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Wrapping DEVS de modèles IP dans MECSYCO pour la co-simulation de systèmes cyber-physiques

January 2017

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**Using the CD++ DEVS Toolkit to Develop Petri Nets**

Article [Full-text available](#)

Aug 2002

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**Approche multi-agent pour la multi-modélisation et le couplage de simulations : application à l'étude des influences entre le fonctionnement des réseaux ambiants et le comportement de leurs utilisateurs**

Thesis

Sep 2011



pour contexte l'étude des interactions entre le fonctionnement des réseaux ambiants (réseaux pair-à-pair et réseaux mobiles ad hoc networks) et les comportements de leurs usagers (mobilité, partage d'un...

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### Environnement Multi-agent pour la Multi-modélisation et Simulation des Systèmes Complexes

Thesis

Nov 2015

 Benjamin Camus

Ce travail de thèse porte sur l'étude des systèmes complexes par une démarche de modélisation et simulation (M&S). La plupart des questionnements sur ces systèmes nécessitent de prendre en compte plusieurs points de vue simultanément. Il faut alors considérer des phénomènes évoluant à des échell...

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### Co-Simulation of IP Network Models in the Cyber-Physical Systems Context, using a DEVS-based Platform

Conference Paper

Apr 2016

 Julien Vaubourg ·  Vincent Chevrier ·  Laurent Ciarletta

Cyber-Physical Systems (smart grids, cities, homes, etc.) are composed of computing resources, actuators and sensors, connected through IP networks. These IP networks involve many technologies. In order to help designing and evaluating these systems, we are studying the modeling and simulation of ...

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### Simulation of Smart-Grid Models using Quantization-Based Integration Methods

Conference Paper

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Mar 2014

 Xenofon Floros ·  Federico Bergero ·  Nicola Maria Ceriani · [...] ·  François Cellier

Concepts such as smart grids, distributed generation and micro-generation of energy, market-driven as well as demand-side energy management, are becoming increasingly important and relevant as emerging trends in the design, management and control of energy systems. Appropriate modeling and...

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## Multi-agent Multi-Model Simulation of Smart Grids in the MS4SG Project

Conference Paper

Full-text available

Jun 2015

 Julien Vaubourg ·  Yannick Presse ·  Benjamin Camus · [...] ·  Hugo Morais

This paper illustrates how multi-agent system can help in the modeling and the simulation of smart-grids in the context of MS4SG, a joint project between LORIA-INRIA and EDF R&D. In this case, smart-grids simulation needs to integrate together pre-existing and heterogeneous models and their simulation...

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## Considering a Multi-Level Model as a Society of Interacting Models: Application to a Collective Motion Example

Article

Mar 2015 · Journal of Artificial Societies and Social Simulation, The

 Benjamin Camus ·  Christine Bourjot ·  Vincent Chevrier

As they involve relationships between interacting individuals and groups, social systems can be described at different levels of resolution. In a number of modeling cases, only one of these levels is explicitly represented. In order to study phenomena where both individual and collective representation...

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## "Combining DEVS with Multi-agent Concepts to Design and Simulate Multi-models of Complex Systems

Conference Paper

Full-text available

Apr 2015

 Christine Bourjot ·  Vincent Chevrier ·  Benjamin Camus

We are interesting in the modeling and simulation of complex systems. Most modeling questions about complex systems can only be answered by representing the system as a set of interacting models: a multi-model. Such a multi-model may be heterogeneous as composed of models representing the...

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## System Theoretic Formalisms for Combined Discrete-Continuous System Simulation

[Article](#) [Full-text available](#)

Oct 1991 · International Journal of General Systems

 Herbert Prähofer

In this paper we present an approach to combined discrete-continuous modelling which can be used to model and simulate an intelligent multi-layer control architecture as can be found in high autonomy systems. The modelling approach is based on system theoretical concepts; the three system...

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## DEVS coupling of spatial and ordinary differential equations: VLE framework

[Article](#)

Jan 2005

 Gauthier Quesnel ·  Raphaël Duboz ·  David Versmisse ·  Eric Ramat

Le but de cet article est de démontrer la capacité des méthodes de type quantification de variables et l'extension Cell-DEVS pour la spécification DEVS des automates cellulaires pour la résolution numérique d'equations différentielles aux dérivées par-tielles. L'intérêt est triple : gagner du temps de calcul sous...

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## Discrete Event Simulation of Hybrid Systems

[Article](#)

Jan 2004 · SIAM Journal on Scientific Computing

 Ernesto Kofman

This paper describes the quantization-based integration methods and extends their use to the simulation of hybrid systems. Using the fact that these methods approximate ordinary differential equations (ODEs) and differential algebraic equations (DAEs) by discrete event systems, it is shown ho...

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