

PLECS WORKSHOP

Advanced Modeling and Simulation of Power Electronic Systems
RWTH Aachen, 04. September 2019

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| 08:30 | Registration |
| 09:00 | Introduction to PLECS <ul style="list-style-type: none">▶ General use of PLECS Blockset and PLECS Standalone▶ Instantaneous switching▶ Variable and fixed-step operation Exercise: Modeling a switched-mode power supply |
| 10:00 | Break |
| 10:30 | Solver Settings <ul style="list-style-type: none">▶ Definition of stiff and non-stiff systems▶ Explicit and non-explicit solvers▶ Stability domains▶ Accuracy considerations, step size control▶ Proper handling of discontinuities, zero-crossing detection Exercise: Solver accuracy and settings |
| 12:00 | Lunch |
| 13:00 | Introduction to Thermal, Magnetic & Mechanic Modeling & Simulation <ul style="list-style-type: none">▶ Switching & conduction loss descriptions▶ Combined electrical-thermal simulation▶ Permeance Capacitance Analogy Model Exercise: Thermal modeling of a buck converter |
| 14:30 | Break |
| 15:00 | Overview of PLECS Tools <ul style="list-style-type: none">▶ Custom components▶ Steady State analysis▶ Small signal analysis▶ State machine, C-Script and the DLL block▶ Simulation scripting Exercise: Building a modulator using the state machine block |
| 16:00 | Overview and Introduction to the PLECS RT Box <ul style="list-style-type: none">▶ Hardware-in-the-Loop (HIL)▶ Rapid control prototyping (RCP)▶ Demonstration of a real-time simulation |
| 16:30 | End of day |
| Contact | Plexim GmbH, +41 44 533 51 00, info@plexim.com |
| Location | RWTH Aachen University, Institut für Elektrische Antriebe (ISEA), Bibliothek – Raum 114, Jägerstr. 17-19, 52066 Aachen, Germany |