



July 4-6th 2017

Toulouse, France

Special Session on EMR AND OTHER GRAPHIC DESCRIPTIONS: APPLICATION TO EVS AND HEVS

organized by MEGEVH (French Network on EVs and HEVs)

Chairman: Dr. Walter LHOMME, University of Lille 1 (France)

Walter.Lhomme@univ-lille1.fr

Co-chair: Prof. João Pedro TROVÃO, Université de Sherbrooke (Canada)

Joao.Trovao@USherbrooke.ca

Call for Papers

One of the key issues in the development of EVs and HEVs is the control design of such complex systems, which are composed of multi-sources and multi-subsystems. Model-based control design approaches provide an efficient mean to meet the challenges in front of designers, such as shrinking development times and growing design complexity. The general steps in model-based control design process are: system modeling, control analysis and tuning, system and control simulation, experimental validation, and finally control deployment.

At the system modeling step, different graphical modeling formalisms can be used, such as Bond Graph, Power Oriented Graph (POG), and Energetic Macroscopic Representation (EMR). These graphical formalisms draw on various principles and highlight different properties of multi-domain systems. Using these formalisms, designing and analyzing a system can often be undertaken using only a pencil and paper. Designers can thus focus on the interaction among components or subsystems rather than on the implementation details of their models on particular software.

As an energy-based graphical tool, EMR respects integral causality, highlights energy properties of the power components such as energy storage, energy conversion and energy distribution, and provides a global energetic view of systems. Due to these features, inversion-based control can be deduced from EMR. (www.emrwebsite.org)

The aim of this special session is to present different graphical descriptions, including EMR, applied to HEVs or/and EVs to highlight the interest of each one.

Topics of interest include, but are not limited to:

- ✓ Graphical tools for modeling;
- ✓ Graphical tools for control design;
- ✓ Graphical toolbox or software for study and/or control of electrical or/and hybrid vehicles;
- ✓ Graphical interface for simulation of electrical or/and hybrid vehicles.

Deadlines:

Submission of abstracts: December 1st, 2016

Notice of acceptance: April 1st, 2017

Submission of full papers: May 20th, 2017

All the instructions for abstracts are included in the conference website: www.electrimacs2017.fr