

PLECS WORKSHOP

Advanced Modeling and Simulation of Power Electronic Systems
Fraunhofer-Institut für Solare Energiesysteme, March 31, 2023

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
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	End of day
Contact	Plexim GmbH, +41 44 533 51 00, info@plexim.com
Location	Fraunhofer-Institut für Solare Energiesysteme ISE, Building Z10, Room Z10-3.07/3.08, Zinkmattenstraße 30, 79108 Freiburg, Germany