

WWTmod2008

1st IWA/WEF Wastewater Treatment Modelling Seminar
Mont-Sainte-Anne, Quebec, Canada

Final Program

Sunday, 01 June 2008

Morning

08:30 – 08:45 Welcome by Leiv Rieger (Chair Scientific Committee)

- Philosophy behind WWTmod
- Word by Réseau Environnement and CAWQ

08:45 – 09:00 Opening speech by Paul Reiter, IWA's Executive Director

09:00 – 10:00 Workshop session I

1. *Modelling accuracy: dealing with uncertainties* (Workshop chair: Evangelina Belia)
2. *Recent advances in clarifier modeling* (Workshop chair: David J. Kinnear)
3. *Anaerobic digestion modelling – Current Practice and Areas for Development* (Workshop chair: Damien J. Batstone)
4. *Integrating biofilm models into whole wastewater treatment plant simulators: Expectations, applicability, accuracy, and future improvements* (Workshop chair: Joshua P. Boltz)
5. *Towards practical guidance for wastewater treatment modeling studies – Draft guidelines from the IWA Good Modelling Practice task group* (Workshop chair: Leiv Rieger)

10:00 – 10:30 Coffee break

10:30 – 12:00 Workshop session I cont'd

12:00 – 13:30 Lunch

Afternoon

13:30 – 15:00 Workshop session II

6. *Models in teaching and training* (Workshop chair: Thomas Hug)
7. *Towards commonality in wastewater characterization for activated sludge modeling* (Workshop chair: Henryk Melcer)
8. *Challenges in membrane bioreactor modelling* (Workshop chair: JB Neethling)
9. *Use of plant-wide models in WWTP design – >From steady-state to dynamic models* (Workshop chair: Jose A. Jimenez)
10. *Experience with models and knowledge-based systems for plant operations* (Workshop chair: Oliver Schraa)

15:00 – 15:30 Coffee break

15:30 – 16:30 Workshop session II cont'd

16:30 – 17:30 Report preparation (workshop chairs)

18:30 RECEPTION on top of the Mont-Sainte-Anne and DINNER at the hotel

Monday, 02 June 2008

08:00 – 08:15 Seminar information

Session 1 (Moderator: Gustaf Olsson)

08:15 – 09:15 Reports from workshops

09:15 – 09:30 Break

09:30 – 10:30 Reports from workshops cont'd

10:30 – 11:00 Coffee break

Session 2 (Moderator: Jean-Philippe Steyer)

11:00 – 12:30 Nitrite modelling

Gürkan Sin, David Kaelin, Marlies J. Kampschreur, Imre Takács, Bernhard Wett, Krist V. Gernaey, Leiv Rieger, Hansruedi Siegrist and Mark C.M. van Loosdrecht
Modelling nitrite in wastewater treatment systems: A discussion of different modelling concepts

Ron J. Latimer, Paul Pitt, Peter Dold, Imre Takács, T.J. Lynch
Kinetic parameters for modeling two-step nitrification and denitrification – Case study

12:30 – 14:00 Lunch

Session 3 (Moderator: Andrew R. Shaw)

14:00 – 15:30 Whole plant methodologies

Paloma Grau, John B. Copp, Peter A. Vanrolleghem, Imre Takács and Eduardo Ayasa
A comparative analysis of different approaches for integrated WWTP modelling

John B. Copp, Ulf Jeppsson, Marie-Noelle Pons, Ingmar Nopens, Jens Alex, Krist V. Gernaey, Christian Rosen, Jean-Philippe Steyer and Peter A. Vanrolleghem
Benchmark Simulation Model No 2 – General protocol and advances in modelling application

15:30 – 16:00 Coffee break

Break-out sessions

16:00 – 17:30 (Topics will be announced during lunch break)

19:00 SURPRISE DINNER

Tuesday, 03 June 2008

08:15 – 08:30 Seminar information

Session 4 (Moderator: Eberhard Morgenroth)

08:30 – 10:00 Metabolic models

Jorge Rodriguez-Rodriguez, Giuliano C. Premier, Alan J. Guwy, Richard Dinsdale and Robert Kleerebezem
Metabolic models to investigate energy limited anaerobic ecosystems

Bernard A. Lavallée, Dominique Frigon, Paul Lessard, Peter A. Vanrolleghem, Zhiguo Yuan and Mark C.M. van Loosdrecht
Modelling using rRNA-structured biomass models

10:00 – 10:30 Coffee break

Session 5 (Moderator: Kim Helleshøj Sørensen)

10:30 – 12:30 Activated sludge model extensions

Jens Alex, Sabine G.E. Rønner-Holm and Nils C. Holm
Lag phase, dynamic alpha factor and ammonium adsorption behaviour – Introduction of special activated sludge characteristics in the ASM3+EA-WAG-BioP-model

Volker Spering, Jacek Makinia and Karl-Heinz Rosenwinkel
Analyzing and improving a mechanistic model for the Microthrix parvicella in activated sludge systems

Simone Lippi, Diego Rosso, Claudio Lubello, Roberto Canziani and Michael K. Stenstrom
Temperature modelling and prediction for activated sludge systems

12:30 – 14:00 Lunch

Session 6 (Moderator: Joshua P. Boltz)

14:00 – 15:00 Reports from Monday's Break-out sessions

15:00 – 15:30 Coffee break

Session 7 (Moderator: Sudhir Murty)

15:30 – 17:00 Use of models in consultancy

John B. Copp, Bruce R. Johnson, Andrew R. Shaw, Marie S. Burbano, B. Narayanan, Kevin Frank, Dave J. Kinnear, Henryk Melcer, Ken Brischke
A balancing act: The consulting engineers' pragmatic view of process modelling

Libor Novák
Simplified mathematical model calibration technique: Experience and application at Prague Central Wastewater Treatment Plant (short presentation)

Heather M. Phillips, Kristian E. Sahlstedt, Kevin Frank, John Bratby, Bill Brennan, Steve Rogowski, David Pier, Wendy Anderson, Michela Mulas, John B. Copp, Nick Shirodkar
Wastewater treatment modelling in practice: A collaborative discussion of the state of the art (short presentation)

17:00 – 17:30 Summary of WWTmod2008 (Peter A. Vanrolleghem)

19:00 GALA DINNER at restaurant L'Astral in Quebec City

Posters

Case studies

- Sabine G.E. Rönner-Holm, Inka Kaufmann Alves, Heidrun Steinmetz and Nils C. Holm
Optimisation potential for a SBR plant based upon integrated modelling for dry and wet weather conditions
- Ed Becker, Jennifer Phillips, Sam Jeyanayagam, Susan Landon, Elizabeth Widmeyer, Joe Husband and Don Cruden
Process modeling for design and optimization of wet weather treatment
- Cheikh Fall, Jimmy Loaiza-Navia and Mario Esparza Soto
Full ASM1 calibration experience at a medium-size WWTP in Mexico
- Cory D. Lancaster
An optimization method for the MLE process using modelling
- Christine deBarbadillo, Peter Schauer, Andrew R. Shaw and Baneeta Sabherwal
Application and comparison of dynamic models to assess impact of loading variations on performance of denitrification filters
- Yuan Fang, Art K. Umble, Edward J. Cronin, Hank Andres, Robert C. Steidel and Clair Watson
Process simulation of wet weather performance for the Richmond WWTP

Topic Teaser

- Constructed Wetlands:** Günter Langergraber, Diederik Rousseau, Joan Garcia and Javier Mena
Simulation of anaerobic processes in subsurface flow constructed wetlands
- Mixing Effects:** Joana Patrícia Pereira, Anna Karpinska, António Augusto Martins, Madalena Maria Dias and Ricardo Jorge Santos
Study of mixing effects on simulation results for ASM
- Micropollutants:** Monica Schönerklee, Momchil Peev, Heleen De Wever, Thorsten Reemtsma and Stefan Weiss
Experimental parameter estimation in extended biokinetic degradation models for micropollutants (NDSA and BTSA)
- Kinetics:** Ronald L. Droste
Kinetic formulations for growth and substrate uptake in biological wastewater treatment
- Microbial Fuel Cells:** Jorge Rodríguez-Rodríguez, Damien J. Batstone, Zhiguo Yuan and Korneel Rabaey
A mechanistic model for bioelectrochemical systems