Program for SIMS 2015 Conference
Linköping, 7-9 October

Wednesday , 7th October			
13:00-13:30	Registration in front of Visionen		
13:30 – 16:30	**Tutorial 1**	**Tutorial 2**	**Tutorial 3**
	Principles of Object-Oriented Modeling and Simulation of Dynamic Systems with Modelica. Dr. Lena Buffoni Room: Donald Knuth	FMI 2.0 Model Exchange, Co-simulation – Theory and Practice MSc Adeel Asghar Room: Alan Turing	Collaborative Modelling and Co-simulation using Crescendo: Tools and techniques for Designing Embedded Systems Prof. Peter Gorm Larsen Room: AHA-rummet
Thursday, 8th October			
8.00 – 8.30	Registration and coffee in front of Visionen		
	Workshop opening		
8.40- 9.20	**Keynote:** Accomplishing Ground Moving Innovations through Modeling, Simulation, and Optimal Control *Speaker: Lars Eriksson* *Room: Visionen*		
9.20 – 10.00	**Keynote:** INTO-CPS: An well-founded integrated tool chain for comprehensive Model-Based Design of Cyber-Physical Systems *Speaker: Peter Gorm Larsen* *Room: Visionen*		
10.00 -10.30	Coffee		
10.30 – 12.10	**Session 1** Session Chair: *Erik Dahlquist* *Room: Visionen*		**Session 2** Session Chair: *Bernt Lie* *Room: Grace Hopper*
	Magnus Komperød. *Improving the Mathematical Formulas for Identification of Bitumen's Viscoelastic Properties at Large Shear Strains*		Cornelius Agu, Rajan Thapa and Britt Halvorsen. *Simulation of Simplified Model for Reaction Kinetics in Biomass Gasification*
	Leonid Kulakovskyi, Victor Rosen, Roshan Sharma, Carlos F. Pfeiffer and Bernt Lie. *Optimal Operation of the Peat*		Markku Ohenoja and Aki Sorsa. *Simulation as a Tool for Evaluating Biogas Purification Processes*

	Drying Process in Steam Tube Dryers	
	Andreas Thomasson and Lars Eriksson *Effects of Pulsating Flow on Mass Flow Balance and Surge Margin in Parallel Turbocharged Engines*	Chameera Jayarathna, Anette Mathisen, Lars Erik Øi and Lars-Andre Tokheim. *Process Simulation of Calcium Looping With Indirect Calciner Heat Transfer*
	Solomon Aforkoghene Aromada and Lars Øi. *Simulation of improved absorption configurations for CO2 capture*	Nora C.I Furuvik and Britt M. Halvorsen *Simulation of CO2-distribution in carbonate reservoir*
12.10 – 13.30	Lunch	
13.30 – 15.10	**Session 1** Session Chair: *Lena Buffoni* *Room: Visionen*	**Session 2** Session Chair: *Magnus Komperød* *Room: Grace Hopper*
	Mengjia Zhang, Maxime Baudette, Jan Lavenius, Stig Løvlund and Luigi Vanfretti. *Modelica Classes of the Norwegian Grid for iTesla and Software-to-Software Validation*	Kou Guandang and Britt M. Halvorsen. *Near well simulation of extra heavy oil production using SAGD*
	Lars Ivar Hatledal, Houxiang Zhang and Hans Georg Schaathun. *A Software Architecture for Simulation and Visualisation based on the Functional Mock-up Interface and Web Technologies*	Marianne S. Eikeland, Rajan K. Thapa and Britt M. Halvorsen. *Aspen Plus simulation of biomass gasification with known reaction kinetic*
	Magnus Eek, Johan Karlén and Johan Ölvander. *A Framework for Early and Approximate Uncertainty Quantification of Large System Simulation Models*	Lars Erik Øi and Irene Yuste Tirados. *Heat pump efficiencies simulated with Aspen HYSYS and Aspen Plus*
	Gregory Provan. *Learning Modelica Models from Component Libraries*	Katia Aparecida Da Silva and Britt M. Halvorsen. *Nearwell simulations of a horizontal well in Atlanta Field - Brazil with AICV completion using OLGA/Rocx*
15.10 – 15.30	Coffee Break	
15.30 – 17.10	**Session 1** Session chair: *Adrian Pop*	**Session 2** Session chair: *Britt Halvorsen*

	Room: Visionen	*Room: Grace Hopper*
	Esko Juuso. *Recursive dynamic modelling in changing operating conditions*	Liubomyr Vytvytskyi, Roshan Sharma, Ingunn Granstrøm and Bernt Lie. *Modeling for control of run-of-river power plant Grønvollfoss*
	Peter Nordin, Robert Braun and Petter Krus. *Job-Scheduling of Distributed Simulation-Based Optimization with Support for Multi-Level Parallelism*	Yuliia Pavlova, Oleg Kotsar and Wilhelm Rondeel *Modeling of the Energy Consumption within the Framework of the Energy Efficiency Management*
	Ayman Aljarbouh and Benoit Caillaud. *Robust Simulation for Hybrid Systems: Chattering Bath Avoidance.*	Hafthor Ægir Sigurjonsson, Brian Elmegaard and Lasse Røngaard Clausen. *Integrated model of bioenergy and agriculture system*
	Robert Hällqvist, Magnus Eek, Ingela Lind and Hampus Gavel *Validation Techniques Applied on the Saab Gripen Fighter Environmental Control System Model*	Amila Chandra Kahawalage, Britt M. Halvorsen and Vidar Mathiesen *Near Well CFD Simulation of SAGD Extra Heavy Oil Production*
17:10-18.10	Board Meeting - *Room: Visionen*	
18:10 -22:00	Dinner at the Aviation Museum – Bus to museum at 18:00 and to town center at 22:00	
Friday, 9th October		
8.20 – 8.40	Coffee	
8.40- 9.20	Keynote: Overview of Modeling, Simulation, Debugging, and Optimization with Modelica using OpenModelica Speaker: *Peter Fritzson* *Room: Visionen*	
9.20 – 10.00	Keynote: Virtual Engineering in the Automation Industry - How can we do better? Speaker: *Mikelsons Lars* *Room: Visionen*	
10.00 -10.30	Coffee	
10.30 – 11.45	**Session 1** Session chair: *Esko Juuso* *Room: Visionen*	**Session 2** Session Chair: *Magnus Eek* *Room: Grace Hopper*
	Samee Maharjan, Roshan Sharma, Trine Husøy, Hubert Dirven, Monica Andreassen and Bernt Lie. *Modeling and*	Anjana Malagalage and Britt Halvorsen. *Near well simulation and modelling of oil production from heavy oil reservoirs*

	simulation of Triclosan kinetics and distribution in humans using a PBPK model	
	Wenche Bergland, Carlos Dinamarca and Rune Bakke. *Temperature Effects in Anaerobic Digestion Modeling*	Bernt Lie. *Improved model for solar heating of buildings*
	Hildegunn.H. Haugen, Britt M. Halvorsen and Marianne S. Eikeland. *Gasification of livestock manure*	Magnus Komperød. *The Kelvin-Voigt Model's Suitability to Explain the Viscoelastic Properties of Anticorrosion Bitumen at Large Shear Strain in Subsea Cables and Umbilicals*
	Umesh Adhikari, Marianne S. Eikeland and Britt M. Halvorsen. *Gasification of biomass for production of syngas for biofuel*	L.B.J. Chathurangani and Britt M. Halvorsen. *Near well simulation of CO2 injection for Enhanced Oil Recovery (EOR)*
11:45 – 13:15	Lunch	
13:15 – 15:25	**Session 1** *Session Chair: Lars Ericsson* *Room: Visionen*	**Session 2** *Session Chair: Bernhard Thiele* *Room: Grace Hopper*
	Joachim Lundberg and Ola Marius Lysaker. *An optimization framework for tracking droplets in fire water spray images*	Cornelius Agu, Bernt Lie and Geir Elseth. *Simulation of Transcritical Flow in Hydraulic Structures*
	Magnus Komperød. *Derivation of Arc Length of Helical Cable Element at Cable Bending, with Emphasize on Taylor Series Expansion of the Non-Integrable Infinitesimal Arc Length*	Nima Ghaviha, Markus Bohlin, Fredrik Wallin and Erik Dahlquist *Optimal Control of an EMU Using Dynamic Programming and Tractive Effort as the Control Variable*
	D.I. Erandi N. Wijeratne and Britt M. Halvorsen. *Computational study of heavy oil production with inflow control devices*	Shobhana Singh, Kim Sørensen and Thomas Condra *Multiphysics Numerical Modeling of a Fin and Tube Heat Exchanger*
	Mahesh Ediriweera and Britt M. Halvorsen *Study of the effect of relative*	Jakob Hærvig, Thomas Condra and Kim Sørensen *Numerical Investigation of*

	permeability and residual oil saturation on oil recovery	*Single-phase Fully Developed Heat Transfer and Pressure Loss in Spirally Corrugated Tubes*
	Conference closing	