

PLECS WORKSHOP

Advanced Modeling and Simulation of Power Electronic Systems
Plexim GmbH, 18. February 2024

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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 |
| 10:30 | Break |
| 11:00 | 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 |
| 12:00 | Lunch |
| 13:00 | Introduction to Thermal Simulation <ul style="list-style-type: none">▶ Switching & conduction loss descriptions▶ Combined electrical-thermal simulation▶ Determining loss values from data sheets 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 and small-signal analysis▶ State machine, simulation scripting, C-Script, and the DLL block |
| 15:30 | HIL Testbench Demonstration <ul style="list-style-type: none">▶ Automatic code generation for microcontrollers▶ Plant code generation for the RT Box▶ Running simulations on the CPU and FPGA |
| 16:00 | Q&A |
| 16:15 | End of day |
| Contact | Plexim GmbH, +41 44 533 51 00, info@plexim.com |
| Location | Plexim GmbH, 3rd Floor, Zeppelin Wing, Technoparkstrasse 1, 8005 Zurich, Switzerland |