PLECS WORKSHOP

Advanced Modeling and Simulation of Power Electronic Systems
University of Florence, March 27th 2026

08:30	**Registration**
09:00	**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
10:30	**Break**
11:00	**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
12:00	**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	**Q&A**
16:45	**End of day**
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