



Joint UNITS-SISSA workshop on Applied Math in Fluid Mechanics

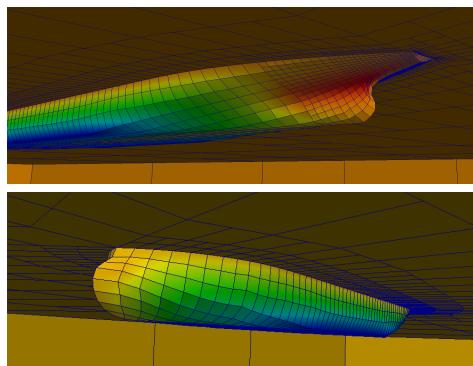
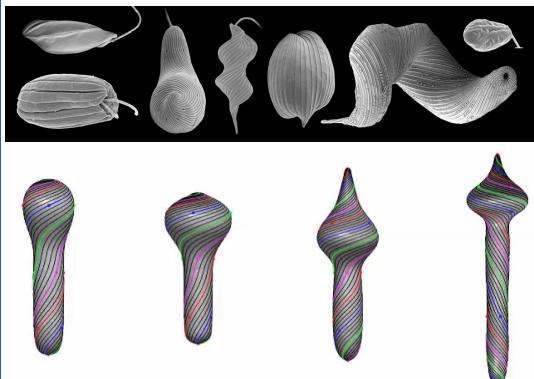
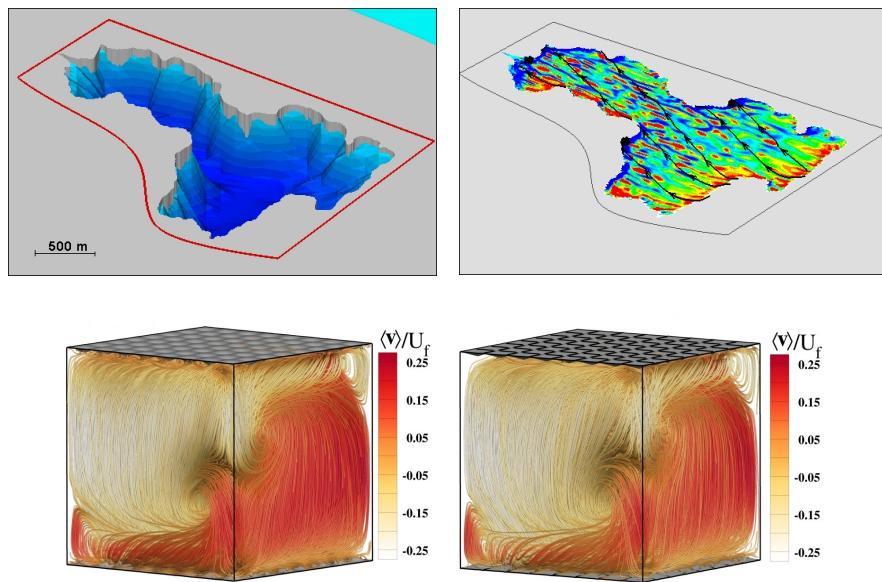
Date: 14 may 2015

Location: SISSA campus Via Bonomea 265, 34136 Trieste, Sky meeting room, VII floor, **14:30-19:00**

Chairmen: Vincenzo Armenio (UniTS), Antonio De Simone, Luca Heltai, Gianluigi Rozza (SISSA)

UniTs Contributions by:

- Carlo Cintolesi
- Ahmad Fakhari
- Najmeh Foroozani
- Mahmoud Jourabian
- Marco Santo
- Giulia Zanier
- Steven Kaptein
- Federico Roman
- Santiago Lopez Castano
- Andrea Petronio
- Chiara Corsato



SISSA Contributions by:

- Andrea Mola
- Francesco Ballarin
- Nicola Cavallini
- Nicola Giuliani
- Filippo Salmoiragh
- Giuseppe Pitton
- Giovanni Corsi
- Alessandro Lucantonio
- Giovanni Noselli
- Mauro Bardelloni

Organized by:

Industrial and Environmental Fluid Dynamic Research Group

SISSA mathLab (mathlab.sissa.it)

in the framework of two Doctoral Schools:

Environmental and Industrial Fluid Mechanics - UniTs (phdfluidmechanics.appspot.com)

Mathematical Analysis Modelling and Applications - SISSA (math.sissa.it/education/amma)



Welcome and Introduction 14:30-14:45

Talks (UniTs IE-Fluids): Chairman Vincenzo Armenio

- Simulation of turbulent buoyant flow with boundaries heat exchange - [Carlo Cintolesi](#) 14:50-15:00
- Wall-layer modelling of massive separation in Large Eddy Simulation of coastal flows - [Ahmad Fakhri](#) 15:00-15:10
- Numerical study of Large Scale Circulation dynamics of turbulent Rayleigh-Benard convection in a cubic confinement - [Najmeh Foroozani](#) 15:10-15:20
- LES of laboratory scale suspended sediment transport - [Mahmoud Jourabian](#) 15:20-15:30
- Large Eddy Simulation (LES) of wind-driven circulation in Ledro lake - [Marco Santo](#) 15:30-15:40
- High resolution model to predict oil spill dispersion in harbour and coastal areas - [Giulia Zanier](#) 15:40-15:50
- Modelling the physical processes in the Rhine Region of Freshwater Influence - [Steven Kaptein, Federico Roman](#) 15:50-16:00
- Numerical Experiments on Co-Current and Interfacial Laminar Flows - [Santiago Lopez Castano](#) 16:00-16:10
- Modelization of phase change with conjugate heat transfer under water jets over hot plates - [Andrea Petronio](#) 16:10-16:20
- How to describe the geometry of the cornea? - [Chiara Corsato](#) 16:20-16:30

Break 16:30-17:00

Talks (SISSA mathLab): Chairmen Antonio De Simone, Luca Heltai, Gianluigi Rozza

- An application of the Boundary Element Method developed at SISSA MathLab: fully nonlinear potential model for simulations of naval hydrodynamics on complex CAD geometries - [Andrea Mola](#) 17:00-17:10
- Reduced Order Models for cardiovascular flows - [Francesco Ballarin](#) 17:10-17:20
- Finite elements approaches to Fluid Structure Interactions, the Immersed Boundary Method - [Nicola Cavallini](#) 17:20-17:30
- Boundary element method: application to ship wave interaction and micromotility - [Nicola Giuliani](#) 17:30-17:40
- Shape optimization for potential and Stokes flows by Reduced Order Modelling and Isogeometric Analysis - [Filippo Salmoiraghi](#) 17:40-17:50
- Computational reduction strategies for bifurcation problems in fluid mechanics - [Giuseppe Pitton](#) 17:50-18:00
- Fluid Structure interaction for industrial applications using OpenFOAM - [Giovanni Corsi](#) 18:00-18:10
- Modeling of swelling gels - [Alessandro Lucantonio](#) 18:10-18:20
- Motility @ mathLab - [Giovanni Noselli](#) 18:20-18:30
- Deal.ii: examples and perspectives - [Mauro Bardelloni](#) 18:30-18:40