

Wednesday 6th September

Registration 12.30-13.30

Welcome from organisers 13.35-13.45

Prof Sarah Waters 13.45-14.30

Fluid dynamical models for tissue engineering

Plenary Session 1

Session 1 (A) Biological Flows

Time/Talk Number	Authors	Talk Title
14.40 29	Oliver Jensen and Feng Xu	Trapping and displacement of liquid collars and plugs in rough-walled tubes
14.53 3	Sean Guo-Dong Tan and Hwa Liang Leo	Jet-wall interaction: a critical factor in physiological left ventricular vortex formation
15.06 101	Benjamin Owen, Adrian Harwood, Nicholas Bojdo, Bernard Keavney and Alistair Revell	Fluid-structure interaction modelling of cardiovascular applications using lattice Boltzmann, immersed boundary method and v-model.
15.19 79	Lee Nissim, Robert Hewson, Connor Myant, Leiming Gao and Hamza Butt	Modelling synovial fluid rheology in elasto-hydrodynamic lubrication
15.32 20	Arshad Kamal and Eric Keaveny	Micro-scale undulatory locomotion in heterogeneous viscoelastic environments
15.45 133	David Nesbitt, Gunnar Pruessner and Chiu Fan Lee	Stokes flow in active fluids: cylinders and spheres

Tea/Coffee 16.00-16.30

Session 3 (A) Microflows

Time/Talk Number	Authors	Talk Title
16.30 1	Richard Y. Q. Fu, Jack K Luo, Zhefeng Lei, Sameer Hasan, Yifan Li and Glen McHale	Acoustic wave microfluidics is now flexible, bendable and potentially wearable
16.43 45	Petr Kungurtsev and Matthew P. Juniper	Adjoint-based shape optimization for inkjet printheads
16.56 26	Idris Adebayo, Zhizhao Che and Omar Matar	Droplet impact on controlled flowing liquid films
17.09 109	Andrew Edwards, Patrick Atkinson, Rebecca Hill, Sammy Cheung, Haida Liang, David Fairhurst and F Fouzia Ouali	Optical coherence tomography of evaporating droplets of volatile liquids laden with micro-particles
17.22 127	Stephen Wilson, Brian Duffy and Fatemah Al Mukahal	Dispersion in rivulet flow
17.35 88	Merlin A. Etzold, Julien R. Landel and Stuart B. Dalziel	Decontamination of chemicals in the cracks of building materials

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Plenary Session 1

Session 2 (B) Wind and Structures

Time/Talk Number	Authors	Talk Title
14.40 94	Manuel A. Ferreira, Robert J. Hearst and B. Ganapathisubramani	Impact of turbulent fluctuations and mean shear on power output of a model wind turbine
14.53 24	Mustafa Al-Guburi, Andrew Shires and Carl Gilkeson	CFD Study of the NREL Phase VI Wind Turbine
15.06 130	Ali Farhan, Ali Hassanpour, Alan Burns and Yousef Motlagh	Numerical Study of Effect of Winglet Planform on a Horizontal Axis Wind Turbine Performance
15.19 17	Nikolaos Lagopoulos, Gabriel Weymouth and Bharathram Ganapathisubramani	Optimization of the kinematic parameters of flapping hydrofoils in a tandem configuration
15.32 87	Joseph Banks, Laura Marimon Giovannetti, Stephen Boyd and Stephen Turnock	Experimental Fluid Structure interaction data for a flexible aerofoil
15.45 43	Samuel Shelley, Roy Sambles, Alastair Hibbins, Simon Horsley and John Smith	Flow Control Behind Bluff Bodies through the Interaction of a Resonant Flexible Tail

Tea/Coffee 16.00-16.30

Session 4 (B) Boundary layers

Time/Talk Number	Authors	Talk Title
16.30 113	Philip Hall	Distributed exact coherent structures and the emergence of the law of the wall
16.43 39	Emma Cooke, Shahid Mughal, Spencer Sherwin and Richard Ashworth	Modelling the effects of disturbance modification due to surface excrescences on wing performance.
16.56 132	Dandan Xiao and George Papadakis	Nonlinear optimal control of bypass transition in a boundary layer flow
17.09 11	Anthony Williams	Short-scale injection into a boundary layer driven by a favourable pressure gradient
17.22 89	Francois J. Peaudecerf, Julien R. Landel, Raymond E. Goldstein and Paolo Luzzatto-Fegiz	Role of surfactant in increasing drag over superhydrophobic surfaces
17.35 121	Ahmed Daimallah, Mohamed Lebbi and Ahcene Bouabdallah	Improvement of the transition to Taylor vortex flow using grooved walls

Reception and Posters 17.55 - 19.00

Thursday 7th September

Plenary Session 2 Prof David Dritschel 09.00 - 09.45

A simple, efficient numerical method for modelling moist convection

Session 5 (A) Geophysical Fluid Dynamics

Time/Talk Number	Authors	Talk Title
09.55 58	Daria Frank, Julien Landel, Stuart Dalziel and Paul Linden	Precession of a plume in a rotating environment
10.08 90	Thomas Goodfellow, David Hughes, Stephen Griffiths and Peter Jimack	Stability of fingering modes in oscillatory double-diffusive convection
10.21 48	Will Booker, Onno Bokhove and Mark Walkley	Internal wave attractors in stratified fluids
10.34 110	Godwin Madho, Steven Tobias, Chris Jones, Sven van Loo and Wayne Arter	Using data assimilation techniques to validate fluid flow models

Tea/Coffee 11.00-11.30

Session 7 (A) Jets and Channels

Time/Talk Number	Authors	Talk Title
11.30 8	Vasilis Ioannou and Sylvain Laizet	Numerical investigation on mixing enhancement in plasma-controlled turbulent jets
11.43 14	Massimiliano Breda and Oliver R. H. Buxton	Effect of initial conditions onto the macro and micro structure of an axisymmetric turbulent jet
11.56 35	Girish Jankee and Bharathram Ganapathisubramani	Influence of nozzle geometry on performance of Synthetic Jets
12.09 23	Tim Berk and Bharathram Ganapathisubramani	Vortex-induced momentum deficit of a synthetic jet in crossflow
12.22 78	Matteo de Giovanetti and Yongyun Hwang	The role of streak instability for the formation of vortical structures in the logarithmic layer of turbulent channel flow.

Lunch 12.35 - 13.10

Reception and Posters 17.55 - 19.00

Thursday 7th September

Plenary Session 2 Prof David Dritschel 09.00 - 09.45

A simple, efficient numerical method for modelling moist convection

Session 6 (B) Multiphase flow/experimental methods

Time/Talk Number	Authors	Talk Title
09.55 112	Susanne Hoellbacher and Gabriel Wittum	A stable second order immersed boundary method for interface problems with application to multiphase flow
10.08 63	Georgina Williams, G.M. Keevil, J. Peakall, R.E. Thomas and M. Fairweather	Fluidisation Pipe Dynamics: an experimental approach
10.21 30	Javor K. Novev, Shaltiel Eloul and Richard G. Compton	Influence of reaction-induced thermal convection on the electrical currents measured in chronoamperometry and cyclic voltammetry
10.34 9	Luming Fan, Yi Gao, Akihiro Hayakawa and Simone Hochgreb	Simultaneous, two-camera, 2D gas-phase temperature and velocity measurements by thermographic particle image velocimetry with ZnO tracers
10.47 95	Ijhar H. Rusli, Svetlana Aleksandrova, Humberto Medina and Stephen F. Benjamin	Mean velocity measurements of a confined swirling flow in an annular conduit using hot-wire anemometry

Tea/Coffee 11.00-11.30

Session 8 (B) Engines and Combustion

Time/Talk Number	Authors	Talk Title
11.30 4	Christopher Price, Arash Hamzehloo, Pavlos Aleiferis and David Richardson	Numerical modelling of flash-boiling fuel sprays in Direct-Injection Spark-Ignition engines
11.43 25	Inna Gorbatenko	Investigation of the autoignition properties of methane/air fuel and its propensity to engine knocking.
11.56 59	Yu Xia, Davide Laera, Ignacio Duran, Aimee S. Morgans and Xingsi Han	Dispersion of entropy perturbations transporting through realistic gas turbine combustor flow-fields
12.09 56	Jose G. Aguilar and Matthew P Juniper	Shape optimization in low-order thermoacoustic networks
12.22 22	Robert Miller, Paul Griffiths and Stephen Garrett	Stability and transition of rotating flows in a chemical vapour deposition reactor

Lunch 12.35 - 13.10

Posters 13.10 - 13.50

Plenary Session 3 Prof Will Zimmerman 14.00 - 14.45

Microbubble distillation and condensation: new unit operations for sustainable (bio)processing?

Session 9 (A) Environmental flows

Time/Talk Number	Authors	Talk Title
14.55 27	Eriyl Mouloupoulou, Anna Kalogirou and Onno Bokhove	Hydrodynamic investigations in a "slice" of beach
15.08 67	Jacob van Alwon, Duncan Borman, Andrew Sleigh and Nik Kapur	Experimental and numerical modelling of aerated flows over stepped spillways
15.21 33	Robin Williams and Chris Batha	Rayleigh-Taylor mixing
15.34 64	Davide Marucci and Matteo Carpentieri	Study of the effect of atmospheric stratification on flow and dispersion in urban environment

Tea/Coffee 15.50-16.20

Session 11 (A) Gravity currents/thin films

Time/Talk Number	Authors	Talk Title
16.20 119	Emily Dieu, Maarten Van Reeuwijk and Graham Hughes	Characterising mixing in a slope density current
16.33 98	Robert Kelly, Robert Dorrell, Alan Burns and William McCaffrey	The semi-confined nature of turbidity currents
16.46 44	Luis Blay Esteban, John Shrimpton and Bharath Ganapathisubramani	Large irregular particles settling through turbulent flows
16.59 92	Caitlin Chalk, Duncan Borman, William Murphy, Manuel Pastor, Jeff Peakall, Andrew Sleigh and Raul Fuentes	A numerical approach to the internal mechanisms of debris flows
17.12 46	Mashaël Aljohani	Multilevel solution algorithms for a numerical model of thin film flows
17.25 28	Morgan Tudball, Te-Sheng Lin, Mark Blyth, Demetrios Papageorgiou, David Sibley and Dmitri Tseluiko	Electrified film flow over inclined topography

Finish 17.38

Conference Dinner 18.30

Posters 13.10 - 13.50

Plenary Session 3 Prof Will Zimmerman 14.00 - 14.45

Microbubble distillation and condensation: new unit operations for sustainable (bio)processing?

Session 10 (B) Turbulence

Time/Talk Number	Authors	Talk Title
14.55 31	John Christos Vassilicos and Yi Zhou	Related self-similar statistics of the turbulent/non-turbulent interface and the turbulence dissipation
15.08 32	Gioacchino Cafiero and John Christos Vassilicos	Self-similarity and non-equilibrium turbulence in turbulent planar jets
15.21 34	Tatsuya Yasuda and John Christos Vassilicos	Long-range memory and inhomogeneity/anisotropy in periodic turbulence
15.34 81	Riccardo Togni, Elisabetta De Angelis and Andrea Cimarelli	A novel modelling approach for thermally driven turbulence based on the analysis of the Yaglom equation

Tea/Coffee 15.50-16.20

Session 12 (B) Numerics

Time/Talk Number	Authors	Talk Title
16.20 97	Adrian Harwood and Alistair Revell	Real-time, interactive CFD in virtual environments
16.33 102	Marta Camps Santasmasas and Adrian Harwood	A review and assessment of fluid animation models for engineering applications
16.46 40	Yongxing Wang, Peter Jimack and Mark Walkley	A one-field energy-conserving monolithic fictitious domain method for fluid-structure interactions
16.59 105	Marco-Felipe King, Amirul Khan, Cath Noakes, Nicholas Delbos, Janet F Barlow, Hannah L Gough and Christos Halios	Coupled indoor/outdoor airflow simulation comparing Fluent with a real-time GPU-based Lattice Boltzmann method.
17.12 96	Joseph O'Connor and Alistair Revell	Fluid-structure interaction of a bio-inspired flow control device using a Lattice Boltzmann-immersed boundary-finite element method
17.25 5	Jack Townsend and Ben Evans	A comparison of computational Lattice Boltzmann method solutions with experimental data for the design of high-speed planing boat hullforms.

Finish 17.38

Conference Dinner 18.30

Friday 8th September

Session 13 (A) Atmospheric Science

<i>Time/Talk Number</i>	<i>Authors</i>	<i>Talk Title</i>
09.00 13	Gregory Lane-Serff	Collapse of particle-laden buoyant plumes
9.13 15	Jack Atkinson and Peter Davidson	The evolution of rising thermals
09.26 61	Steven Boeing, Leif Denby, Alan Blyth, Douglas Parker and Alison Stirling	The role of thermals in cumulus convection: Large-Eddy Simulations and simple analytical models
09.39 108	Leif Denby, Steven Boeing, Doug Parker and Mike Whittall	How should we represent convective genesis?
09.52 16	John Ashcroft, Juliane Schwendike, Andrew Ross, Stephen Griffiths and Christopher Short	What determined the motion of Typhoon Hagupit?
10.05 118	Geoffrey Bessardon, Barbara Brooks, John Marsham and Andrew Ross	The nocturnal low-level jet in the West African Sahel from observations, analyses, and conceptual models

Tea/Coffee 10.20 - 10.50

Session 15 (A) General Interest

<i>Time/Talk Number</i>	<i>Authors</i>	<i>Talk Title</i>
10.50 114	Stephen Chaffin and Julia Rees	A toy problem in Non-newtonian fluids: the snail ball
11.03 124	Mike Evans, Craig Hall, R Aditi Simha, Tom Welsh and Joshua Hulks	The XY model as a paradigm for non-Newtonian flow
11.16 47	Hannah Kreczak, Rob Sturman and Mark Wilson	Rates of chaotic mixing: models of fluid devices with discontinuities
11.29 36	Koji Ohkitani	The Cole-Hopf transform for the incompressible Navier-Stokes equations and its applications: a stochastic analysis approach to the basic problems
11.42 84	David Fairhurst, Kyle Baldwin, Richard Hill, Michael Swift, Jean-Baptiste de Fouchier and Patrick Atkinson	Levitation using a magnetic stirrer, stabilised by low Reynolds number fluid pumping

Plenary Session 4 Dr Giovanni Cuomo 12.00 - 12.45
CFD for the water industry

Oral and poster presentation prize awards and closing remarks from organisers 12.55 - 13.05

End of Meeting 13.05

Friday 8th September

Session 14 (B) Aerodynamics

<i>Time/Talk Number</i>	<i>Authors</i>	<i>Talk Title</i>
09.00 80	Markus Zauner, Nico De Tullio and Neil Sandham	Direct numerical simulations of a supercritical laminar-flow wing section at moderate Reynolds numbers
09.13 57	Paige Rabey and Paul Bruce	Experimental investigation of the global unsteadiness of separated shock - boundary layer interactions
09.26 55	Michela Gramola, Matthew Santer and Paul Bruce	FSI study of adaptive shock control bumps
09.39 66	Denis Busquet, Olivier Marquet, Francois Richez, Matthew Juniper and Denis Sipp	Global Stability analysis of turbulent flow around airfoil near stall angle
09.52 125	Olga Evstafyeva and Aimee S. Morgans	Bi-modality of the Ahmed body wake: simulation and feedback control
10.05 131	Laurent Dalla Longa and Aimee Morgans	Simulation and feedback control of the flow around a square-back bluff body

Tea/Coffee 10.20 - 10.50

Session 16 (B) Heat Transfer

<i>Time/Talk Number</i>	<i>Authors</i>	<i>Talk Title</i>
10.50 54	Evaldas Greiciunas, Duncan Borman and Jon Summers	Novel modelling methods for aerospace heat exchangers
11.03 123	Dong Yang, Francesca Sogaro, Aimee Morgans and Peter Schmid	Optimisation of multiple Helmholtz resonators in a low-order network model for annular combustors
11.16 68	Raquel Vaz, Florencia Boshier and Jonathan Mestel	Flow driven by a horizontal linearly varying temperature gradient in a curved channel
11.29 60	Francesca Sogaro, Peter Schmid, Aimee Morgans and Dong Yang	Sensitivity analysis of thermoacoustic instabilities
11.42 128	Juan Guzman-Inigo and Aimee Morgans	Sound generated by blades interacting with entropy waves

Plenary Session 4 Dr Giovanni Cuomo 12.00 - 12.45
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End of Meeting 13.05

Fluids Conference Schedule

**Meet the SIG
Leaders' - with lunch
provided** 13.05 - 14.30

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Leaders' - with lunch
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