

A decorative graphic of a water splash with bubbles and light reflections, positioned at the top and right sides of the slide.

Workshop: Computational Fluid Dynamics - Hands-on CFD Modeling for Water Resource Recovery Facilities

**Sponsored by the IWA Working Group for
CFD**

Watermatex 2015

14 - 17 June 2015

Gold Coast, Queensland, Australia

**9th IWA Symposium on Systems
Analysis and Integrated Assessment**

Workshop Schedule

Day 1

Day / Time	Speaker	Topic Description
Day 1 / 13:00 to 17:00		Afternoon Session
13:00 to 13:05	Damien Batstone	Welcome and introductions Workshop overview and objectives
13:05 to 13:30	Randal Samstag	Introduction to CFD: Fundamentals
13:30 to 14:00	Julien Laurent	CFD for Wastewater: Good Modelling Practice
14:00 to 14:30	Jim Wicks Ingmar Nopens	CFD for Wastewater Case Studies: Hydraulics, DAF, Digesters, Biokinetics,
14:30 to 15:00	Randal Samstag	CFD for Wastewater Case Studies: Sedimentation, Mixing, and Disinfection
15:00 to 15:30		Afternoon Tea
15:30 to 17:00	Nelson Marques	Introduction a) What is OpenFOAM b) OpenFOAM installation (blueCFD in case of windows) c) overview of installed software packages

Workshop Schedule

Day 2 Morning

Day 2 / 9:00 to 13:00	Speaker	Morning Session
9:00 to 10:00	Nelson Marques	Getting Started a) overview of OpenFOAM installation and its work method b) Run of simple case for basic view of operations, from mesh generation to post-processing (Paraview)
10:00 to 11:00	Nelson Marques	Meshing a) Available meshers b) blockMesh c) snappyHexMesh i) Surface preparation and import ii) Background mesh iii) Mesh parameters: volumetric, surface d) Visualisation
11:00 to 11:30		Morning Tea
11:30 to 13:00	Nelson Marques	Solvers and boundary conditions a) Relevant solvers b) Boundary conditions c) Convective term discretization d) Diffusive term discretization e) Linear system solvers f) Parallel runs
13:00 to 14:00		Lunch

Workshop Schedule

Day 2 Afternoon

Day / Time	Speaker	Topic Description
Day 2 - 14:00 to 17:00		Afternoon Session
14:00 – 16:00 (with short tea break)	Nelson Marques	Hands-on cases (2 hours) a) Open water surface b) UV radiation c) Settling
16:00 to 16:30	Nelson Marques	Additional topics on OpenFOAM (30 minutes) a) Additional sources of information b) OpenFOAM community c) GUI's
16:30 to 16:45	Damien Blackstone	Closure