

# PLECS WORKSHOP

Advanced Modeling and Simulation of Power Electronic Systems  
University of Padua, 29.04.2026

12:30	<b>Introduction to PLECS</b> <ul style="list-style-type: none"><li>▶  General use of PLECS Blockset and PLECS Standalone</li><li>▶  Instantaneous switching</li><li>▶  Variable and fixed-step operation</li></ul> Exercise: Modeling a switched-mode power supply
14:00	<b>Solver Settings</b> <ul style="list-style-type: none"><li>▶  Definition of stiff and non-stiff systems</li><li>▶  Explicit and non-explicit solvers</li><li>▶  Stability domains</li><li>▶  Accuracy considerations, step size control</li><li>▶  Proper handling of discontinuities, zero-crossing detection</li></ul>
15:00	<b>Break</b>
15:30	<b>Bringing Simulation and Real Hardware Together</b> <b>(Code Generation Workflow in PLECS)</b> <ul style="list-style-type: none"><li>▶  Automatic code generation for microcontrollers</li><li>▶  Plant code generation for the RT Box</li><li>▶  Nanostep®, FlexArray and CPU solver engines</li><li>▶  Real-time simulation with 4ns step size for MHz switching</li></ul> Demonstration: HIL testbench with microcontroller and RT Box
16:45	<b>Q&amp;A</b>
17:00	<b>End of day</b>
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