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Clean Tech for Transportation

<http://www.vppc2010.org/>



Special Session on

“EMR AND OTHER GRAPHICAL DESCRIPTIONS”

organized by **MEGEVH** (French Network on HEVs)

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Call for Papers

One of the key issues in the development of Electric Vehicles (EVs) and Hybrid Electric Vehicles (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), Causal Ordering Graph (COG) and Energetic Macroscopic Representation (EMR). These graphical formalisms draw on various principles and highlight different properties of multiphysical 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 softwares.

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. (<http://l2ep.univ-lille1.fr/commande/emr-2009/iw-presentation.htm>)

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 and digests:	March 15, 2010
Notice of acceptance:	April 15, 2010
Submission of full papers:	June 15, 2010
Deadline for registration:	July 30, 2010

All the instructions for abstracts are included in the conference website <http://vppc2010.org/> :

- Special Session title, paper title, authors, affiliation(s), mailing and e-mail address(es),
 - corresponding author clearly identified,
- Abstract of 100-300 words and digest of 3-5 pages.