PLECS WORKSHOP

Advanced Modeling and Simulation of Power Electronic Systems
Plexim GmbH, 19. October 2027

08:30	Registration
09:00	Introduction to PLECS ▶I General use of PLECS Blockset and PLECS Standalone ▶I Instantaneous switching ▶I Variable and fixed-step operation Exercise: Modeling a switched-mode power supply
10:30	Break
11:00	Solver Settings ▶I Definition of stiff and non-stiff systems ▶I Explicit and non-explicit solvers ▶I Stability domains ▶I Accuracy considerations, step size control ▶I Proper handling of discontinuities, zero-crossing detection
12:00	Lunch
13:00	Introduction to Thermal Simulation ▶I Switching & conduction loss descriptions ▶I Combined electrical-thermal simulation ▶I Determining loss values from data sheets Exercise: Thermal modeling of a buck converter
14:30	Break
15:00	Bringing Simulation and Real Hardware Together (Code Generation Workflow in PLECS) ▶I Automatic code generation for microcontrollers ▶I Plant code generation for the RT Box ▶I Nanostep®, FlexArray and CPU solver engines ▶I Real-time simulation with 4ns step size for MHz switching Demonstration: HIL testbench with microcontroller and RT Box
16:00	Q&A
16:15	End of day
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