

School Program

Monday 9 December 2019

08:30-08:45	Registration	
08:45-09:00	Ravi Jagadeeshan	Introductory remarks
09:00-10:30	Burkhard Dünweg	Introduction to hydrodynamics and model H equations
10:30-11:00	Coffee	
11:00-12:30	Timm Krüger	Introduction to Lattice Boltzmann (LB)
12:30-13:30	Lunch	
13:30-15:00	Julia Yeomans	Lattice Boltzmann simulations of complex fluids
15:00-15:45	Adolfo Vazquez-Quesada	Introduction to (Smoothed) Dissipative Particle Dynamics and Smoothed Particle Hydrodynamics I
15:45-16:15	Coffee	
16:15-17:00	Adolfo Vazquez-Quesada	Introduction to (Smoothed) Dissipative Particle Dynamics and Smoothed Particle Hydrodynamics II
17:00-18:30	Xiangyu Hu	SPH method for violent multi-phase flows with high density ratio

Tuesday 10 December 2019

09:00-10:30	Maria Lukacova	Diffuse interface models for multiphase flows: mathematical and numerical aspects
10:30-11:00	Coffee	
11:00-12:30	Amir Raouf	Developing advanced pore network modelling formulations for two-phase flow and reactive transport
12:30-13:30	Lunch	
13:30-15:00	Gunilla Kreiss	Level Set methods for multiphase flows
15:00-15:45	Mathis Plapp	Diffuse-interface models: versatile tools for the solution of moving- boundary problems I
15:45-16:15	Coffee	
16:15-17:00	Mathis Plapp	Diffuse-interface models: versatile tools for the solution of moving- boundary problems II
17:00-18:30	Hans Kuipers	Introduction to Direct Numerical Simulation of multiphase flows using the Front Tracking method

Workshop Program

Wednesday 11 December 2019

08:30-08:45	Registration	
08:45-09:00	Ignacio Pagonabarraga	Introductory remarks
09:00-09:40	Suzanne Fielding	Free surface instabilities in complex fluids
09:40-10:20	Julia Yeomans	Modelling cell mechanics
10:20-10:50	Coffee	
10:50-11:30	Amir Raouf	Change of two-phase flow parameters due to reactive transport
11:30-12:10	Rudolf Hilfer	Two-Phase Flow in Porous Media: Hysteresis and Saturation Overshoot
12:10-12:30	Subhadeep Roy	Effective rheology of two-phase flow in porous media: dependence on system size and system disorder
12:30-13:30	Lunch	
13:30-14:10	Hans Kuipers	Direct Numerical Simulation of three-phase flows
14:10-14:50	Maria Lukacova	Hybrid multiscale methods for complex polymeric flows
14:50-15:10	Francesco Magaletti	Coupling Fluctuating Hydrodynamic and Diffuse Interface modeling for vapor bubble nucleation dynamics
15:10-15:30	Mirko Gallo	Nucleation and growth dynamics of vapor bubbles
15:30-17:30	Coffee + Poster session	
18:00	Bus departure for conference dinner	

Thursday 12 December 2019

09:00-09:40	Hans Fraaije	Multiscale modeling in the context of the digitalization revolution in the process industry: A survey of case studies and the current state of the art, and where to go
09:40-10:20	Gunilla Kreiss	The conservative level-set method and contact line dynamics for multiphase flows
10:20-10:50	Coffee	
10:50-11:30	Andrea Montessori	Mesoscale modelling of near-contact interactions for complex flowing interfaces
11:30-12:10	Jens Harting	Capillary and electrostatic interactions in multiphase flows
12:10-12:30	Alexander Sukhov	Optimal motion of triangular magnetocapillary swimmers
12:30-13:30	Lunch	
13:30-14:10	Erika Eiser	Tuning the rheology of emulsions using DNA

14:10-14:50	Adolfo Vazquez Quesada	Modeling and simulation of particle systems with Newtonian and non-Newtonian matrices
14:50-15:30	Xiangyu Hu	An integrated multi-resolution meshfree solver for modeling fluid-structure interaction
15:30-16:00	Coffee	
16:00-16:20	Mariano Galvagno	Oil droplet and membrane surface hydrodynamic–colloidal interactions
16:20-17:00	Timm Krueger	Challenges of cellular blood flow modelling in health (and disease)
17:00-17:40	Mathis Plapp	Phase-field simulations of viscous fingering in shear-thinning fluids using the advected-field method
17:40-18:00	Burkhard Duenweg	Final remarks