

PLECS WORKSHOP

Advanced Modeling and Simulation of Power Electronic Systems
Università di Catania, 20th May 2026

08:30	Registration
09:00	The PLECS Toolchain <ul style="list-style-type: none">▶ PLECS, PLECS Coder, and RT Box▶ General use of PLECS, modeling vs. simulation▶ Instantaneous switching, variable and fixed-step operation▶ Simulation domains and system-level simulation▶ Tools: steady-state and small-signal analysis, simulation scripting Exercise: Simulation of a flyback converter
10:40	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	PLECS Spice <ul style="list-style-type: none">▶ Seamless integration of full-fledged SPICE solver inside PLECS Standalone▶ Coupling the PLECS controls domain with a SPICE power stage using variable-step solver Exercise: Flyback converter with SPICE device models
14:40	Break
15:00	Bringing Simulation and Real Hardware Together (Code Generation Workflow in PLECS) <ul style="list-style-type: none">▶ 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
16:00	Q&A
16:15	End of day
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