

Free-to-attend one-day Workshop on



Modelling Mixing Mechanisms in 1D Water Network Models



“An interesting day of talks, providing a state-of-the-art review of the challenges and opportunities relating to mixing processes”

16th January 2018

The Diamond, University of Sheffield

This Workshop will feature state-of-the-art presentations from a range of academics and practitioners concerned with mixing processes. The talks will encompass laboratory, field and numerical methods and highlight challenges associated with understanding and modelling mixing processes.

The event is aimed at academic researchers, water quality modellers, and practitioners with real-life mixing problems. Attend the meeting to:

- Hear reviews of current practice and discussions on future challenges
- Gain an overview of the Fellowship objectives
- Suggest additional areas of interest
- Offer interesting case studies

This event is being held to launch a 5-year EPSRC Fellowship awarded to Professor Ian Guymer. The aims of the Fellowship are to quantify physical flow processes and to develop new approaches for describing solute mixing processes within 1D numerical network models. The Fellowship will integrate numerical analysis, with focussed laboratory and field studies, providing unique data. This will quantify fundamental residence time distributions (RTDs) to more accurately describe the mixing mechanisms present within hydraulic networks. It integrates knowledge across several research fields to address a major societal concern: the occurrence of contaminants in water systems.

Register at: <https://www.eventbrite.com/e/modelling-mixing-mechanisms-workshop-tickets-39291252193>



Preliminary Programme

09:00 to 09:20 hrs Registration & Refreshments

Welcome

Professor Ian Guymer, University of Sheffield

Understanding water: a consumer company perspective

Dr Roger Van-Egmond, Unilever

RPS – clean, river and sewer assessments

Margaret Williams, Clear/RPS

USEPA's water quality modelling research program: a perspective on the development of EPANET

Dr Robert M. Clark, USEPA-retired, USA

Mixing in municipal water distribution systems

Professor Steve Buchberger, University of Cincinnati, USA

Innovation in water quality hydraulic modelling in Severn Trent Water

Chris Gilbert & Oliver Baldock, Severn Trent Water

11:00 to 11:20 hrs Refreshments

From rivers to pipes: could mixing be the link?

Professor Joby Boxall, University of Sheffield

River mixing processes & models

Soo Yeon Choi, Seoul National University, South Korea

Dispersion in rivers

Dr Steve Wallis, Heriot-Watt University

Mixing things up: which process am I modelling?

Dr Barry Hankin, JBA

Integrated catchment modelling - a pragmatic approach

Dr Karen Murrell, WRc

12:40 to 13:30 hrs Lunch

Urban drainage modelling – bridging the gap between engineering science and strategy

Dr Phil Hulme, Environment Agency

Management of water networks with limited understanding

Dr Jonathan Cutting, WSP

Mixing in complex urban drainage structures – the use of 3D computational fluid dynamics (CFD)

Dr Virginia Stovin, University of Sheffield

Experimental work on multi-phase flows in urban drainage and the importance of mixing phenomena

Professor Francois Clemens, TU Delft/Deltares, Netherlands

DHI modelling of mixing in urban drainage systems

Dr Ole Mark, DHI, Denmark

15:10 to 15:30 hrs Refreshments & Suggestions

The need for mixing models in 1-D drilling simulators, background and future visions

Dr Johnny Petersen, IRIS, Norway

3D CFD analysis of transient turbulent pipe flow

Dr Yongmann Chung, University of Warwick

Tools and approaches for systems mixing

Professor Mike Chappell, University of Warwick

Discussion

Professor Ian Guymer, University of Sheffield

17:00 hrs

Close of meeting