

PLECS WORKSHOP

Advanced Modeling and Simulation of Power Electronic Systems
University of Bologna, December 3, 2014

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, Mechanical & Magnetic 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">▶ AC Sweep and Impulse Response Analysis Tools▶ Steady State Analysis Tool▶ Implementing custom components Exercise: Creating a custom PV string component
16:00	End of day
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Location	University of Bologna, "Aula Magna" (auditorium), 2nd floor, Scuola di Ingegneria e Architettura, Viale del Risorgimento 2, 40136 Bologna, Italy