1D and 2D water systems and watershedmodelling with US EPA SWMM5 and PCSWMM Europe London, United Kingdom

Date: **November 18&19, 2013**

Location: **Imperial CollegeLondon**

Content

This**2-DayUS EPA SWMM5 and PCSWMM Europe workshop** provides an introduction to stormwatersystems modelling, flood mapping/risk analysis and real-time flood forecasting with these two state-of-the-art programs. You will learn how to use the software to analyze and manage drainage systems of all types. You will understand how to apply the model to solve existing problems such as flooding and water quality issues as well as to design new drainage systems. In addition to background theory and a software overview, a variety of hands-on, real-world, exercises and demonstrations will be presented, including 1D-2D urban flood modelling, integrated watershed modelling, real-time flood forecasting, calibration and error analysis. Major themes presented include:

Urban drainageand water quality analysis

Analysis of major and minor drainage system components for urban drainage applications including pipe flow, street flow, and stormwater ponds. Estimate pollutant loadings and transport for both rural and urban applications. Sensitivity analysis and model calibration.

Importing HEC RAS models

Analysis and importing HEC RAS models within PCSWMM for river and hydraulic structures modelling in rural and urban area.

2D modelling

Integrated 1D-2D modelling for overbank flooding from rivers/stream in urban areas and flooding in dual drainage systems (urban stormwater collection system piping and urban flood prevention system). Applications include real-world flood risk modelling of urban areas.

Software

US EPA Stormwater Management Model (SWMM) is an open-source, comprehensive model for continuous and single-event simulation of runoff quantity and quality for urban, rural and watershed drainage, including detailed analysis of stormwater, sanitary, and combined sewer systems. It can model: dynamic storms; pollutant build-up, washoff and transport; infiltration

and inflow; dynamic routing through rivers, channels and pipes; surcharging, surface flooding; storage ponds; culverts and bridges; storage treatment; diversions; pumping stations; various green infrastructure (GI), best management practices (BMPs) and low impact developments (LIDs); and much more. Established and continuously developed for 40 years, US EPA SWMM is simple to run, and is used effectively on small as well as large studies

PCSWMMis the most widely adopted spatial decision support system for US EPA SWMM5 modelling. Incorporating a modern, powerful GIS engine compatible with the latest GIS data formats, PCSWMM provides intelligent tools for streamlining model development, optimization and analysis in a comprehensive range of applications. With full support for the latest US EPA SWMM5 hydrology/hydraulics engine, PCSWMM provides a scalable (unlimited model sizes), and complete array of professional urban and watershed drainage system modelling tools for a competitive and affordable price. PCSWMM has a long development history (more than 25 years) and has been applied to more than 10,000 modelling projects in over 70 countries. There have been many enhancements to the software and improvements made in modelling practices.

PCSWMM Europe includes specificities for the European countries (design storm, rainfall-runoff modelling). Our latest version of PCSWMM Europe 2D provides a completely integrated approach to 2D modelling, allowing the user to seamlessly transition back and forth between 1D and 2D modelling.

Who should attend?

This workshop is multi-disciplinary and is designed for all who have a direct stake in stormwater management, flood management, non-point source pollution or the modelling of urban water systems. Attendees include: civil and environmental engineers; landscape engineers and architects; aquatic biologists, ecologists, fluvial geomorphologists and other scientists; urban geographers, and policy makers; professionals from municipal and government engineering; public works personnel; consultants; and instructors, researchers and graduate students at universities and research institutes. Participants should have some understanding of hydrology and hydraulics, as well as modelling concepts.

Instructors

Nelly PEYRON, M.A.Sc,P.Eng., CEO of HydroPraxis the company that is distributing PCSWMM Europe. She has 14 years of experience in hydrology and hydraulics modelling. Over the past 5 years, she has worked at HydroPraxis as a professional engineering consultant on a wide variety of urban and watershed drainage management projects, and as a trainer in water systems modelling. She has been part of the creation and development of PCSWMM Europe as well as the 2D module, from 2008 to the current PCSWMM 2013 release.She is a professor in many engineering schools in France and is associatedprofessor at EPF, Montpellier, France. Nelly is devoted to hydrologic and hydraulic modelling, both 1D and 2Dand has worked on many complex systemsmodelling and floodrisk consulting projects in France, Europe (Hungary, Sweden, Switzerland, Spain, Italy…) and all over the world (Canada, India, Samoas…).

Mark RANDALL,M.A.Sc, is the most recent addition to the Computational Hydraulics International (CHI) team. He completed his Master's degree in Water Resources Engineering at the University of Guelph in Canada where his research focused on the hydraulic and water

quality performance of bioretentioncells. Before joining CHI, Mark worked in Denmark, modelling the impacts of stormwater infiltration practices and climate change on urban groundwater tables. He has also worked on water quality mapping projects in Cambodia and New Zealand. Since joining CHI at the beginning of 2013, Mark has worked ondeveloping drainage models for numerous urban catchments across Canada, and has also been involved with PCSWMM training,technical support and workshop exercise development.

Cost,Registration and Location

Price:

The cost of the workshop is**£450**for one day or**£700** for both days.

Full time students can register for**£60** per dayor**£100** for both days.

The registration price includes a 60-day trial licence of the PCSWMM Europe software, the digital Urban Drainage Modelling Workbook as well ascatered lunch and tea/coffee breaks.

Day 1: Introduction to water systems and watershedmodelling using SWMM5/PCSWMM
Monday, November 18, 2013

The first day of theworkshop will focus on topics including: PCSWMM / SWMM5 theory and applied cases, modelling urban drainage infrastructure, SUDS modelling and model calibration.

Day 2 :Advanced and 2Dmodelling using SWMM5/PCSWMM
Tuesday, November19, 2013

The second day of the workshop will focus on topics including: 2D flood modelling, real-time flood forecasting and incorporating HEC-RAS models into SWMM5 models.Day 2 may be attended without attending Day 1 if registrant has previous modelling experience.

Requirements

Each participant will be required to bring their own laptop and will be responsible for their own accommodation. Laptops should have Windows XP, Vista, 7 or 8 operating system and have a minimum of 50GB free disk space and a minimum screen resolution of 1600 pixels in width. Software will be installed by you on your laptop and activated prior to the workshop. Activation requires Internet access. Exercise files will be installed on your laptop during the workshop from a USB flash drive.

Training Location

Training will take place on the South Kensington Campus of Imperial College London.

Workshop hosted by:

The Civil and Environmental Engineering Department at Imperial College London (http://www3.imperial.ac.uk/ewre)

HydroPraxis
(http://www.hydropraxis.com/en/)

ComputationalHydraulics Int.
http://www.chiwater.com/

Registration

Workshop seats are limited and will be filled on a first-come, first-served basis.The deadline for registration isNovember 10, 2013.

For more information about the course outline please visit our workshop page.Once your online registration is complete you will receive a follow up email, closer to the time of the event you will receive additional details on the venue and workshop information. If you have any questions or comments, please do not hesitate to contact me directly at meghan@chiwater.com.

Please take a moment to forward this to a colleague. Thank you and we look forward to seeing you there.

Sincerely,

Meghan Korman
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