

PLECS WORKSHOP

Advanced Modeling and Simulation of Power Electronic Systems Day 1
Fraunhofer ISE Freiburg, January 27th, 2015

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| 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 |
| 10:15 | 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 & Magnetic Modeling & Simulation <ul style="list-style-type: none">▶ Switching & conduction loss descriptions▶ Combined electrical-thermal simulation▶ Magnetic modeling in PLECS Exercise: Thermal modeling of a buck converter, magnetic modeling of a forward converter |
| 14:45 | Break |
| 15:00 | Mechanical Modeling in PLECS <ul style="list-style-type: none">▶ Simulation of electromechanical systems▶ Inelastic collisions Exercise: Modeling an electric vehicle using the PLECS mechanical domain Code Generation PLECS Web-based Simulation <ul style="list-style-type: none">▶ Introduction and demonstration Existing examples |
| 16:00 | End of day |
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