

## Workshop "EMC in Power Electronics"

Prof Jean-Luc SCHANEN, G2ELab, Univ Grenoble Alps, France

This workshop intends giving power electronics engineers, PHD and Master Students some basic notions about ElectroMagnetic Compatibility dedicated to Power Electronics Converters.

It is not possible within a short course to provide an overview off all EMC-related phenomena faced by Power Electronics Engineers. Therefore, the focus will be put especially on EMC Filter design. The outline of this workshop will be as follows:

- Introduction: basic notions on EMC (30mn)
  - Introduction, examples
  - Measurement Standards, Units
  - Common Mode / Differential Mode,
- EMC sources in power Electronics and main disturbance modes (45mn)
  - The EMC switching cell
  - Switching waveforms and frequency content
- EMC Filter Design (1h00)
  - EMC Filter topology
  - Designing a basic EMC Filter
  - EMC Filter Implementation
- Imperfection of EMC filter Components (45mn)
  - Imperfection of Capapacitor
  - Imperfection of Magnetic components
  - Example: Impact on EMC filter attenuation