



Preliminary Program

Tuesday February 1

09.00-12.00

Custom Zoom rooms

Tutorials in parallel

- Peter Fritzson and Adrian Pop, Linköping University. "Introduction to Object Oriented Modeling, Simulation, Debugging and Sensitivity Analysis/Optimization with Modelica using OpenModelica"
- Lennart Ochel, RISE and Robert Braun, Linköping University. "FMI for Composite Modeling, Co-simulation and Model Exchange"
- Kristian Sandahl, Linköping University. "The Sustainability Analysis Diagram (SusAD)"

12.00-13.00

Break

13.00-14.10

Zoom Room 1

Plenary Session 1. Chair: TBA

- **Welcome to MODPROD.** Robert Braun and Ingo Staack.
- **Introduction by the MODPROD director.** Niclas Fock.
- **Keynote:** Rodrigo Castro, University of Buenos Aires. *"Tackling Multiple Scales: Efficient Model-based Simulation for the Covid-19 Pandemic"*

14.20-15.00

Zoom room 1

Parallel Session 2a: Model-Based Systems Engineering. Chair: TBA

- Sandro Tavares Conceicao, Viviam Lawrence Takase, Andre Pacheco E Silva Katchborian, Rodrigo Takeshi Da Silva, Luis Carlos De Castro Santos and Andre Andre Flora Alves Pinto. *"Developing Aircraft Cabin Air Conditioning Systems with Zonal Models using OpenModelica"*
- Erik Herzog and Johanna Axehill. *"Don't Mix the Tenses: Managing the Present and the Future in a Model-Based Systems Engineering Context"*
- Robert Hällqvist, Robert Braun, Magnus Eek and Petter Krus. *"Optimal Selection of Model Validation Experiments: Guided by Coverage"*
- Petter Krus. *"Requirement Space, Criticality and Comfort Zone for Emerging Technologies"*

14.20-15.40

Zoom room 2

Parallel Session 2b: Sustainability Modelling. Chair: TBA

- Henric Andersson. *"Carbon Dioxide Removal - Biochar Methods and Models"*
- Peter Fritzson. *"A Modelica Library and Scenarios for Sweden's Conversion from Fossil Powered to Electric Transportation"*
- Daniel Nilsson and Albin Sidås. *"Modulation and Analytics in Battery Manufacturing and Usage"*
- Peter Fritzson. *"Modelica Library and Scenarios for Thermal and Electric Solar Energy and Storage for Cities and Buildings"*

15:40-15.50

Break

15.50-17.00

Zoom room 1

Plenary Session 3. Chair: TBA

- **Presentation of research at the MODPROD center.** Niclas Fock, Adrian Pop, Petter Krus and Mehdi Tarkian.
- **Overview and current status of EMBrACE project.** Presenter: TBA



Wednesday February 2

8.00-9.20

Zoom room 1

Plenary Session 4. Chair: TBA

- **Keynote:** Christian Gehrman, Lund University, Sweden. *"Digital Twins to Enhance Cybersecurity for the Next Generation Industry 4.0 Factory"*
- **Keynote:** Anna Öhrvall Rönnbäck, Luleå University of Technology, Sweden. *"Systems Engineering for a Sustainable Future"*

9:20-9.30

Break

9.30-10.30

Zoom room 1

Parallel Session 5a: Digital Twins. Chair: TBA

- Tilda Herrgårdh, Feras Faez Elias, Elin Nyman, Kajsa Tunedal, Christian Simonsson, Oscar Arrestam, Valentin Kindesjö and Gunnar Cedersund. *"Digital Twins for Clinical Decision Support"*
- Kim Sungbum. *"Digital Twin with Pace on Cloud"*
- Lena Klasén. *"Smart Twins for Rural Scenes"*

9.30-10.30

Zoom room 2

Parallel Session 5b: Systems of Systems. Chair: TBA

- Lu Jinzhi, Shouxuan Wu, Guoxin Wang, Dimitris Kiritis and Zhenchao Hu. *"Cognitive Thread Supports System of Systems for Complex System Development"*
- Sofia Schön and Ludvig Knöös Franzén. *"Exploring the Impact of Model Fidelity Through Interactive Visualizations for System of Systems"*
- Jorge Lovaco. *"Wildfire Agent-Based Simulation for System of Systems Study"*

10.30-10.40

Break

10.40-11:40

Zoom room 1

Parallel Session 6a: Model-Based Remote Collaboration. Chair: TBA

- Marcelo de Castro, Giuseppe Laera, Manuel Navarro Catalan, Luigi Vanfretti and Glen Halley. *"Model Transformation for Smart Grid Applications"*
- Adrian Pop and Abdelazim Hussien. *"Large-Scale Collaborative Cyber-Physical System Development in the Cloud"*
- Tomáš Kulhánek and Jiří Kofránek. *"Bodylight.js 2.0 - In-browser Web Simulators using Standard Web Components"*

10.40-11:40

Zoom room 2

Parallel Session 6b: Co-simulation and Standards. Chair: TBA

- Kristofer Lindblom. *"Experiences from the SISO SpaceFOM at the European Space Agency"*
- Robert Braun and Robert Hällqvist. *"Steady-state Identification for Adaptive Co-simulation Step-size"*
- Felix Larsson. *"An Iron Bird Test-rig for Future Flight Control System Evaluation"*

11:40-12:10

Zoom room 1

Plenary Session 7. Chair: TBA

- Panel Discussion
- Workshop Summary