

PLECS WORKSHOP

Advanced Modeling and Simulation of Power Electronic Systems
University of Pisa - DESTEC, October 24th 2025
with live streaming



INGEGNERIA
ELETTTRICA



08:30	Welcome and technical setup
09:30	Introduction to PLECS - General use of PLECS Blockset and PLECS Standalone - Instantaneous switching - Variable and fixed-step operation Exercise: Modeling a switched-mode power supply
11:00	Break
11:30	Solver Settings - 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
12:30	Lunch
13:30	Introduction to Thermal Simulation - Switching & conduction loss descriptions - Combined electrical-thermal simulation - Determining loss values from data sheets Exercise: Thermal modeling of a buck converter
15:00	Break
15:30	Bringing Simulation and Real Hardware Together (Code Generation Workflow in PLECS) - Automatic code generation for microcontrollers - Plant code generation for the RT Box - Nanostep®, FlexArray and CPU solver engines - Real-time simulation with 4ns step size for MHz switching Demonstration: HIL testbench with microcontroller and RT Box
16:30	Questions & Answers - free discussion
17:00	Conclusions
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Location	Università di Pisa - DESTEC Aula Informatica interna Polo A - Sistemi Elettrici Via Diotisalvi 2, I-56122 Pisa, Italia <i>Prospective participants are invited to bring their laptops and to get in contact with the organizers in order to book a seat or to receive the link for live streaming</i>