



2019

BURGERS SYMPOSIUM

Conference Centre 'De Werelt' in Lunteren

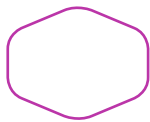
21

&

22

MAY

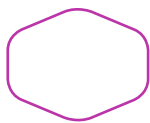
2019

**TUESDAY 21 MAY****GENERAL PROGRAMME**

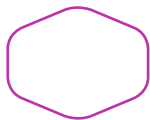
09.30 – 10.30	Registration, coffee/tea
10.30 – 10.40	Plenary: opening
10.40 – 11.30	Plenary: Burgers Lecture by Prof. Emmanuel Villermaux (Marseille, F)
11.30 – 12.30	Parallel sessions : 1 & 2
12.30 – 13.30	Lunch
13.30 – 15.15	Parallel sessions : 3 & 4
15.15 – 15.45	Tea / coffee break
15.45 – 16.15	Plenary: pitches by PhD students
16.15 – 17.45	Parallel sessions : 5 & 6
17.45 – 18.30	Posters + Gallery of Fluid Motion + Drinks

Evening programme

18.30 – 20.00	Joint dinner
20.30 – 21.30	Plenary: Evening Lecture by Dr Claudia Cenedese, Woods Hole Institute of Oceanography, USA)
21.30	Socialising & drinks

**WEDNESDAY 22 MAY GENERAL PROGRAMME**

09.00 - 10.30	Parallel sessions : 7 & 8
10.30 – 11.00	Coffee / tea break
11.00 – 11.10	Plenary : 'NWO Science' by Bram Borkent (NWO)
11.10 – 12.30	Plenary : lectures by new junior staff members
12.30 – 13.30	Lunch
13.30 – 15.00	Parallel session : 9 & 10
15.00 – 15.30	Plenary: Awards session Charles Hoogendoorn Award (KIVI) Laudatio by jury + presentation by recipient Dr Yasin Toparlar Announcement winners of the - Young Scientist Awards (2x) - Gallery of Fluid Motion Award
15.30	Closure & drinks

**PARTICIPATING GROUPS**

TUD-ET	3ME – Energy Technology Boersma
TUD-FM	3ME – Fluid Mechanics Westerweel, Roekaerts, Henkes, van de Water
TUD-MS	3ME – Multiphase Systems Poelma
TUD-MTT	3ME - Maritime and Transport Technology Westerweel, van Rhee, van Terwisga
TUD-NA	Applied Mathematics - Numerical Analysis Vuik, Oosterlee
TUD-AE	Aerospace Engineering Hickel, Scarano
TUE-WDY	Applied Physics – Vortex Dynamics and Turbulence Clercx, van Heijst, Toschi
TUE-PP	Applied Physics - Plasma Physics Kroesen, Banine, Ebert, van Rooij
TUE-ET	Mechanical Engineering – Energy Technology van Brummelen, Smeulders, van Steenhoven, van Duijn, Wijshoff, Zondag
TUE-PF	Mechanical Engineering - Power and Flow Deen, de Goey, Kuerten, Vreman, Roekaerts, Golombok
TUE-MS	Mechanical Engineering - Microsystems den Toonder
TUE-MMM	Chemical Engineering and Technology – Multi-scale Modelling of Multiphase Flows Kuipers
TUE-CPI	Chemical Engineering and Technology - Chemical Process Intensification van Sint Annaland
TUE-CASA	Mathematics and Computer Science – Centre for Analysis, Scientific Computing and Applications Koren, Peletier, Schilders, Slot
TUE-UPWE	Civil Engineering / Built Environment - Urban Physics and Wind Engineering Blocken
UT-PoF	Science and Technology - Physics of Fluids Lohse, DvdMeer, Snoeijer, Versluis, Prosperetti, Sun, Verzicco, van Wijngaarden
UT-SFI	Chemical Engineering - Soft Matter, Fluidics and Interfaces Lammertink
UT-EFD	Engineering Technology – Engineering Fluid Dynamics Venner, Hoeijmakers
UT-TE	Engineering Technology - Thermal Engineering TvdMeer, Kok, Brem
UT-MSM	Engineering Technology – Multiscale Mechanics Luding
UT-WEM	Engineering Technology - Water Engineering Management Hulscher
RUG-CMNM	Computational Mechanics and Numerical Mathematics Verstappen, Veldman
WUR-EZ	Experimental Zoology van Leeuwen
WUR-PCC	Physical Chemistry and Soft Matter van der Gucht

11.30-12.30

TUESDAY 21 MAY

LECTURE ROOM : EUROPA

1 EXPERIMENTAL TECHNIQUES

JO JANSSEN (UNILEVER)

Matthieu Souzy - Intermittent clogging in constricted particle suspensions

UT-PoF ♦ A Marin

Pim Bullee - Bubbly drag reduction over rough surfaces in turbulent Taylor–Couette flow

UT-PoF, UT-SFI ♦ S Huisman, C Sun, R Lammertink, D Lohse

Jesse Buijs - Fourier Transform Laser Speckle Imaging: a tool for real-time imaging of complex flows

WUR-PCC ♦ J Sprakel

Cees Voesenek - Bending moment patterns of swimming fish: an inverse dynamics analysis

WUR-EZ ♦ J van Leeuwen

Gunnar Jacobi - The application of particle image velocimetry for the analysis of high-speed ship hydrodynamics

TUD-MTT ♦ S Schreier

13.30-15.15

TUESDAY 21 MAY

LECTURE ROOM : EUROPA

3 MICROFLUIDICS

HANS MEERMAN (TEIJIN ARAMID)

Shuaizhong Zhang - Nature- inspired removal of microparticles by ciliated surfaces

TUE-MS ♦ J den Toonder

Binbin Zhang - Thin layer flow: Elasto-hydrodynamic lubrication and heterogeneous anisotropic materials topology

UT-EFD ♦ C Venner

Jiaming Zhang - Shrinkage of microdroplets in confined and sparsely miscible media

UT-PoF ♦ A Marin

Ye Wang - Climbing droplets driven by mechanowetting

TUE-MS ♦ J den Toonder

Zhao Yan - Visco-elastic layers in elasto-hydrodynamic lubrication

UT-EFD ♦ C Venner

Abel-John Buchner - Hydrodynamics of Chlamydomonas reinhardtii near surfaces

TUD-FM ♦ D Tam

Mikhail Zaytsev - The dynamics of plasmonic microbubbles

UT-PoF ♦ H Zandvliet

Thejas Hulikal Chakrapani - Simulations of capillary imbibition of miscible binary mixtures into a nanochannel

UT-MSM ♦ W den Otter

16.15-17.45

TUESDAY 21 MAY

LECTURE ROOM : EUROPA

5 MULTIPHASE FLOW 1

DIRK VAN DER PLAS (TATA STEEL)

Felix Milan - Multiscale Lattice Boltzmann simulations of droplet dynamics in turbulent flows

TUD-WDY ♦ F Toschi

Chong Shen Ng - Light droplets in natural convection

UT-PoF ♦ D Lohse

Ricardo Arturo López de la Cruz - Microdroplet formation under evaporation triggered Ouzo effect in a confined environment

UT-PoF ♦ X Zhang

Vatsal Sanjay - Lifting an oil drop through binary oil drop impact

UT-PoF ♦ D Lohse

Sören Schenke - Predicting cavitation implosion loads from energy balances

TUD-FM, TUD-MTT ♦ T van Terwisga

Alessandro Battistella - Modeling of the free surface of a Euler-Lagrange gas-liquid model with Front-Tracking

TUE-CPI ♦ I Roghair

Utkarsj Jain - Air-cushioning before the water-impact of a flat disk

UT-PoF ♦ D van der Meer

11.30-12.30

TUESDAY 21 MAY

LECTURE ROOM : AMERIKA

2 REACTIVE AND MEDICAL APPLICATIONS

NIELS DEEN (TUE)

Thijs Hazenberg - Modeling iron powder flames

TUE-PF ♦ J van Oijen

Robin Doddema - Soot precursor spectroscopy: a broad spectrum of complications

TUE-PF ♦ NJ Dam, NG Deen

Mohamad Fathi - Scalable high-fidelity simulations of reacting multiphase flows at supercritical pressure

TUD-AE ♦ S Hickel, D Roekaerts

Chris Schoutrop - Multicomponent transport in plasmas; exploiting stoichiometry

TUE-PP ♦ J van Dijk

Lennart van de Velde - Computational fluid dynamics to predict stentgraft thrombosis in peripheral artery disease

UT-PoF ♦ E Groot Jebbink

13.30-15.15

TUESDAY 21 MAY

LECTURE ROOM : AMERIKA

4 ENVIRONMENTAL FLOWS

FRANK VISSER (FLOWSERVE)

Thijs van Druenen - CFD evaluation of remedial measures for pedestrian-level wind nuisance around high-rise buildings

TUE-UPWE ♦ B Blocken

Vera van Bergeijk - The turbulent effects of transitions on dike cover erosion

UT-WEM ♦ J Warmink

KRG Reef - The effect of stochastically simulated storm-induced breaches on the long-term morphological evolution of barrier coasts

UT-WEM ♦ P Roos

Claudio Alanis Ruiz - CFD simulation of air curtain separation efficiency

TUE-UPWE ♦ T van Hooff

Jessica Strickland - Benefits and optimal design of vertically staggering wind farms

UT-PoF ♦ R Stevens

Weiwei Chen - Influence of a berm and roughness on wave overtopping at dikes

UT-WEM ♦ J Warmink, M van Gent

Samuel González Vera - Sediment transport by vortices

TUE-WDY ♦ M Duran Matute, GJ van Heijst

Anouk Bomers - The effect of dike breaches on overland flow patterns

UT-WEM ♦ R Schielen

16.15-17.45

TUESDAY 21 MAY

LECTURE ROOM : AMERIKA

6 HEAT TRANSFER

MICHEL VERSLUIS (UT)

Michael Timmer - Bidirectional impulse turbines for thermoacoustic engines

UT-TE ♦ T van der Meer

Keerthi Rajamani - Investigation of magnetic pumping for magnetocaloric refrigerator application

UT-TE ♦ M Shahi

Alexander Blass - Flow organization in turbulent sheared thermal convection

UT-PoF ♦ R Stevens

Qi Wang - Observation of flow reversals in two-dimensional Rayleigh-Bénard convection up to $Ra = 10^{11}$

UT-PoF ♦ R Stevens

Jonathan Cheng - Heat transfer in rapidly rotating turbulent convection

TUE-WDY ♦ R Kunnen

Andrés Aguirre Guzmán - Flow regimes in turbulent rotating Rayleigh-Bénard convection at different Prandtl numbers

TUE-WDY ♦ R Kunnen

Xiao Xue - Effects of thermal fluctuations in settling particles in a multicomponent fluid

TUE-WDY ♦ F Toschi

09.00-10.30

WEDNESDAY 22 MAY

LECTURE ROOM : EUROPA

7 MULTIPHASE FLOW 2

GERRIT HOMMERSOM (DOW BENELUX)

Haiyu Wang - A vapour-liquid phase transition model based on piecewise linear interface calculation

TUE-PF ♦ J Kuerten, B van Esch

Haryo Mirsandi - Bubble formation from an orifice in liquid cross-flow

TUE-MMM ♦ E Peters, M Baltussen

Shuai Li - Modelling large scale airgun-bubble dynamics with highly non-spherical features

UT-PoF ♦ D van der Meer

Pablo Peñas - Bubble growth enhancement through rectified diffusion and microstreaming

UT-PoF ♦ D van der Meer

Yanshen Li - Controlled solvent exchange in a porous Hele-Shaw cell

UT-PoF ♦ D Lohse

Nakul Pande - The short-time current response of a hydrogen evolving nickel electrode to bubble growth

UT-PoF ♦ D Krug

José Manuel Encarnación Escobar - Marangoni puffs and Marangoni enhanced dissolution of droplets

UT-PoF ♦ D Lohse, X Zhang

11.00-12.30

WEDNESDAY 22 MAY

LECTURE ROOM : EUROPA

PLENARY SESSION BY JUNIOR STAFF MEMBERS

HANS KUERTEN (TU/E)

Erik Horstman ♦ UT-WEM

Are flow-vegetation interactions well represented by mimics ?

Willem Haverkort ♦ TUD-ET

Modeling and experiments of multiphase flow in porous flow-through electrodes for water electrolysis

Cristóbal Bertoglio ♦ RUG-CMNM

Inverse problems in blood flows

Alessio Ricci ♦ TUE-UPWE

Simulation of urban boundary and canopy layer flows in port areas induced by different marine boundary layer inflow conditions

13.30-15.00

WEDNESDAY 22 MAY

LECTURE ROOM : EUROPA

9 DROPLETS

STEFAN HICKEL (TUD)

Ruben van Gaalen - Drying droplets and surfactants: a numerical study

TUE-PF ♦ J Kuerten

Maciej Chudak - Dynamics of unstable dewetting at soft solid interfaces

TUE-WDY ♦ A Darhuber

Bojia He - Manipulation of droplets on partially wettable surfaces by impinging gas jets

TUE-WDY ♦ A Darhuber

Yaxing Li - Evaporating droplets on lubricated surfaces: Suppression of coffee-stain effects

UT-PoF ♦ M Versluis

Michiel Hack - The unexpected wetting properties of water-1,2-Hexanediol solutions

UT-PoF ♦ T Segers

Wojciech Kwiecinski - Evaporation of dilute sodium dodecyl sulfate droplets on a hydrophobic substrate

UT-PoF ♦ T Segers

Evan Milacic - Direct Numerical Simulations of droplet spreading on spherical particles

TUE-MMM ♦ M Baltussen

09.00-10.30

WEDNESDAY 22 MAY

LECTURE ROOM : AMERIKA

8 TRANSPORT

CHRISTIAN POELMA (TUD)

Johan Damveld - On the modelling of the two-way coupling of tidal sand waves and benthic organisms

UT-WEM ♦ P Roos, B Borsje

Sebastien Contreras - Chaotic advection in 3D cavity flows: experimental-numerical analysis

TUE-WDY ♦ M Speetjens, H Clercx

Steven Kaptein - One-dimensional models for exchange flows under strong stratification

TUE-WDY ♦ H Clercx, M Duran Matute

Ruud Lensvelt - Enhanced scalar transport through controlled reorientation of flow fields

TUE-ET ♦ M Speetjens

Tariq Shajahan - Sedimentation of dense suspensions of spheres in a viscous fluid

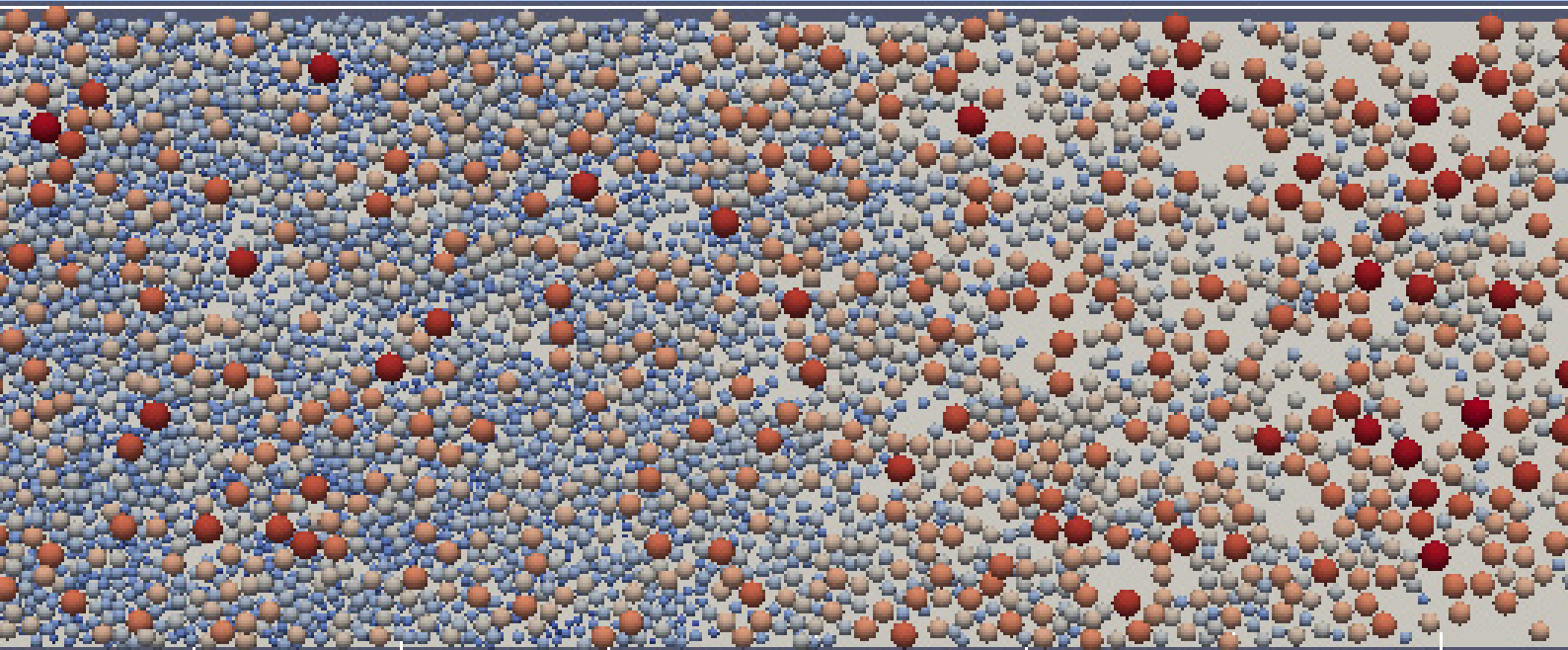
TUD-MS ♦ W-P Breugem

Steven Chong - Enhancement in angular momentum transport in stratified Taylor-Couette flow

UT-PoF ♦ D Lohse

Pieter Berghout - Roughness in Taylor-Couette flow

UT-PoF ♦ R Stevens



13.30-15.00

WEDNESDAY 22 MAY

LECTURE ROOM : AMERIKA

10 MATHEMATICAL AND NUMERICAL TECHNIQUES

AUKE VAN DER PLOEG (MARIN)

Koondri Mitra - Linearization schemes in nonlinear porous flow problems

TUE-CASA ♦ S Pop

Yous van Halder - Machine learning, the future for fluid flow predictions

TUE-CASA ♦ B Sande

Harshil Patel - Computing interface curvature for Volume of Fluid (VOF) using machine learning

TUE-MMM ♦ E Peters

Xiaodong Li - Efficient adjoint approach to automatic mesh optimization for predictive Large Eddy Simulation

TUD-AE ♦ S Hickel, S Hulshoff

P. Nakate - A mathematical model for an anode baking furnace

TUD-NA ♦ D Lahaye

Giorgio Besagni - Bubble column fluid dynamics: a multi-scale perspective

TUE-PF ♦ N Deen

Jordi Casacuberta - Linear and non-linear dynamics of a micro-ramp wake

TUD-AE ♦ S Hickel, M Kotsonis, K Groot