

MekIT'17 – 11th & 12th May 2017 – NTNU

Program Thursday 11th May

Version 09.05.2017

Auditorium EL5, “Gamle elektro”, O.S. Bragstads plass, Gløshaugen

0900 – 0930 Registration

0930 – 0940 Opening by Helge Andersson - NTNU

0940 – 1040 Session 1 – Computational Fluid Dynamics – Complex Geometries
Chair: Muk Chen Ong - UiS

0940 – 0955 Hans Bihs, Arun Kamath and Mayilvahanan Alagan Chella, Csaba Pakozdi
Complex geometry handling for a Cartesian grid based CFD solver

0955 – 1010 Jørgen R. Aarnes, Nils E.L. Haugen and Helge I. Andersson
*Resolving bluff bodies in DNS using overset grids***

1010 – 1025 Tale Egeberg Aasland, Bjørnar Pettersen and Helge I. Andersson
*Immersed boundary methods: cut-cell versus ghost cell***

1025 – 1040 Fatemeh H. Dadmarzi, Vagesh D. Narasimhamurthy, Helge I. Andersson
and Bjørnar Pettersen
Influence of computational domain size on wakes behind cross-shaped plates

1040 – 1045 Address by Bjørn Skallerud - NTNU

1045 – 1110 Coffee and tea break

1110 – 1210 Session 2 – Computational Fluid Dynamics – Complex Physics
Chair: Bjørnar Pettersen - NTNU

1110 – 1125 Muk Chen Ong, Utari Cendhy Liestyarini and Yihan Xing
Three dimensional numerical simulation of flow in blind-tee pipes

1125 – 1140 Eskil Aursand
Modelling planar film boiling of arbitrary inclination with the lubrication approximation

1140 – 1155 Petter Fornes, Hans Bihs and Steinar Nordal
Implementation of non-Newtonian rheology for granular flow simulation

1155 – 1210 Kun Yang, Lihao Zhao and Helge I. Andersson
Scales of a turbulent Couette-Poiseuille flow with vanishing mean wall shear

1215 – 1315 Lunch with a view from the top-floor canteen in K. Hejes vei 1d.

1315 – 1430 Session 3 - Computational Solid and Biomechanics

Chair: Bjørn Skallerud - NTNU

1315 – 1400 Ray Ogden

Invited Lecture: *On the elasticity of dispersed fibres in fibrous soft biological tissues*

1400 – 1415 Jakob Sturdy, Vinzenz G. Eck and Leif Rune Hellevik

Comparison of arterial wall constitutive laws for application in patient specific blood flow simulations

1415 – 1430 Hongliang Liu, Prot Victorien and Bjørn Skallerud

Tissue composition based nonlinear FEM simulation of the soft palate using patient specific 3D anatomy

1430 – 1500 Coffee and tea break

1500 – 1645 Session 4 - Marine CFD

Chair: Hans Bihs - NTNU

1500 – 1515 Ville M. Viitanen and Timo Siikonen

Numerical simulation of cavitating marine propeller flows

1515 – 1530 Tore A. Helgedagsrud, Yuri Bazilevs, Artem Korobenko, Kjell M. Mathisen and Ole A. Øiseth

Using ALE-VMS to compute wind forces on moving bridge decks

1530 – 1545 Cai Tian, Fengjian Jiang, Bjørnar Pettersen and Helge I. Andersson

Numerical investigation of flow around a step cylinder

1545 – 1600 Håkon Strandenes, Fengjian Jiang, Bjørnar Pettersen and Helge I. Andersson

Recent developments and new results on the flow around an inclined spheroid

1600 – 1615 Jarle Berntsen, Guttorm Alendal, Helge Avlesen and Øyvind Thiem

Numerical investigations of dense water cascading on a slope – the role of the bottom boundary layer

1615 – 1630 Mayilvahanan Alagan Chella, Hans Bihs, Dag Myrhaug, Øyvind A. Arntsen

A comparison of wave generation methods for simulating extreme waves in a numerical wave tank

1630 – 1645 Ankit Aggarwal, Mayilvahanan Alagan Chella, Hans Bihs, Csaba Pákcodi and Øyvind A. Arntsen

CFD modelling of irregular and focused waves using wave reconstruction

1900 Conference dinner at “*Restaurant Kommandanten*” at Kristiansten Festning

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Program Friday 12th May

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0900 - 1015 Session 5 – Applied Computational Fluid Dynamics

Chair: Helge Andersson - NTNU

0900 – 0945 Johan Revstedt

Invited Lecture: *Case studies with large-eddy simulations*

0945 – 1000 Christopher J. Friedemann, Mikael M. Mortensen and Jan Nossen
Multiphase flow simulation in an annulus configuration

1000 – 1015 Wenjun Yuan, Lihao Zhao, Niranjana Reddy Challabotla and Helge I. Andersson
Gravity effects on the wall-normal motion of inertial disk-like particles in vertical turbulent channel flow

1015 – 1040 Coffee and tea break

1040 – 1210 Session 6 – Computational Solid Mechanics

Chair: Mikael Mortensen - UiO

1040 – 1055 Kjell M. Mathisen, Yuri Bazilevs, Bjørn Haugen, Tore A. Helgedagsrud, Trond Kvamsdal, Knut H. Okstad and Siv B. Raknes
A comparative study of beam element formulations for nonlinear analysis: corotational vs geometrically exact formulations

1055 – 1110 Arne Ilse, Victorien Prot, Bjørn Skallerud and Bjørn T. Stokke
Finite element simulations of the swelling of cationic hydrogels

1110 – 1125 Erik L. Grimsø, Lars Edvard Bryhni Dæhli, Arne Aalberg, Magnus Langseth and Arild Holm Clausen
*FE simulations of fillet welds subjected to impact loading***

1125 – 1140 Li Sun, Zhiliang Zhang, Xiaobo Ren and Jianying He
A review of modelling and simulation of metal additive manufacturing

1140 – 1155 Joakim Johnsen, Arild Holm Clausen, Odd Sture Hopperstad and Erik Løhre Grimsø
*Numerical simulation of rubber-modified polypropylene and cross-linked polyethylene at different ambient temperatures and strain rates***

1200 – 1245 “Open air” lunch outside of the conference hall EL5.

1245 – 1415 Session 7 - Computational Methods

Chair: Jarle Berntsen - UiB

1245 – 1330 Jeroen Groen, Simon D. Larsen and Ole Sigmund

Invited Lecture: *Recent developments in large and multiscale topology optimization*

1330 – 1345 Alexander Schmeding, Elena Celledoni and M. Eslitzbichler

*Shape analysis on Lie groups and beyond***

1345 – 1400 Sølve Eidnes and Torbjørn Ringholm

Energy preserving moving mesh methods applied to the BBM equation

1400 – 1415 Mikael Mortensen

Shenfun – automating the spectral Galerkin method

1415 – 1435 Coffee and tea break

1435 – 1620 Session 8 – Computational Mechanics – Miscellaneous

Chair: Bernhard Müller - NTNU

1435 - 1450 Arun Kamath and Hans Bihs

Simulation of a rock slide impact generated tsunami-like event

1450 – 1505 Jiayi Zheng Lu, Arun Kamath and Hans Bihs

Simulation of freely-floating bodies in waves using a 6DOF algorithm

1505 – 1520 Nadeem Ahmad, Hans Bihs, Arun Kamath and Øivind A. Arntsen

A numerical investigation of erosion around offshore pipelines

1520 – 1535 Christopher Nilsen

Numerical investigation of thermo-viscous instability in immiscible displacement

1535 – 1550 Filip Sund

The relative importance of model parameters in predictive transient models

1550 – 1605 Weizhi Wang, Hans Bihs, Arun Kamath and Øivind A. Arntsen

Large scale CFD modelling of wave propagation in Sulafjord for the E39 project

1605 – 1620 Tufan Arslan, Alessandro Nocente and Erkan Ayder

Numerical simulations for the flow inside the pump as turbine

1620 Closing by Bjørn Skallerud