung, B Karney & A Colombo</p> <p>10.30 - Hydraulic transients generated by bursts in a great length pipeline and study of its protection system using air valves and automatic valves V Espert, J García-Serra, J B Torregrosa & F A Zapata</p>
10:50 - 11:30	Coffee
11:30 - 12:50	<p><i>Parallel Session 1: Planning, Optimisation and Decision Support Methodologies (Peter Chalk Hall A)</i> (Chair: Lydia Vamvakieridou-Lyroudia)</p> <p>11.30 - An EXCEL-MATLAB based decision making framework and its application in urban water management S Liu, D Butler, C Makropoulos & F Memon</p> <p>11.50 - A semi-analytical approach to least-cost design of branched water distribution networks A Babayan, D A Savic & G A Walters</p> <p>12.10 - Object-oriented risk analysis of urban water infrastructure H Li, J Yan & K Vairavamoorthy</p> <p>12.30 - LEMMO: Hybridising rule indication and NSGA II for multi-objective water systems design L Jourdan, D W Corne, D Savic, G Walters</p> <p><i>Parallel Session 2: Demand, Resource & Loss Management & Forecasting (Newman Hall C)</i> (Chair: Fernando Martinez)</p> <p>11.30 - A new look at peaking factors X Zhang & S G Buchberger</p> <p>11.50 - Peak water demand for small towns C Tricarico, G de Marinis, R Gargano, A Leopardi</p> <p>12.10 - Preliminary results of water losses research in sections of Belgrade Water Supply System and developing of technical guidelines and procedures B Babić, D Prodanović & M Ivetić</p> <p><i>Parallel Session 3: Steady-state and Transient Analysis, Modelling and Simulation (Newman Hall B)</i> (Chair: Angus Simpson)</p> <p>11.30 - Extension of EPANET for pressure driven demand modeling in water distribution system P Cheung, J E Van Zyl & L Reis</p> <p>11.50 - Hydraulic power analysis of flows in water distribution network T Koppel, L Ainola & A Vassiljev</p> <p>12.10 - Modelling the Cambridge water supply system J Brock</p> <p>12.30 - Wavelet analysis of numerical pressure signals for leak monitoring M Ferrante, B Brunone, S Meniconi, C Almadori</p>
12:50 - 14:30	Lunch

14:30 - 15:30	<p><i>Parallel Session 1: Planning, Optimisation and Decision Support Methodologies (Peter Chalk Hall A)</i> (Chair: Slobodan Simonovic)</p> <p>14.30 - Optimal valve location in rehabilitation and design of pipe networks using a scatter search metaheuristic procedure S Liberatore & G Sechi</p> <p>14.50 - Rehabilitation scheduling of water distribution systems based on multi-objective genetic algorithms S Alvisi & M Franchini</p> <p>15.10 - A multiobjective optimisation approach for the rehabilitation of hydraulic networks under uncertain demands C Tricarico, Z Kapelan, D Savic & G de Marinis</p>
	<p><i>Parallel Session 2: Demand, Resource & Loss Management & Forecasting (Newman Hall C) (Chair: Allan Lambert)</i></p> <p>14.30 - Evaluation of unaccounted for water and real losses in water distribution networks by hydraulic analysis of the system considering pressure dependency of leakage M Tabesh, A H Asadiani Yekta & R Burrows</p> <p>14.50 - The effect of pressure on leakage in water distribution systems J E van Zyl & C R I Clayton</p> <p>15.10 - Leakage reduction and customer level of service improvement by pressure management N Dias, D Covas & H Ramos</p>
	<p><i>Parallel Session 3: Water quality modelling, Performance, Security & Reliability (Newman Hall B)</i> (Chair: Franci Steinman)</p> <p>14.30 - Structural integrity and water quality in water distribution networks D M Cook, J B Boxall, S J Hall & E Styan</p> <p>14.50 - Water quality modelling by numerical solution of ADE using an integrated model S M Kashefipour, A A Tavakoli & R A Falconer</p> <p>15.10 - A methodology for pollution source location in water distribution system C Di Cristo, A E De Sanctis & A Leopardi</p>
15:30 - 16:10	Tea
16:10 - 17:10	<p><i>Parallel Session 1: Planning, Optimisation and Decision Support Methodologies (Peter Chalk Hall A)</i> (Chair: Maria da Conceição Cunha)</p> <p>16.10 - Fuzzy approach to the uncertainty analysis of the water distribution network of Becej N Branislavljevic & M Ivetic</p> <p>16.30 - Fuzzy DSS model for water network design optimisation L S Vamvakieridou-Lyroudia, G Walters and D Savic</p> <p>16.50 - A mixed optimization-simulation technique for complex water resource systems analysis G M Sechi & A Sulis</p> <p><i>Parallel Session 2: Demand, Resource & Loss Management & Forecasting (Newman Hall C)</i> (Chair: Luisa Fernanda R. Reis)</p> <p>16.10 - Uncertainties of leak detection by means of hydraulic transients from the lab to the field D Covas, H Ramos, A Young, N Graham & C Maksimovic</p> <p>16.30 - Frequency-domain hypothesis testing approach to leak detection in a single fluid line A C Zecchin, L B White, M F Lambert & A R Simpson</p> <p>16.50 - A numerical investigation into the behavior of leak openings in UPVC pipes under pressure A M Cassa, J E van Zyl, & R F Laubscher</p> <p><i>Parallel Session 3: Water quality modelling, Performance, Security & Reliability (Newman Hall B)</i> (Chair: Richard Burrows)</p> <p>16.10 - Discolouration Risk Modelling N Dewis & M Randall-Smith</p> <p>16.30 - An evidential reasoning approach to evaluate intrusion vulnerability in distribution networks R Sadiq, Y Kleiner & B Rajani</p> <p>16.50 - Quality optimisation models in water networks R Pérez, J Quevedo, A Gil, G. Cembrano, V Puig & J Figueras</p>
19.30	<p>Gala Dinner Devonshire House, Streatham Campus, University of Exeter</p>

CCWI2005 Presentation Schedule

Day 3: Wednesday 7th September 2005

09:00 - 10:00	Plenary Invited Lecture - Newman Hall A (Chair: Dragan Savic) ‘Water for the World - Why is it so Difficult?’ Mr J K Banyard, OBE, formerly Director of Asset Management, Severn Trent Water Ltd., UK
10:10 - 11:10	<i>Parallel Session 1: Planning, Optimisation and Decision Support Methodologies (Peter Chalk Hall A)</i> (Chair: Manuel Malafaya-Baptista) 10.10 - An ant colony non-dimensional algorithm for water distribution systems optimal design and operation A Ostfeld & A Tubaltzev 10.30 - Simulated annealing reaches "Anytown" J Sousa, M Cunha & J Almeida Sá Marques 10.50 - Optimal design of water distribution systems using cross entropy L Perelman &, A Ostfeld
	<i>Parallel Session 2: Urban Drainage & Data Management, Calibration & Monitoring of WDS (Peter Chalk Hall B)</i> (Chair: Ole Mark) 10.10 - Modelling floodwater in urban drainage E J Gill & R D Aradas 10.30 - FastNett optimised flooding solutions R Long & S Hogg 10.50 - Transition rule configuration for cellular automata based optimal sewerage design G Yufeng, G Walters, S-T Khu & E Keedwell
	<i>Parallel Session 3: Demand, Resource & Loss Management & Forecasting (Newman Hall C) (Chair: Bogumil Ulanicki)</i> 10.10 - Adaptive feedback regulation of water pressure G E Chamilothis & F Repoulas 10.30 - A web-based water resources simulation and optimization system K Fedra & N Harmancioglu 10.50 - Operative control of outflows from system of reservoirs during the flood passage M Stary, P Dolezal & H Kralova
	<i>Parallel Session 4: Water quality modelling, Performance, Security & Reliability (Newman Hall B)</i> (Chair: Zoran Kapelan) 10.10 - Automated critical asset analysis (CAA) T Merrifield 10.30 - Improving the electronic security of water control systems P Davis 10.50 - Optimal allocation of monitoring stations aiming at an early detection of intentional contamination of water supply systems L Cozzolino, C Mucherino, D Pianese & F Pirozzi
11:10 - 11:30	Coffee

11:30 - 12:50	<p><i>Parallel Session 1: Urban Drainage & Data Management, Calibration & Monitoring of WDS (Peter Chalk Hall B)</i> (Chair: Murray Dale)</p> <p>11.30 - Realtime control of sewer systems developing solutions for the water industry D M Unwin, A J Saul</p> <p>11.50 - Aspects and effectiveness of real-time control in urban drainage systems combining radar rainfall forecasts, linear optimization and hydrodynamic modelling H Verworn & S Krämer</p> <p>12.10 - Sewer flooding register development: Building on the present to fulfil the future J Perriam, M Roden & N Muggeridge</p> <hr/> <p><i>Parallel Session 2: Demand, Resource & Loss Management & Forecasting (Newman Hall C) (Chair: Rudi Gargano)</i></p> <p>11.30 - A methodology to assess current and past municipal surface water supply vulnerabilities: An application to Quebec municipalities È Nantel, A Mailhot, A N Rousseau & J P Villeneuve</p> <p>11.50 - Water resources allocation management as an alternative solution of the water shortage problem in Libya E Wheida & R Verhoeven</p> <p>12.10 - Assessing the risk of water supply in drought prone areas M Genco, C Arena & M R Mazzola</p> <hr/> <p><i>Parallel Session 3: Water quality modelling, Performance, Security & Reliability (Newman Hall B)</i> (Chair: Sergio Coelho)</p> <p>11.30 - Assessing the spatial distribution of pressure head in municipal water networks I Pallavicini, R Magini, R Guercio</p> <p>11.50 - Water supply looped systems design. Pipe failure and pressure distributions. Pressure restrictions and design procedures. M Malafaya-Baptista</p> <p>12.10 - Quantifying the performance of water distribution system as a result of failure M A M Mansoor, S D Gorantiwar & K Vairavamoorthy</p> <p>12.30 - Investigation of burst-prediction formulas for water distribution systems by evolutionary computing L Berardi, D Savic & O Giustolisi</p>
12:50 - 13.10	Plenary Session - Newman Hall A Conference Review and Formal Closure
13.10 - 14:30	Lunch