Conference program

ELECTRIMACS 2011

Cergy-Pontoise, France / 6-8 June 2011

Sponsor: IMACS

Technical co-sponsors: IEEE Industrial Electronics Society, European Power Electronics and Drives Association

Welcome message

The objectives of the 10th International Conference on Modeling and Simulation of Electric Machines, Converters and Systems are to provide scientific and professional interactions for the advancement of the modeling and simulation in electrical power engineering. 121 technical papers are presented in the areas of computer-aided design and optimization, control, modeling, simulation and monitoring of power systems, static power converters, electrical machines, electromechanical systems and drives. The three keynote papers present the most recent results and discuss the remaining challenges in the field of permanent magnet synchronous wind generators, supervision of hybrid energy sources and optimal control of photovoltaic arrays. The technical program includes also five special sessions on control of power systems, analytical models in electromagnetic devices, energy harvesting, smart building and energy management and vibrations and acoustic noise of electrical devices.

On behalf of the IMACS TC 1 Modeling and Simulation of Electrical Machines Welcome to Paris!

Topics of interest

T1: Modeling & Simulation

- Modeling Methods and software development
- Modeling and Simulation of control methods
- Modeling and Simulation of power systems
- Modeling and Simulation of power electronics and drives
- Modeling and Simulation of electrical machines and transformers
- Simulation Methodologies for design and analysis of electromagnetic devices

T2: Design & Optimization

- Computer aided design Methods
- Optimization Methods
- System identification
- Multiphysics issues
- Design & Optimization of storage systems
- Design & Implementation of actuators and generators
- Design & Implementation of power systems and transformers

T3: Implementation & Analysis

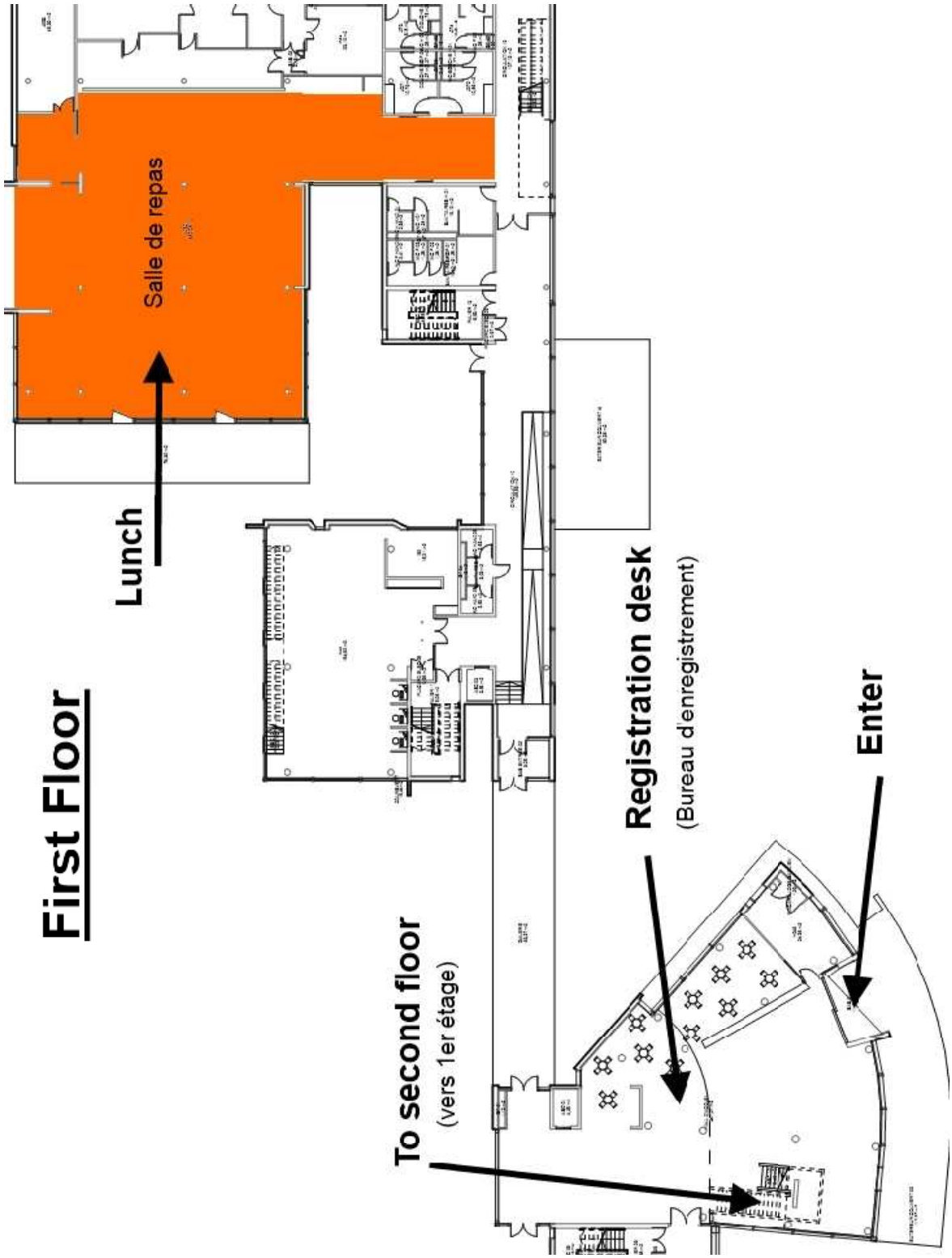
- Electromagnetic compatibility
- Power quality
- Real-time simulation methods
- Digital implementation & System integration
- Hardware-in-the-Loop Emulation
- Emerging Electrical Technologies
- Sensors

Special Sessions

- Smart Building and Energy Management
- The Control of Power Systems
- Analytical Models in Electromagnetic Devices
- Eco-design and Life Cycle Analysis
- Vibrations and Acoustic Noise of Electrical Devices
- *Energy Harvesting*

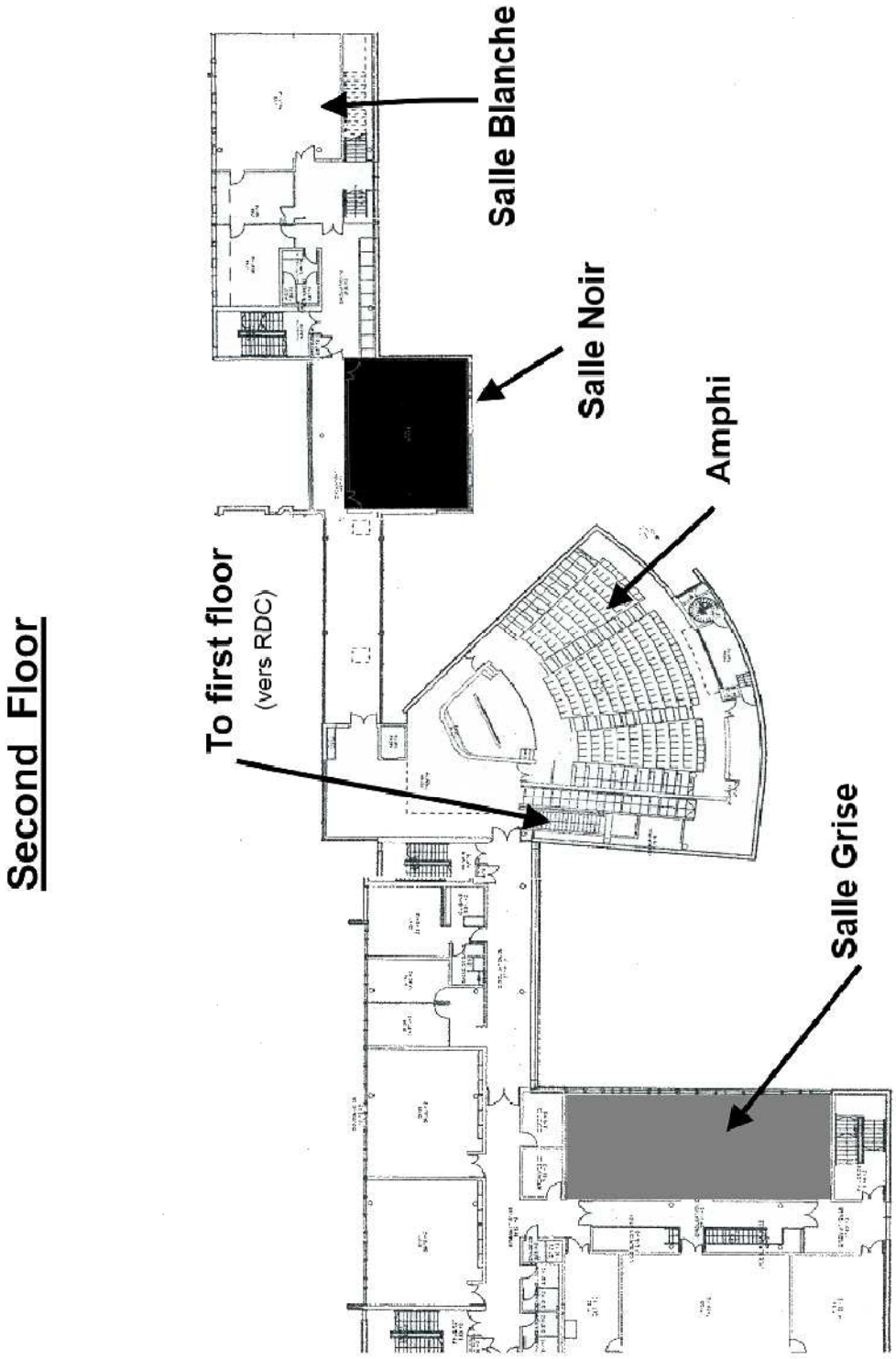
FLOOR MAP

1st Floor



FLOOR MAP

2nd Floor



Monday, June 6 2011

8h00	***Registration & Welcome***		
9h00	**Keynote 1 I. BOLDEA ROOM: AMPHITHÉATRE**		
	RT1 - Modeling & Simulation (S1 - Control & real time) ROOM: AMPHITHÉATRE	**RT2 - Design & Optimization (S1 - Optimization methods) ROOM: SALLE GRISE**	**Special Session 3 - Control of Power Systems (s1 - Magnetic devices control) ROOM: SALLE BLANCHE**
10h00	em2011R110056	em2011R120018	em2011S230025
10h20	em2011R110064	em2011R120036	em2011S230054
10h40	em2011R110072	em2011R120078	em2011S230079
11h00-11h20	Coffee break		
11h20	em2011R110145	em2011R120152	em2011S230147
11h40	em2011R110176	em2011R120161	em2011S230151
12h00	em2011R110179	em2011R120180	
12h20-14h00	Lunch		
	RT1 - Modeling & Simulation (S2 - Software components) ROOM: AMPHITHÉATRE	**RT2 - Design & Optimization (S2 - System optimization) ROOM: SALLE GRISE**	**Special Session 3 - Control of Power Systems (s2 - Renewable energy & microgrids) ROOM: SALLE BLANCHE**
14h00	em2011R110071	em2011R120063	em2011S230118
14h20	em2011R110077	em2011R120081	em2011S230120
14h40	em2011R110098	em2011R120117	em2011S230129
15h00	em2011R110107	em2011R120125	em2011S230168
15h20-15h40	Coffee break		
	RT1 - Modeling & Simulation (S3 - Synchronous Machine) ROOM: AMPHITHÉATRE	**RT2 - Design & Optimization (S3 - Pow. Elec. & electrical machines) ROOM: SALLE GRISE**	**Special Session 4 (S1) - Analytical Models in Electromagnetic Devices ROOM: SALLE BLANCHE**
15h40	em2011R110052	em2011R120012	em2011S240055
16h00	em2011R110065	em2011R120046	em2011S240173
16h20	em2011R110124	em2011R120066	em2011S240204
16h40	em2011R110140	em2011R120119	em2011S240181
17h00		em2011R120143	em2011S240154
17h30-19h00	Welcome party		

Tuesday, June 7 2011

9h00	**Keynote 2 B. ROBYNS ROOM: AMPHITHÉATRE**		
	RT1 - Modeling & Simulation (S4 - Power electronics 1) ROOM: SALLE GRISE	**RT1 - Modeling & Simulation (S5 - Transportation) ROOM: AMPHITHÉATRE**	**Special Session 7 - Energy Harvesting ROOM: SALLE BLANCHE**
10h00	em2011R110015	em2011R110041	em2011S270095
10h20	em2011R110021	em2011R110082	em2011S270130
10h40	em2011R110038	em2011R110101	em2011S270162
11h00-11h20	Coffee break		
11h20	em2011R110048	em2011R110106	em2011S270190
11h40	em2011R110084	em2011R110123	em2011S270191
12h00	em2011R110097	em2011R110172	em2011S270223
12h20-14h00	Lunch		
	RT1 - Modeling & Simulation (S6 - Special machines & actuators) ROOM: AMPHITHÉATRE	**RT3 -Implementat° & Analysis (S1 - Sensors and Power Electronics Implementation) ROOM: SALLE GRISE**	**Special Session 2 - Smart Building & En. Management ROOM: SALLE BLANCHE**
14h00	em2011R110047	em2011R130028	em2011S220067
14h20	em2011R110070	em2011R130150	em2011S220076
14h40	em2011R110087	em2011R130166	em2011S220096
15h00	em2011R110092	em2011R130177	em2011S220157
15h20-15h40	Coffee break		
	RT1 - Modeling & Simulation (S7 - Magnetics systems) ROOM: AMPHITHÉATRE	**RT3 - Implementat° & Analysis (S2 - Machine control implementation) ROOM: SALLE GRISE**	**Special Session 6 - Vibrations and Acoustic Noise of Elec. Devices ROOM: SALLE BLANCHE**
15h40	em2011R110033	em2011R130014	em2011S260027
16h00	em2011R110057	em2011R130019	em2011S260061
16h20	em2011R110068	em2011R130083	em2011S260156
16h40	em2011R110040	em2011R130109	em2011S260170
17h00		em2011R130178	
19h45-23h00	Banquet		

Wednesday, June 8 2011

9h00	**Keynote 3 G. SPAGNUOLO ROOM: AMPHITHÉATRE**		
	RT1 - Modeling & Simulation (S8 - Power electronics 2) ROOM: AMPHITHÉATRE	**RT1 - Modeling & Simulation (S9 - Fault diagnosis) ROOM: SALLE GRISE**	**Special Session 3 - Control of Power Systems (S3 - Power electronics control) ROOM: SALLE BLANCHE**
10h00	em2011R110060	em2011R110136	em2011S230011
10h20	em2011R110112	em2011R110139	em2011S230044
10h40	em2011R110131	em2011R110144	em2011S230115
11h00-11h20	Coffee break		
11h20	em2011R110155	em2011R110146	em2011S230153
11h40	em2011R110165	em2011R110158	em2011S230189
12h00	em2011R110219	em2011R110175	em2011S230103
12h20-14h00	Lunch		
	RT1 - Modeling & Simulation (S10 - Machine Control) ROOM: AMPHITHÉATRE	**RT1 - Modeling & Simulation (S11 - Induction motor & Renewable energy modelling) ROOM: SALLE GRISE**	**Special Session 4 (S2) - Analytical Models in Electromagnetic Devices ROOM: SALLE BLANCHE**
14h00	em2011R110104	em2011R110045	em2011S240224
14h20	em2011R110073	em2011R110050	em2011S240135
14h40	em2011R110137	em2011R110134	em2011S240110
15h00	em2011R110163	em2011R110059	em2011S240159
15h20-15h40	Coffee break		
15h40	em2011R110183	em2011R110127	em2011S240218
16h00		em2011R110149	em2011S240164
16h30	Cloture session		

Monday, June 6 2011

RT1 - Modeling & Simulation (S1 – Control é real time) - ROOM: AMPHITHÉATRE

Chairmen: K. Al-Haddad, B. Allard

10h00 **em2011R110056**
REAL TIME SIMULATOR FOR UNDERACTUATED ROBOTIC SYSTEMS
Aydemir Arisoy, Kemal Bayrakceken, Metin Gokasan, Seta Bogosyan,
Turkish Air Force Academy

10h20 **em2011R110064**
A DSP-BASED IMPLEMENTATION OF AN INSTANTANEOUS CURRENT CONTROL FOR A THREE-PHASE SHUNT HYBRID POWER FILTER
S. Rahmani, Ab. Hamadi1, K. Al-Haddad, and A. I. Alolah
Canada Research Chair in Energy Conversion and Power Electronics CRC-ECPE, Canada

10h40 **em2011R110072**
SYSTEM MODELLING OF A THREE-PHASE VOLTAGE INVERTER SWITCH LOSS COMPUTATION WITH SEVERAL SIMULATION STEPS
Didier Boeda, Laurent Gerbaud, Bérenger Favre, Jérémy Malaizé
G2Elab (Grenoble Electrical engineering), UMR 5269 INPG/UJF-CNRS, France

11h20 **em2011R110145**
ZTN OBSERVABILITY FOR PARALLEL MULTI-CELL CHOPPER
B. Amghar, M. Darcherif, J-P. Barbot
EPMI, Ecole d'ingénieurs, France

11h40 **em2011R110176**
RECONFIGURABLE FLOATING-POINT ENGINES FOR THE REAL-TIME SIMULATION OF PECS: A HIGH-SPEED PMSM DRIVE CASE STUDY
T. Ould Bachir, C. Dufour, J.P. David, J. B.elanger, J. Mahseredjian
´
Ecole Polytechnique de Montréal, Dep. of Electrical Engineering, Canada

12h00 **em2011R110179**
FPGA-BASED REAL-TIME SIMULATION OF MULTILEVEL MODULAR CONVERTER HVDC SYSTEMS
L.-A. Grégoire1, J. Bélanger1, Wei Li
Opal-RT, Montréal, Québec, Canada

RT1 - Modeling & Simulation (S2 - Software components) ROOM: AMPHITHÉATRE

Chairmen: L. Gerbaud, H. Le-Huy

14h00 **em2011R110071**
MODELING OF POWER SEMICONDUCTORS IN VHDL-AMS FOR EMI SIMULATIONS
Slim Hrigua, Cyrille Gautier, Bertrand Revol, François Costa
SATIE, ENS CACHAN, France

14h20 **em2011R110077**
UNIFIED MODELLING TECHNIQUE USING VHDL-AMS AND SOFTWARE COMPONENTS
A. Rezgui, L. Gerbaud, B. Delinchant, R.Barrak, A.Ghazel
Grenoble Electrical Engineering Lab (G2ELAB), France

14h40 **em2011R110098**
NEW SIMULINK LIBRARY FOR SOM NEURAL NETWORK DESIGN AND FPGA IMPLEMENTATION
A. Tisan, M. Cirstea, S. Cirstea
Anglia Ruskin University, Cambridge, UK

15h00 **em2011R110107**
COMPLETE MODELING AND SIMULATION OF A SERIES-RESONANTHALF-BRIDGE INVERTER USING SIMULINK PSPICE INTERFACE
Magdy Saoudi1, Diego Puyal2, Daniel Antón2 and Arturo Mediano
Aragon Institute for Engineering Research (I3A), University of Zaragoza, 50018 Zaragoza, Spain

RT1 - Modeling & Simulation (S3 – Synchronous machines) ROOM: AMPHITHÉATRE

Chairmen: I. Boldea, H. Ben Ahmed

15h40 **em2011R110052**
ELECTROMAGNETIC SIMULATION OF LARGE HYDRO ALTERNATOR
A. B. M. Aguiar1, A. Merkhouf, M. Bélec, C. Hudon2, K. Al-Haddad
ETS, École de Technologie Supérieure, Montréal-Québec, Canada

16h00 **em2011R110065**
SYNCHRONOUS MACHINE PARAMETER IDENTIFICATION VIA SLIDING MODE A COMPARISON OF TWO APPROACHES
A. R. MEGHNOUS, M. T. PHAM, X. LIN-SHI
Laboratoire Ampére, UMR CNRS 5005, Université de Lyon, France

16h20 **em2011R110124**
LUMPED PARAMETER BASED THERMAL ANALYSIS OF A DIRECT DRIVEN PERMANENT MAGNET WIND GENERATOR UTILIZING DOUBLE RADIAL AIR COOLING
J. Nerg and V. Ruuskanen
LUT-Energy, Lappeenranta University of Technology, P.O. Box 20, 53851 Lappeenranta, Finland

16h40 **em2011R110140**
MULTI-PHYSICS LUMPED MODELS FOR THE PERMANENT MAGNET SYNCHRONOUS MACHINE
N. Bracikowski, M. Hecquet, P. Brochet
Univ. Lille Nord de France, ECLille, L2EP, F-59650 Villeneuve d'Ascq, France

RT2 - Design & Optimization (S1 - Optimization methods) ROOM: SALLE GRISE

Chairmen: B. Dehez, M. Hecqet

10h00 **em2011R120018**
TOPOLOGY OPTIMIZATION METHOD BASED ON ORIENTED IRON MICROSTRUCTURES FOR THE DESIGN OF ELECTROMAGNETIC DEVICES
T. Labbé, B. Dehez
Universit´e catholique de Louvain, Belgium

10h20 **em2011R120036**
MULTI-OBJECTIVE DESIGN OPTIMIZATION OF A HYBRID PV-WIND-BATTERY SYSTEM
Dhaker ABBES, André MARTINEZ, Gérard CHAMPENOIS, Jean Paul GAUBERT
EIGSI, 26 rue de vaux de Foletier, 17041 La Rochelle Cedex France

10h40 **em2011R120078**
MANIFOLD MAPPING OPTIMIZATION WITH OR WITHOUT TRUE GRADIENTS
B. Delinchant, D. Lahaye, F. Wurtz, J.-L. Coulomb
Electrical Engineering Lab - G2ELab, Grenoble University, France

11h20 **em2011R120152**
OPTIMIZATION OF FUZZY LOGIC SUPERVISOR USING EXPERIMENTAL DESIGN AND GENETIC ALGORITHM FOR EMBEDDED ELECTRICAL POWER SYSTEMS
S. Breban, C. Saudemont, S. Vieillard, B. Robyns
University Lille Nord de France, Laboratoire d'Electrotechnique et d'Electronique de Puissance, France

11h40 **em2011R120161**
PARAMETERS TUNING METHODOLOGY OF FUZZY LOGIC SUPERVISORS FOR HYBRID GENERATING SYSTEMS WITH EXPERIMENTAL DESIGNS
F. Alkhalil, F. Colas, and B. Robyns
Laboratoire d'Electrotechnique et d'Electronique de Puissance de Lille (L2EP), France

12h00 **em2011R120180**
OPTIMAL DESIGN OF ELECTROMAGNETIC DEVICES DEVELOPMENT OF AN EFFICIENT OPTIMIZATION TOOL BASED ON SMART MUTATION OPERATIONS IMPLEMENTED IN A GENETIC ALGORITHM
Jonathan Denies, Hamid Ben Ahmed and Bruno Dehez
CEREM, Université Catholique de Louvain, Belgium – SATIE, France

RT2 - Design & Optimization (S2 - System optimization) ROOM: SALLE GRISE

Chairmen: L. Vido, C. Espanet

14h00 **em2011R120063**
OPTIMIZING THE PERFORMANCE OF OPTICAL DATA STORAGE DRIVES BASED ON A NOVEL SEESAW-SWIVEL ACTUATOR FOR A HOLOGRAPHIC MODULE
Po-Chien Chou, Yu-Cheng Lin, Stone Cheng
Department of Mechanical Engineering, National Chiao Tung University Hanchu, Taiwan

14h20 **em2011R120081**
A PIEZOELECTRIC FLEXIBLE BEAM BASED TWO-DIMENSIONAL ACTUATOR FOR OPTICAL SENSOR COMPENSATION
Yu-Cheng Lin, Po-Chien Chou, Stone Cheng
Department of Mechanical Engineering, National Chiao Tung University Hanchu, Taiwan

14h40 **em2011R120117**
BI-CRITERIA OPTIMIZATION DESIGN OF AN INTERIOR PERMANENT MAGNET SYNCHRONOUS MACHINE FOR HYBRID ELECTRIC VEHICLE APPLICATION
P. H. Nguyen, E. Hoang, M. Gabsi
SATIE, ENS Cachan, France

15h00 **em2011R120125**
A DYNAMIC COMPRESSION FOR GPS DATA
MA Qinglu, LIU Weining, SUN Dihua, DAN Yufang, Saleem-Ullah Lar
College of Computer Science, Chongqing University, Chongqing, 400044, China, INSA Lyon, France

RT2 - Design & Optimization (S3 - Power Electronics & Electrical machines) ROOM: SALLE GRISE

Chairmen: Y. Perriard, JP. Louis

15h40 **em2011R120012**
RIGOROUS CHOICE OF OPTIMAL ISOLATED DC-DC CONVERTER TOPOLOGIES USING RESPONSE SURFACE METHOD
C. Versèle, O. Deblecker, S. Coorevits and J. Lobry
Electrical Engineering Department, University of Mons, 31 Bd Dolez, 7000 Mons, Belgium

16h00 **em2011R120046**
ADVANCED COORDINATED CONTROL FOR A HYDRO-POWER VALLEY
J. Z´arate Fl´orez J.J. Martinez, G. Besançon, D. Faille
Electricité de France-EDF R&D, 6 Quai Watier, 78400 Chatou, France

16h20 **em2011R120066**
OPTIMAL SIZING OF GRID CONNECTED MICRO-GRID USING PARTICLE SWARM OPTIMIZATION CONSIDERING INTERRUPTIBLE LOADS
H. Hassanzadehfard, S. M. Moghaddas-Tafreshi, S.M.Hakimi
Faculty of Electrical Engineering, K. N. Toosi University of technology, Iran, Tehran

16h40 **em2011R120119**
DESIGN OF POWER CONVERTER DEVICES EMBEDDED IN A HYBRID EMERGENCY NETWORK FOR MORE ELECTRICAL AIRCRAFT
R. Rigo Mariani, F. Lacressonniere, G. Fontes, X. Roboam
Université de Toulouse; LAPLACE, France

17h00 em2011R120143
COMPARISON METHODOLOGY OF OFFSHORE WIND FARM ARCHITECTURES
P. Monjean, J. Delanoë, J. Sprooten, C. Saudemont, B. Robyns
CONVERTEAM, 24 Avenue du Maréchal Juin, 90000 Belfort, France

Special Session 3 - Control of Power Systems (s1 - Magnetic devices control) ROOM: SALLE BLANCHE

Chairmen: N. Patin, G. Champenois

10h00 **em2011S230025**
RAPID PROTOTYPING OF A PREDICTIVE DIRECT TORQUE CONTROLLER FOR AN INDUCTION MOTOR
A. Benzaioua and M. Ouhrouche
Electric Machines Identification and Control Laboratory (EMICLab), University of Quebec, Canada

10h20 **em2011S230054**
CONTROL OF A HYBRID EXCITATION SYNCHRONOUS GENERATOR SUPPLYING AN ISOLATED LOAD
R. Mbayed, G. Salloum, L. Vido1, E. Monmasson, M. Gabsi
SATIE, France

10h40 **em2011S230079**
DIRECT CONTROL OF DOUBLE-FED INDUCTION GENERATOR USING BACK-TO-BACK CONVERTERS FOR VARIABLE SPEED WIND POWER GENERATION
R. Zaimeddine, T. Undeland
NTNU, Norwegian University of Science and Technology, O.S. Bragstad 2E, 7491, Trondheim, Norway

11h20 **em2011S230147**
Fuzzy Logic Based Power Transformer Fault Diagnosis
SOUAHLIA Seifeddine, BACHA Khmais, GOSSA Moncef
Ecole Supérieure des Sciences et Techniques de Tunis (ESSTT) Tunis

11h40 **em2011S230151**
FLATNESS BASED CONTROL OF VARIABLE SPEED WIND TURBINE GENERATOR
H. Alhamed Aldwaihi, E. Delaleau
Institut supérieur d'électronique et du numérique, Brest, France

Special Session 3 - Control of Power Systems (s2 - Renewable energy & microgrids) ROOM: SALLE BLANCHE

Chairmen: B. Robyns, J. Belhadj

14h00 **em2011S230118**
EXPERIMENTAL SOLAR SENSOR DEVELOPMENT FOR PHOTOVOLTAIC TWO-AXIS TRACKING SYSTEMS
G. Tina, F. Arcidiacono
D.I.E.E.S. University of Catania, Italy

14h20 **em2011S230120**
SELECTIVE COMPENSATION OF VOLTAGE HARMONICS IN A GRID-CONNECTED MICROGRID
M. Savaghebi, J. M. Guerrero, A. Jalilian, J. C. Vasquez, and Tzung-Lin Lee

14h40 **em2011S230129**
CONTROL OF GRID CONNECTED NPC CONVERTER USING LQG REGULATION FOR RENEWABLE ENERGY APPLICATIONS
M. Abbes, J. Belhadj
University of Tunis Elmanar, Tunisia

15h00 **em2011S230168**
INVESTIGATION OF THE BEHAVIOR OF A THREE PHASE GRID-CONNECTED PHOTOVOLTAIC SYSTEM TO CONTROL ACTIVE AND REACTIVE POWER WITH DPC
I. Hamzaoui, F. Bouchafaa, A. Hadjammar
Laboratory of Instrumentation, Faculty of Electronics and Computer, Algiers, Algeria

Special Session 4 - Analytical Models in Electromagnetic Devices (S1) - ROOM: SALLE BLANCHE

Chairmen: G. Barakat, M. Gabsi

15h40 **em2011S240055**
ANALYTICAL PREDICTION OF COGGING TORQUE IN SURFACE MOUNTED PERMANENT MAGNET MOTORS
F. Baudart, E. Matagne, B. Dehez, F. Labrique
CEREM, Université Catholique de Louvain, Louvain

16h00 **em2011S240173**
SLOTTING EFFECT IN PERMANENT-MAGNET MOTORS VIA A 2-D EXACT SUB-DOMAIN MODEL
F. Dubas and C. Espanet
ENISYS Department, University of Franche-Comte (UFC), FEMOT-ST Institute, Belfort, France

16h20 **em2011S240204**
CALCULATION OF UNBALANCED MAGNETIC FORCE IN SLOTLESS PM MACHINES
A. Borisavljević, H. Polinder and J.A. Ferreira
Eindhoven University of Technology, Den Dolech 2, 5600MB Eindhoven, The Netherlands

16h40 **em2011S240181**
ANALYTICAL MODEL OF A LINEAR PERMANENT MAGNET ACTUATOR USING A QUASI-3D METHOD
O. de la Barrière, S. Hlioui, H. Ben Ahmed, M. Gabsi, M. LoBue
SATIE, ENS Cachan, CNRS, UniverSud, 61 av du President Wilson, F-94230 Cachan, France

17h00 **em2011S240154**
ANALYTICAL MODELING OF PERMANENT MAGNET ELECTRIC MACHINES FOR ANALYSIS AND DESIGN PURPOSES
Huguette Tiegna, Yacine Amara, Georges Barakat
GREAH, Université du Havre, 25, rue Philippe Lebon - B.P. 1123 - 76063 Le Havre cedex France

Tuesday, June 7 2011

RT1 - Modeling & Simulation (S4 - Power electronics 1) ROOM: SALLE GRISE

Chairmen: I. Nagy, V. Lanfranchi

10h00 **em2011R110015**
A PWM METHOD FOR SEVEN- AND NINE-PHASE OPEN-END WINDING MOTOR DRIVES
N. Bodo, M. Jones, E. Levi
Liverpool John Moores University, School of Engineering, Byrom Street, L3 3AF, Liverpool, United Kingdom

10h20 **em2011R110021**
DESIGN, STUDY, MODELING AND CONTROL OF A SEPIC POWER FACTOR CORRECTOR IN SINGLE-PHASE RECTIFIERS
H. Y. Kanaan and K. Al-Haddad
Université Saint-Joseph, Faculté d'Ingénierie – ESIB, Mar Roukoz, Mkalles, Lebanon

10h40 **em2011R110038**
A SIMPLE MULTI-LEVEL SPACE-VECTOR MODULATION ALGORITHM FOR FIVE-PHASE OPEN-END WINDING DRIVES
M. Jones, W. Satiawan
Liverpool John Moores University, School of Engineering, Liverpool, United Kingdom

11h20 **em2011R110048**
COMPARATIVE STUDY ON SPACE VECTOR MODULATION TECHNIQUES APPLIED IN VOLTAGE SOURCE CONVERTERS OF ULTRAHIGH SPEED INDUCTION MOTOR DRIVES
P. Stumpf1, Z. Varga1, R. K. Jardan1, I. Nagy
Budapest University of Technology and Economics, Hungary

11h40 **em2011R110084**
NOVEL SOFT TRANSITION PUSHPULL CONVERTER: ANALYSIS, MODELING, DESIGN AND IMPLEMENTATION
T G.N.Bahmendra1 N.Lakshminarasamma
´ MS Scholar, Dept of Electrical Engineering, Indian Institute of Technolog,Madras, Chennai, India

12h00 **em2011R110097**
Interleaved DC/DC Converters For Medium Power Applications
S. Barg A. Bennani Ben Abdelghani
University of Tunis El Manar, ENIT- L.S.E., BP 37, 1002 Tunis le Belvédère, Tunisia

RT1 - Modeling & Simulation (S6 – Special machines & actuators) ROOM: AMPHITHÉATRE

Chairmen: E. Levi, P. Maussion

14h00 **em2011R110047**
A NONLINEAR AND LINEAR MODEL OF A HYBRID STEPPING MOTOR
S. Derammelaere, B. Vervisch, F. De Belie, J. Cottyn, G. Van den Abeele, P. Cox,
Technical University College of West-Flanders, Graaf Karel de Goedelaan, Belgium

14h20 **em2011R110070**
Modeling of a multiphase induction system for metal disc heating
M. Souley, J. Egalon, S. Caux, P. Pateau, P. Maussion
Laplace, Université de Toulouse, France

14h40 **em2011R110087**
QUASI-3D FEM ANALYSIS OF AN SINGLE STATOR DUAL PM ROTORS AXIAL SYNCHRONOUS MACHINE FOR HYBRID ELECTRIC VEHICLES
L.N. Tutelea, S.I. Deaconu, I. Boldea, F. Marignetti, G.N. Popa
Politehnica, University of Timisoara, Romania

15h00 **em2011R110092**
STAR AND DELTA COMPLEX DYNAMIC MODELS OF MULTI-PHASE SYNCHRONOUS MOTORS
R. Zanasi, M. Fei
Information Engineering Department, University of Modena and Reggio Emilia, Italy

RT1 - Modeling & Simulation (S7 – Magnetics systems) ROOM: AMPHITHÉATRE

Chairmen: J. Etay, I. Boldea

15h40 **em2011R110033**
DYNAMIC CHARACTERISTIC ANALYSIS OF EDDY CURRENT-DRIVENELECTROMECHANICAL DEVICE USING FVM METHOD
A. Cheriet, M. Feliachi, A. Lakhdari
LGEB Laboratory, Electrical Engineering Department, Biskra University, Algeria

16h00 **em2011R110057**
Order reduced Model of Electrical Systems Using Self-similarity
A. A. AMRANE, N. RETIERE, and D. M. RIU
Grenoble Electrical Engineering Laboratory 961, rue Houille Blanche 38402 St Martin d'Hères, France

16h20 **em2011R110068**
MODELLING AND FAST POSITION CONTROL OF A NEW UNWINDING-WINDING MECHANISM DESIGN
J. Frechard, D. Knittel, P. Dessagne, J.S. Pelle, G. Gaudiot, J. C. Caspar, G. Heitz
CITT, Université de Strasbourg, 17 rue du Mal. Lef`ebvre, 67100 Strasbourg, France

16h40 **em2011R110040**
STUDY ON ELECTROMAGNETIC PUMPING SYSTEMS FOR MOLTEN SALTS,
BASED ON 3D FINITE ELEMENT MODELS
C. Roman, J. Etay, Y. Fautrelle, V. Fireţeanu
EPM_NM Laboratory, POLITEHNICA University, Bucharest, Romania

RT1 - Modeling & Simulation (S5 - Transportation) Room Amphitéatre

Chairmen: A. Bouscayrol, L. Dessaint

10h00 **em2011R110041**
SEMI-ANALYTICAL SIMULATION OF AN EMBEDDED PWM INVERTER DEDICATED TO AUTOMOTIVE APPLICATIONS
N. Patin, T. D. Nguyen, G. Friedrich
LEC, Université de Technologie de Compiègne, Compiègne, France

10h20 **em2011R110082**
SIMULATION MODEL OF AN ADVANCED ELECTRIC POWERTRAIN FOR INDUSTRIAL MILLING MACHINES
Norman Borchardt and Roland Kasper
Otto-von-Guericke-University Magdeburg, Faculty of Mechanical Engineering, Germany

10h40 **em2011R110101**
COMPARATIVE ANALYSIS OF ICEVS, AND DIFFERENT TYPES OF EVS
D. T. Sepsi, P. Stumpf, Z. Varga, R. K. Járdán, I. Nagy
Budapest University of Technology and Economics, Hungary

11h20 **em2011R110106**
SIMULATION OF A FUEL CELL HYBRID EMERGENCY POWER SYSTEM FOR MORE ELECTRIC AIRCRAFT
S. Njoya Motapon, L.-A. Dessaint, S. Liscouet-Hanke and C. Lavoie
Ecole de technologie superieure, Montreal, QC, H3C 1K3, Canada

11h40 **em2011R110123**
IMPROVEMENT OF UNDERCAR SWITCHED RELUCTANCE GENERATOR CHARACTERISTICS BY INCREASE THE PHASE NUMBER AND CHANGE THE NUMBER OF ROTOR POLES
N. Grebennikov, A. Zarifian
´
Rostov State Transport University, Rostov-on-Don, Russia

12h00 **em2011R110172**
DIFFERENT MODELS OF THE TRACTION SYSTEM OF AN AUTOMATIC SUBWAY
L. Horrein, V. Derache, A. Bouscayrol, J. N.Verhille, P. Delarue
Université Lille1, L2EP Lille, 59 655 Villeneuve d'Ascq, France

RT3 - Implementation & Analysis (S1 – Sensor & Power electronics Implementation) ROOM: SALLE GRISE

Chairmen: E. Monmasson, F. Auger

14h00 **em2011R130028**
ANALYSIS OF VOLTAGE FED Z-SOURCE DC-DC CONVERTER IN DISCONTINUOUS CURRENT MODE OPERATION
Çagdas Pekuz and Aydın Ersak
Department of EEE, Middle East Technical University, ANKARA, 06531 Türkiye

14h20 **em2011R310150**
AN AREA-TIME EFFICIENT FPGA IMPLEMENTATION OF ONLINE FINITE-SET MODEL BASED PREDICTIVE CONTROLLERS FOR FLYING CAPACITOR INVERTERS
T. Vyncke, S. Thielemans, J. Melkebeek
Electrical Energy Laboratory (EELAB), Belgium

14h40 **em2011R130166**
High frequency digital control for SEPIC based on FPGA
N. Li, X. Lin-Shi, P. Lefranc, E. Godoy, A. Jaafar, B. Allard
AMPERE Laboratory, CNRS UMR 5005, INSA-Lyon, Villeurbanne, France

15h00 **em2011R130177**
DESIGN OF ADVANCED RESOLVER-TO-DIGITAL CONVERTERS
F: Auger, O: Mansouri, Toudert, A: Chibah
IREENA Pôle Energie, CRTT, 37 Bd de l'Université, BP 406, 44602 Saint-Nazaire cedex, France

RT3 - Implementation & Analysis (S2 – Machine control Implementation) ROOM: SALLE GRISE

Chairmen: IS. Belkhodja, F. Labrique

15h40 **em2011R130014**
OPTIMAL CURRENT WAVEFORMS FOR PERMANENT MAGNET SYNCHRONOUS MACHINES WITH ANY NUMBER OF PHASES IN OPEN CIRCUIT
F. Baudart, E. Matagne, B. Dehez, F. Labrique
CEREM, Université Catholique de Louvain, 3 place du Levant, 1348, Louvain-la-Neuve, Belgium

16h00 **em2011R130019**
OPTIMIZATION OF SYSTEM GENERATOR IMPLEMENTATIONS FOR FPGA-BASED CONTROL SYSTEMS
P. Martín, E. Bueno, Fco. J. Rodríguez, O. Machado, B. Vuksanovic
Department of Electronic, University of Alcala, 28871 Alcalá de Henares, Madrid, Spain

16h20 **em2011R13083**
ADALINE-BASED MECHANICAL PARAMETERS IDENTIFICATION OF INDUCTIONMOTOR
H. Sediki, A. Bechouche, D. Ould Abdeslam and S. Haddad
Department of Electrical Engineering, Mouloud Mammeri University, BP N° 17 RP Tizi Ouzou, Algeria

16h40 **em2011R130109**
ENHANCED DIRECT TORQUE CONTROL USING KALMAN FILTER FOR APPLICATION TO A DOUBLY-FED GENERATOR
H. Chaal and M. Jovanovic
School of Engineering, Northumbria University, Newcastle upon Tyne, UK

17h00 **em2011R130178**
FPGA SOPC BASED SENSORLESS CONTROLLER FOR A SYNCHRONOUS MACHINE USING AN EXTENDED KALMAN FILTER
I. Bahri,L. Idkhajine, E. Monmasson, E. Benkhelifa
SATIE, University of Cergy-Pontoise, CNRS, France

Special Session 7 – Energy Harvesting - ROOM: SALLE BLANCHE

Chairmen: D. Vasic, YP. Liu

10h00 **em2011S270095**
A NOVEL MPPT CHARGE REGULATOR FOR A PHOTOVOLTAIC MOBILE ROBOT APPLICATION
A.D. Grasso, G. M. Tina, C. Ventura
Dipartimento di Ingegneria Elettrica, University of Catania, Italy

10h20 **em2011S270130**
SIZING OPTIMIZATION METHODOLOGY OF A MULTISOURCE GENERATOR THAT HARVEST THE ENERGY IN THE HUMAN ENVIRONMENT
M. Lossec, H. Ben Ahmed, B. Multon
SATIE, ENS CACHAN Bretagne, CNRS, UEB, Avenue R. Schuman, 35170 Bruz, France

10h40 **em2011S270162**
PIEZOELECTRIC ENERGY HARVESTER CIRCUIT FOR CAPACITIVE STORAGE BUFFER
Y. P. Liu, D. Vasic, F. Costa
SATIE, France

11h20 **em2011S270190**
Micro Electret Power Harvester Using a Double-layer Electret Film
Cheng-En Chung, Shun-Chiu Lin, Bor-Shiun Lee, Wen-Jong Wu
National Taiwan University, No. 1, Sec. 4, Roosevelt Road, Taipei, 10617 Taiwan

11h40 **em2011S270191**
A PIEZOELECTRIC MEMS GENERATOR BASED ON STAINLESS-STEEL SUBSTRATE
Y.S. Shih, S. C. Lin, C.E. Chen, B.S. Lee, and W. J. Wu
National Taiwan University, No. 1, Sec. 4, Roosevelt Road, Taipei, 10617 Taiwan

12h00 **em2011S270223**
POTENTIAL OF PIEZO-SEMICONDUCTING NANOSTRUCTURES FOR MECHANICAL ENERGY HARVESTING
O. Graton, G. Poulin-Vittrant, L.-P. Tran Huu Hue, M. Lethiecq
Université François Rabelais de Tours, Blois, France

Special Session 2 – Smart Building & Energy management - ROOM: SALLE BLANCHE

Chairmen: M. Ruellan, B. Delinchant

14h00 **em2011S220067**
ELECTRICAL PERFORMANCE OPTIMIZATION OF AN HVAC DUAL FLOW
Hoang Anh DANG, Benoit DELINCHANT, Sana GAALOUL, Frederic WURTZ
G2Elab, University of Grenoble, ENSE, BP 46-38402 Saint Martin d'Hères, France

14h20 **em2011S220076**
STRONG COUPLING OF A BUILDING THERMAL MODEL WITH A CONTROLLED ELECTICAL HEATER FOR AN HYBRID ENERGY SIMULATION
Sana GAALOUL, Benoît DELINCHANT, Frédéric WURTZ, Stéphane THIERS, Bruno PEUPORTIER
G2Elab, University of Grenoble, ENSE, BP 46-38402 Saint Martin d'Hères, France

14h40 **em2011S220096**
A Novel Copper Optimisation Technique for a Smart Home with Big Bang Big Crunch Algorithm
Potuganti Prudhvi
Dept of Electrical Engineering National Institute of Technology Warangal, India

15h00 **em2011S220157**
ENERGY MANAGEMENT MODELLING FOR BUILDING INTEGRATED MULTI-SOURCE POWER SYSTEM WITH SMART GRID INTERACTION
B. C. Wang, M. Sechilariu, F. Locment
AVENUES-GSU, University of Technology of Compiègne, BP 60319, 60203 Compiègne, France

Special Session 6 – Vibration and Acoustic Noise of Electrical devices - ROOM: SALLE BLANCHE

Chairmen: J. Ojeda, X. Mininger

15h40 **em2011S260027**
RELATIVE SHAFT VIBRATIONS IN SOFT MOUNTED TWO-POLE INDUCTION MOTORS CAUSED BY STATIC ROTOR ECCENTRICITY
U. Werner
Siemens AG, Industry Sector, Drive Technologies Division, Nuremberg, Germany

16h00 **em2011S260061**
VIBRATORY SIMULATION TOOL FOR AN ELECTROMAGNETICALLY EXCITED NON SKEWED ELECTRICAL MOTOR, CASE OF THE WRSM
P. Pellerey, V.Lanfranchi, G.Friedrich
LEC, Université de Technologie de Compiegne, 60200 Compiègne, France

16h20 **em2011S260156**
IMPACT OF ANEW STATOR MAGNETIC CIRCUIT DESIGN ON INDUCTION MACHINE MAGNETIC NOISE
C. DEMIAN, L. PETREA, J.F. BRUDNY, T. BELGRAND
Univ. Lille Nord de France, F-59000 Lille, France

16h40 **em2011S260170**
MODELING OF SRM VIBRATIONS FOR TWO CURRENT CONTROLS
X. Mininger, X. Rain, M. Hilairet, G. Krebs, C. Marchand
Laboratoire de Génie Electrique de Paris (LGEP) / SPEE-Labs, Gif sur Yvette, France

Wednesday, June 8 2011

RT1 - Modeling & Simulation (S8 - Power electronics 2) Room Amphitéatre

Chairmen: S. Pierfrdericii, G. Spagnuolo

10h00 **em2011R110060**
PREDICTING THE ONSET OF BIFURCATION AND STABILITY STUDY OF A HYBRID CURRENT CONTROLLER FOR A BOOST CONVERTER
R. Gavagsaz-Ghoachani, M. Phattanasak, J-P. Martin, S. Pierfederici, B. Davat
GREEN – Nancy Université, Institut National Polytechnique de Lorraine, Nancy, France

10h20 **em2011R110112**
MODELLING, DESIGN AND SIMULATION OF AUXILIARY POWER SUPPORT SYSTEM FOR BACK-UP AND TRANSIENT STABILITY IN A MICRO-GRID ENVIRONMENT USING FUEL CELL AND ULTRA-CAPACITOR
Ghanshyamsinh V Gohil, Vivek Agarwal
Applied Power Electronics Lab, Indian Institute of Technology - Mumbai – 400076, India

10h40 **em2011R110131**
BORDER COLLISION BIFURCATION IN THYRISTORISED DC DRIVE
Biswarup Basak, Sukanya Parui
Department of Electrical Engineering, Bengal Engineering and Science University, West Bengal, INDIA

11h20 **em2011R110155**
METHODOLOGY FOR CONSTRUCTING A COMPACT ELECTRO-THERMAL MODEL FOR IGBT-BASED POWER INVERTERS
J. Antonios, C. Batard, Y. Scudeller, N. Ginot, and M. Machmoum
IREENA, Ecole Polytechnique de l'Université de Nantes, rue Christian Pauc, 44306 Nantes, France

11h40 **em2011R110165**
STRATEGY TO COMPENSATE A BAND TRANSITION IN PHASE DISPOSITION (PD) METHOD FOR PARALLEL CONVERTERS
E. Solano, G. Gateau, A.M. Llor, A. Leredde
´
Université de Toulouse; INPT, UPS; LAPLACE, France

12h00 **em2011R110219**
DEADBEAT-BASED PI CONTROLLER FOR STAND-ALONE SINGLE-PHASE VOLTAGE SOURCE INVERTER USING BATTERY CELL AS PRIMARY SOURCES
T.L. Tiang and D. Ishak
School of Electrical and Electronic Engineering, Universiti Sains Malaysia, Malaysia

RT1 - Modeling & Simulation (S10 – Machine control) ROOM: AMPHITHÉATRE

Chairmen: Y.S. Kung, S. Mariethoz

14h00 **em2011R110104**
SLIDING-MODE CONTROL AND SLIDING-MODE SPEED OBSERVER EXTENDED WITH ADDITIONAL MAGNETIZING REACTANCE ESTIMATOR FOR INDUCTION MOTOR DRIVES
T. Orlowska-Kowalska, G. Tarchala, M. Dybkowski
Wroclaw University of Technology, Wroclaw, Poland

14h20 **em2011R110073**
DESIGN AND SIMULATION OF A SPEED CONTROL IC FOR PMSM DRIVE BASED ON NEURAL FUZZY CONTROL
Ying-Shieh Kung, Nguyen Vu Quynh, Hsin-Hung Chou, Chiu-Pao Tien, Chih-Nan Yen
Department of Electrical Engineering, Southern Taiwan University, Taiwan

14h40 **em2011R110137**
BI-INPUT EXTENDED KALMAN FILTER BASED SPEED-SENSORLESS VECTOR CONTROL OF INDUCTION MOTORS WITH THE ESTIMATIONS OF ROTOR AND STATOR RESISTANCES, LOAD TORQUE, AND INERTIA
M. Barut
Nigde University, Department of Electrical and Electronics Engineering, Nigde, Turkey

15h00 **em2011R110163**
APPLICATION OF ADVANCED NONLINEAR CONTROL CONCEPTS TO INDUCTION MOTOR DRIVES
A.K. Fuchs, S. Mariethoz
Automatic Control Lab., ETH Zürich, CH - 8092 Zürich, Switzerland

15h40 **em2011R110183**
MODEL AND CONTROL OF A HYBRID EXCITATION FLUX SWITCHING MACHINE FOR TORQUE RIPPLE REDUCTION
B. Chareyron, J. Ojeda, GJ. Li, S. Hlioui, M. Gabsi and Y. Li
SATIE, ENS Cachan, Paris XI, CNRS, UniverSud, 61, av Président Wilson, F-94230, Cachan, France

RT1 - Modeling & Simulation (S9 - Fault diagnosis) ROOM: SALLE GRISE

Chairmen: R. Miceli, G. Salloum

10h00 **em2011R110136**
EXPERIMENTAL VERIFICATION OF THE INTER-TURN FAULT SYMPTOMS MODELING FOR THE CONVERTER-FED INDUCTION MOTOR
C.T. Kowalski, M. Wolkiewicz, T. Orlowska-Kowalska
Wroclaw University of Technology, Institute of Electric Machines, Drives and Measurements, Poland

10h20 **em2011R110139**
ECCENTRICITY DETECTION OF THE INDUCTION MOTORS USING GENERAL REGRESSION NEURAL NETWORKS
Pawel Ewert, Marcin Kaminski, Czeslaw T. Kowalski
Wroclaw University of Technology, Institute of Electric Machines, Drives and Measurements, Poland

10h40 **em2011R110144**
POWER QUALITY SAVINGS WITH CONTROLLED FAULT-TOLERANT POWER CONVERTERS
F. Genduso, R. Miceli
Universit`a degli Studi di Palermo, Italia

11h20 **em2011R110146**
MODELLING AND ANALYSIS OF THE INDUCTION MOTOR BEHAVIOUR IN STEADY STATE OPERATION UNDER SEVERAL STATOR FAULTS
M. Bouzid, G. Champenoi, P. Rogeon
LSE-ENIT, University of Tunis El Manar, Tunisia

11h40 **em2011R110158**
WAVELETS AND PARITY EQUATIONS METHODS BASED POSITION SENSOR FAULT DETECTION IN PMSM DRIVES
M. Bourogaoui, H. Berriri, H. Ben Attia Sethom, I. Slama Belkhodja
´
LSE-ENIT, University of Tunis El Manar, Tunisia

12h00 **em2011R110175**
SENSOR FAULT TOLERANT CONTROL FOR WIND TURBINE SYSTEMS WITH DOUBLY FED INDUCTION GENERATOR
H. Berriri, M.W. Naouar and I. Slama-Belkhodja
LSE-ENIT, University of Tunis El Manar, Tunisia

RT1 - Modeling & Simulation (S11 – Induction motor & Renewable energy system modelling) ROOM: SALLE GRISE

Chairmen: T. Orlowska-Kowalska, M. Malinowski

14h00 **em2011R110045**
DYNAMICAL PERFORMANCES OF SENSORLESS VECTOR CONTROL INDUCTION MOTOR DRIVE WITH A NEW ADAPTIVE NEURAL NETWORK SPEED OBSERVER
A.Mechernene, M.Zerikat and S.Chekroun
University of Sciences and Technology of Oran (USTO), Faculty of Electrical Engineering, Algeria

14h20 **em2011R110050**
Additional Losses of Inverter Fed Asynchronous Induction Machines of Traction Drives - Comparison of Modelling and Measurements
Erich Schmidt
Institute of Energy Systems and Electric Drives, Vienna University of Technology, Vienna, Austria

14h40 **em2011R110134**
MODELING OF THE SPEED - SENSORLESS INDUCTION MOTOR DRIVE USING MATLAB AND PSIM SOFTWARE
M. Dybkowski, T. Orlowska-Kowalska, Grzegorz Tarchala
Wroclaw University of Technology, Poland

15h00 **em2011R110059**
EMR MODELLING FOR THE FORECASTING OF THE ACTUAL ENERGY DELIVERED BY A PHOTOVOLTAIC SYSTEM
K. S. AGBLI, M-C. PERA, D. HISSEL, I. DOUMBIA
University of Franche-Comte, FEMTO-ST, UMR CNRS 6174, FCLAB Institute, Belfort, France

15h40 **em2011R110127**
Comparison of Maximum Peak Power Tracking Algorithms for a Small Wind Turbine
R. Kot, M. Rolak, M. Malinowski
Warsaw University of Technology, ul. Koszykowa 75, 00-662 Warsaw, Poland

16h00 **em2011R110149**
GRID CONNECTED FOR PHOTOVOLTAIC ENERGY GENERATION FOR MAXIMUM POWER POINT TRACKING
Ab. Hamadi, S. Rahmani, K. Al-Haddad, and Louis Dessaint
École de Technologie Supérieure, 1100 Notre-Dame, Montréal, Québec H3C 1K3, Canada

Special session 3 – Control of Power Systems (S3 – Power electronics control) ROOM: SALLE BLANCHE

Chairmen: J.M. Guerrero, W. Naouar

10h00 **em2011S230011**
ADAPTIVE SLIDING MODE CONTROL OF INTERLEAVED PARALLEL BOOST CONVERTER FOR FUEL CELL ENERGY SOURCES
H. El Fadil, F. Giri, J.M. Guerrero, Y. Ben Driss
GREYC Lab, UMR CNRS, University of Caen, 14032, Caen, France

10h20 **em2011S230044**
UNIVERSAL WIND TURBINE WORKING GRID-CONNECTED AND STAND-ALONE
M. Rizo, M. Liserre, E. Bueno and F.J. Rodríguez
University of Alcala, Ctra. Madrid-Barcelona, Km. 33,600, Alcalá de Henares, Spain

10h40 **em2011S230115**
ACOMPOSITE CONTROL SCHEME FOR OUTPUT VOLTAGE REGULATION OF A SWITCHED CAPACITOR DC-DC CONVERTER WITH A LARGE INPUT VOLTAGE VARIATION
Pradeep K. Peter, Vivek Agarwa
Power Electronics Division, Indian Space Research Organization, India

11h20 **em2011S230153**
SINGULAR PERTURBATION CONTROL FOR COORDINATION OF CONVERTERS IN A FUEL CELL SYSTEM
M. Ghanes, M. Hilairet, J-P. Barbot, O. Bethoux
ECS-Lab ENSEA, EA 3649, Cergy-Pentoise, France

11h40 **em2011S230189**
FPGA-BASED SLIDING MODE DIRECT CONTROL OF A SINGLE PHASE PWM BOOST RECTIFIER
M. W. Naouar, B. Ben Hania, I. Slama-Belkhodja, E. Monmasson, A. A. Naassani
SATIE, University of Cergy-Pontoise, 33 bd du Port, 95000 Cergy-Pontoise, France

12h00 **em2011S230103**
STUDY OF MOTOR PARAMETER IMPACTS IN A MULTI MOTOR MONO INVERTER SYSTEM
L. CHHUN, D. BIDART, P. MAUSSION, M. PIETRZAK-DAVID and M. FADEL
Laplace, Toulouse, France

Special Session 4 – Analytical Models in Electromagnetic Devices (S2)- ROOM: SALLE BLANCHE

Chairmen: Y. Amara, E.A. Lomonova

14h00 **em2011S240224**
THE DEVELOPMENTS IN THE ANALYTICAL EXPRESSIONS OF THE INTERACTION FORCE BETWEEN CUBOIDAL PERMANENT MAGNETS
J.L.G. Janssen, J.J.H. Paulides and E.A. Lomonova
Eindhoven University of Technology, Dept. of Electrical Eng., Eindhoven, The Netherlands

14h20 **em2011S240135**
2D ANALYTICAL MODELING OF A SUPERCONDUCTING RELUCTANCE MACHINE USING HTS BULKS
Malé G, Lubin T, Mezani S and Lévêque J
Groupe de Recherche en Electrotechnique et Electronique de Nancy, France

14h40 **em2011S240110**
CIRCUIT MODEL OF A MAGNETO-HYDRODYNAMIC DC PUMP
N. Bennecib, E. Matagne, B. Dehez
University of Constantine, Route d'Aïn el Bey, 25000 Constantine, Algeria

15h00 **em2011S240159**
DESIGN OF INDUCTORS - TRANSFORMERS ASSOCIATED TO THE CONVERTERS FOR RAILWAY APPLICATION
M. Rossi, M. Hecquet, G. Parent, V. Lanfranchi, M. Bekemans
Univ Lille Nord de France, F-59000 Lille, France, ECLille, L2EP, F-59650 Villeneuve d'Ascq, France

15h40 **em2011S240218**
CONSEQUENT-POLE INSET PM BLDC MOTOR HAVING UNEQUAL TEETH WIDTHS AND FRACTIONAL SLOT-POLE NUMBER
D. Ishak and W.N. Tan
School of Electrical and Electronic Engineering, Universiti Sains Malaysia, 14300 Nibong Tebal, Malaysia

16h00 **em2011S240164**
ANALYTICAL MODELING OF MAGNETIC FIELD IN SLOTTED SURFACE INSET PERMANENT MAGNET PLANAR LINEAR MACHINES
Huguette Tiegna, Yacine Amara & Georges Barakat
GREAH, Université du Havre, France