

8th IFAC Symposium on Biological and Medical Systems 2012

**Budapest, Hungary
29-31 August 2012**

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Content List of 8th IFAC Symposium on Biological and Medical Systems

Technical Program for Wednesday August 29, 2012

WeCommittee MeetingT1		Gobelin Room
IFAC TC8.2 Committee Meeting (Regular Session)		
08:30-10:00	WeCommittee MeetingT1.1	
<i>IFAC TC8.2 Committee Meeting Agenda*</i> .		
Andreassen, Steen	Aalborg Univ.	
We_AM_1T1		Tea Salon
Invited Session 1: Image-Based Modelling of Biological and Medical Systems & Session of Bioelectrical Imaging (Invited Session)		
11:30-11:50	We_AM_1T1.1	
<i>Identification of the Root Canal and Its Centreline from Dental Cone Beam CT Records (I)</i> , pp. 1-5.		
Benyo, Balazs	Budapest Univ. of Tech. and Ec.	
Szilagyi, Laszlo	Sapientia Univ. of Transylvania, Targu Mures	
Nemeth, Zsolt	Budapest Univ. of Tech. and Ec.	
Molnar, Csaba Gabor	Budapest Univ. of Tech. and Ec.	
Dobo-Nagy, Csaba	Semmelweis Univ.	
11:50-12:10	We_AM_1T1.2	
<i>An Evolutionary HMRP Approach to Brain MR Image Segmentation Using Clonal Selection Algorithm (I)</i> , pp. 6-11.		
Zhang, Tong	THE Univ. OF SYDNEY	
Xia, Yong	Univ. of Sydney	
Feng, David Dagan	The Univ. of Sydney	
12:10-12:30	We_AM_1T1.3	
<i>Optimal Scanning Protocol for 180° Data Acquisition in Parallel SPECT Imaging (I)</i> , pp. 12-17.		
Szlávecz, Ákos	Budapest Univ. of Tech. and Ec.	
Benyo, Balazs	Budapest Univ. of Tech. and Ec.	
12:30-12:50	We_AM_1T1.4	
<i>Model Interpretation of Non-Dipolar Integral Body Surface QRST Maps Randomly Appearing in Arrhythmia Patients (I)</i> , pp. 18-22.		
Prof. Kozmann, György	Univ. of Pannonia	
Tarjányi, Zsolt	Univ. of Pannonia, Veszprem, Hungary	
Tuboly, Gergely	Univ. of Pannonia, Veszprem, Hungary	
Szathmáry, Vavrínek	Slovak Acad. of Sciences, Bratislava, Slovakia	
Švehlíková, Jana	Inst. of Measurement Science, SAS, Bratislava, Slovakia	
Tyšler, Milan	Inst. of Measurement Science, SAS, Bratislava, Slovakia	
12:50-13:10	We_AM_1T1.5	
<i>Methods to Highlight Consistency in Repeated EEG Recordings (I)</i> , pp. 23-27.		
Cserti, Péter	Univ. of Pannonia	
Végső, Balázs	Univ. of Pannonia	
Prof. Kozmann, György	Univ. of Pannonia	
Nagy, Zoltán	Univ. of Pannonia	
De Vico Fallani, Fabrizio	Univ. of Pannonia	

Babiloni, Fabio

Univ. of Rome

We_AM_1T2		Gobelin Room
Regular Session 1: Blood Glucose Control (Regular Session)		
11:30-11:50	We_AM_1T2.1	
<i>Frequency Domain Analysis of Nonlinear Glucose Simulation Models</i> , pp. 28-33.		
Abu-Rmileh, Amjad	Univ. of Girona	
Schoukens, Johan	Vrije Univ. Brussel	
11:50-12:10	We_AM_1T2.2	
<i>Identification of Intra-Patient Variability in the Postprandial Response of Patients with Type 1 Diabetes</i> , pp. 34-39.		
Laguna, Alejandro	Univ. Pol. de Valencia	
Rossetti, Paolo	Univ. Pol. de Valencia	
Ampudia-Blasco, F. Javier	Diabetes Reference Unit, Endocrinology and Metabolism Dep., Clini	
Vehi, Josep	Univ. de Girona	
Bondia Company, Jorge	Univ. Pol. de Valencia	
12:10-12:30	We_AM_1T2.3	
<i>Diabetic Blood Glucose Control Via Optimization Over Insulin and Glucose Doses</i> , pp. 40-45.		
Stemann, Meike	Lund Univ.	
Johansson, Rolf	Lund Univ.	
12:30-12:50	We_AM_1T2.4	
<i>Tuning of Controller for Type 1 Diabetes Treatment with Stochastic Differential Equations</i> , pp. 46-51.		
Duun-Henriksen, Anne Katrine	Tech. Univ. of Denmark	
Boiroux, Dimitri	Tech. Univ. of Denmark	
Schmidt, Signe	Hvidovre Univ. Hospital	
Skyggebjerg, Ole	Horus Aps	
Madsbad, Sten	Hvidovre Univ. Hospital	
Jensen, Peter Ruhdal	Tech. Univ. of Denmark	
Jorgensen, John Bagterp	Tech. Univ. of Denmark	
Poulsen, Niels Kjølstad	Tech. Univ. of Denmark	
Nørgaard, Kirsten	Hvidovre Univ. Hospital	
Madsen, Henrik	Tech. Univ. of Denmark	

We_PM_1T1

Invited Session 2: Nonlinear and Robust Methods for Identification and Control of Biological and Medical Systems (Invited Session)

14:10-14:30	We_PM_1T1.1	
<i>AP@home: An European Project to Bring the Artificial Pancreas Home</i> , pp. 52-54.		
Heinemann, Lutz	Profil Inst. for Metabolic Res.	
14:30-14:50	We_PM_1T1.2	
<i>Nonlinear Analysis of Type 1 Diabetes Models by Differential Geometric Approach (I)</i> , pp. 55-60.		
Szalay, Péter	Budapest Univ. of Tech. and Ec.	
Sas, Péter István	Budapest Univ. of Tech. and Ec.	
Barkai, László	Univ. of Miskolc	
Kovacs, Levente	Budapest Univ. of Tech. and Ec.	

14:50-15:10	We_PM_1T1.3
<i>Hinf Robust Control of a T1DM Model</i> , pp. 61-66.	
Kovacs, Levente	Budapest Univ. of Tech. and Ec.
Szalay, Péter	Budapest Univ. of Tech. and Ec.
15:10-15:30	We_PM_1T1.4
<i>Robust Stabilizing Control Oriented on Identified Patient-Specific T1DM Model (I)</i> , pp. 67-72.	
Quiroz, Griselda	Univ. Autonoma de Nuevo Leon
Flores Gutierrez, Claudia Patricia	Inst. Potosino de Investigación Científica y Tecnológica
Ruiz Velazquez, Eduardo	Univ. de Guadalajara
Femat, Ricardo	IPICYT
15:30-15:50	We_PM_1T1.5
<i>Overnight Control of Blood Glucose in People with Type 1 Diabetes (I)</i> , pp. 73-78.	
Boiroux, Dimitri	Tech. Univ. of Denmark
Duun-Henriksen, Anne Katrine	Tech. Univ. of Denmark
Schmidt, Signe	Hvidovre Univ. Hospital
Nørgaard, Kirsten	Hvidovre Univ. Hospital
Madsbad, Sten	Hvidovre Univ. Hospital
Skyggebjerg, Ole	Horus Aps
Jensen, Peter Ruhdal	Tech. Univ. of Denmark
Poulsen, Niels Kjølsted	Tech. Univ. of Denmark
Madsen, Henrik	Tech. Univ. of Denmark
Jorgensen, John Bagterp	Tech. Univ. of Denmark

We_PM_1T2	Gobelin Room
Regular Session 2: Image Processing and Decision Support Systems (Regular Session)	
14:10-14:30	We_PM_1T2.1
<i>Fall Detection for Independently Living Older People Utilizing Machine Learning</i> , pp. 79-84.	
Srp, Ágoston Mihály	Budapest Univ. of Tech. and Ec.
Vajda, Ferenc	Budapest Univ. of Tech. and Ec.
14:30-14:50	We_PM_1T2.2
<i>Integrated Lung Field Segmentation of Injured Regions and Anatomical Structures from Chest CT Images</i> , pp. 85-90.	
Iwao, Yuma	Yokohama National Univ.
Gotoh, Toshiyuki	Yokohama National Univ.
Kagei, Seiichiro	Yokohama National Univ.
Iwasawa, Tae	Kanagawa Cardiovascular and Res. Center
Tsuzuki, Marcos de Sales Guerra	Univ. of Sao Paulo
14:50-15:10	We_PM_1T2.3
<i>Swallow Detection Algorithm Based on Bioimpedance and EMG Measurements</i> , pp. 91-96.	
Nahrstaedt, Holger	Tech. Univ. Berlin
Schultheiss, Corinna	Department of Otolaryngology, ukb - Unfallkrankenhaus Berlin
Seidl, Rainer Ottis	Department of Otolaryngology, ukb - Unfallkrankenhaus Berlin
Schauer, Thomas	Tech. Univ. Berlin
15:10-15:30	We_PM_1T2.4
<i>Estimation of Antibody Binding Affinities with Surface</i>	

<i>Plasmon Resonance Experiments in Incompatible Blood Type Renal Transplants</i> , pp. 97-102.		
Moyses, Harold Arthur James		Univ. of warwick
Evans, Neil D.		Univ. of Warwick
Lowe, David		Univ. of Warwick
Briggs, David	NHS Blood and Transplant	Birmingham
Higgins, Robert	Univ. Hospitals Coventry and	Warwickshire
Mitchell, Daniel		Univ. of Warwick
Chappell, Michael		Univ. of Warwick
Zehnder, Daniel		Univ. of Warwick
ball, Simon	Univ. hospital Birmingham	
Bentall, Andrew	Univ. Hospitals Birmingham	
15:30-15:50		We_PM_1T2.5
<i>EIT Image Reconstruction with Individual Thorax Geometry</i> , pp. 103-106.		
Zhao, Zhanqi		Furtwangen Univ.
Pulletz, Sven	Univ. Medical Center Schleswig-	Holstein Kiel
Frerichs, Inez	Univ. Medical Center Schleswig-	Holstein Kiel
Moeller, Knut		Furtwangen Univ.
We_PM_2T1		
Invited Session 2: Nonlinear and Robust Methods for Identification and Control of Biological and Medical Systems 2 (Invited Session)		
16:10-16:30		We_PM_2T1.1
<i>Observer-Based Glucose Control Via Subcutaneous Insulin Administration (I)</i> , pp. 107-112.		
Palumbo, Pasquale	Consiglio Nazionale delle	Ricerche (CNR)
Pepe, Pierdomenico		Univ. of L'Aquila
Panunzi, Simona		IASI-CNR
De Gaetano, Andrea		CNR
16:30-16:50		We_PM_2T1.2
<i>Model-Based Angiogenic Inhibition of Tumor Growth Using Modern Robust Control Method (I)</i> , pp. 113-118.		
Szeles, Annamária	Budapest Univ. of Tech. and Ec.	
Sápi, Johanna	Budapest Univ. of Tech. and Ec.	
Drexler, Dániel András	Budapest Univ. of Tech. and Ec.	
Harmati, Istvan	Budapest Univ. of Tech. and Ec.	
Sápi, Zoltán		Semmelweis Univ.
Kovacs, Levente	Budapest Univ. of Tech. and Ec.	
16:50-17:10		We_PM_2T1.3
<i>Output Reference Tracking for MISO Positive Systems in General Anesthesia (I)</i> , pp. 119-124.		
Nogueira, Filipa	Faculdade de Engenharia da Univ.	do Porto
Mendonça, Teresa	Faculdade de Ciências da Univ.	do Porto
Rocha, Paula		Univ. of Porto
17:10-17:30		We_PM_2T1.4
<i>Dynamical Equivalence and Linear Conjugacy of Biochemical Reaction Network Models (I)</i> , pp. 125-130.		
Szederkenyi, Gabor	Computer and Automation Res.	Inst. Hungarian

Tuza, Zoltan Andras
Hangos, Katalin M.

Peter Pazmany Catholic Univ.
Hungarian Acad. of Sciences

Bastogne, Thierry
Vallois, Pierre

Univ. Henri Poincaré, Nancy 1
Nancy-Univ. CNRS

We_PM_2T2 Gobelion Room
Regular Session 3: Respiratory Systems (Regular Session)

16:10-16:30 We_PM_2T2.1

Respiratory Mechanics, Gas Transport and Perfusion During Exercise, pp. 131-136.

Pereira, Carina	RWTH Aachen Univ.
Heinke, Stefanie	RWTH Aachen Univ.
Tigges, Timo	RWTH Aachen Univ.
Czaplik, Michael	RWTH Aachen Univ.
Walter, Marian	RWTH Aachen Univ.
Leonhardt, Steffen	RWTH Aachen

16:30-16:50 We_PM_2T2.2

Identifiability Analysis of a Pressure-Depending Alveolar Recruitment Model, pp. 137-142.

Schranz, Christoph	Furtwangen Univ.
Docherty, Paul D	Univ. of Canterbury
Chiew, Yeong Shiong	Univ. of Canterbury
Moeller, Knut	Furtwangen Univ.
Chase, J. Geoffrey	Univ. of Canterbury

16:50-17:10 We_PM_2T2.3

Model-Based Approach to Estimate Dfrc in the ICU Using Measured Lung Dynamics, pp. 143-148.

Mishra, Ankit	Univ. of Canterbury
Chiew, Yeong Shiong	Univ. of Canterbury
Shaw, Geoffrey M	Christchurch Hospital, Canterbury District Health Board
Chase, J. Geoffrey	Univ. of Canterbury

17:10-17:30 We_PM_2T2.4

Concept Study of a Nonlinear Mechanical Lung Simulator, pp. 149-153.

Vanyi, Gabor	Furtwangen Univ.
Gut, Norbert	Furtwangen Univ.
Kretschmer, Joern	Furtwangen Univ.
Moeller, Knut	Furtwangen Univ.

WePosterT3 Foyer
Poster Session (Regular Session)

17:40-17:46 WePosterT3.1

System Identification of the Intrabrain Tumoral Uptake of Multifunctional Nanoparticles, pp. 154-159.

Tylcz, Jean-Baptiste	CRAN
Bechet, Denise	CRAN
Bastogne, Thierry	Univ. Henri Poincaré, Nancy 1
Garnier, Hugues	Univ. de Lorraine
Barberi-Heyob, Muriel	CAV (Centre Alexis Vautrin), Centre le Luttre contre le Cancer

17:46-17:52 WePosterT3.2

Model of Cell Damage in Single Session Radiation Treatments Based on Continuous-Time Markov Chains, pp. 160-165.

Keinj, Roukaya	IECN, Univ. Henri Poincaré
Thomassin, Magalie	Univ. de Lorrain

17:52-17:58 WePosterT3.3

A Novel Passive Movement Method for Parameter Estimation of a Musculo-Skeletal Arm Model Incorporating a Modified Hill Muscle Model, pp. 166-171.

Yu, Tung Fai	Univ. of Warwick
Wilson, Adrian J	Univ. of Warwick

17:58-18:04 WePosterT3.4

Investigation of the Effect of a Genetic Manipulation through Macroscopic Dynamic Modeling, pp. 172-177.

Retamal, Cristina	Univ. de Mons
Timmermans, Johan	Univ. of Brussels
Dewasme, Laurent	Univ. de Mons
HANTSON, Anne-Lise	UMONS
Van Melderens, Laurence	Univ. of Brussels
Vande Wouwer, Alain	Univ. de Mons

18:04-18:10 WePosterT3.5

Rehabilitation Robots Assisting in Walking Training for SCI Patient, pp. 178-183.

Sakaki, Taisuke	Kyushu Sangyo Univ.
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18:10-18:16 WePosterT3.6

A Reduced Radiation Dose CTA, pp. 184-189.

Bai, Er-Wei	Univ. of Iowa
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18:16-18:22 WePosterT3.7

Image Processing in an Automated Live Cell Imaging System, pp. 190-195.

Pechan, Imre	evopro Ltd.
Ficsór, Levente	Cryo-Innovation Ltd.
Losoncz, Eszter	Cryo-Innovation Ltd.
Pribenszky, Csaba	Cryo-Innovation Ltd.

18:22-18:28 WePosterT3.8

A Modern Approach to Traditional Chinese Medicine, pp. 196-200.

Rácz, György	Budapest Univ. of Tech. and Ec.
Olasz, Ákos	Thormed Res. Development, Medical Device Manufacturing, Com

Rozsnyik, Zoltán	Thormed Res. Development, Medical Device Manufacturing, Com
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Ferenczi, György	Res. Development, Medical Device Manufacturing, Commercial
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18:28-18:34 WePosterT3.9

Design of a Trajectory Generator for a Lower-Limbs Rehabilitation Device, pp. 201-206.

Seddiki, Lynda	LIASD, Paris 8 Univ.
Guelton, Kevin	Univ. de Reims Champagne-Ardenne
Zaytoon, Janan	Univ. of Reims
Akdag, Herman	LIASD, Paris 8 Univ.

18:34-18:40 WePosterT3.10

Effect of Therapeutic Riding on the Coordination of Movements of Blind Children (a Long-Term Study), pp. 207-210.

Steiner, Henriette	Budapest Univ. of Tech. and Ec.
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18:40-18:46

WePosterT3.11

Effect of Therapeutic Riding on Center of Gravity (COG) and Joint Angles Parameters of Blind Children (A Long-Term Study), pp. 211-217.

Steiner, Henriette

Budapest Univ. of Tech. and Ec.

Kertesz, Zsolt

Budapest Univ. of Tech. and Ec.

18:46-19:00

WePosterT3.12

Biomimetic Actuator Control for a Pneumatic Cylinder, pp. 218-223.

Misgeld, Berno

RWTH Aachen Univ.

Gerlach-Hahn, Kurt

RWTH Aachen

Leonhardt, Steffen

RWTH Aachen

Technical Program for Thursday August 30, 2012

Th_AM_1T1	Tea Salon
Invited Session 3: Metabolic Systems and Hospital Control of Glycemia (Invited Session)	
09:50-10:10	Th_AM_1T1.1
<i>Impact of Sensor and Measurement Timing Errors on Model-Based Insulin Sensitivity (I)</i> , pp. 224-229.	
Pretty, Christopher	Univ. of Canterbury
Le Compte, Aaron	Univ. of Canterbury
Shaw, Geoffrey M	Christchurch Hospital, Canterbury District Health Board
Chase, J. Geoffrey	Univ. of Canterbury
10:10-10:30	Th_AM_1T1.2
<i>Interstitial Insulin Kinetic Parameters for a 2-Compartment Insulin Model with Saturable Clearance (I)</i> , pp. 230-235.	
Pretty, Christopher	Univ. of Canterbury
Le Compte, Aaron	Univ. of Canterbury
Shaw, Geoffrey M	Christchurch Hospital, Canterbury District Health Board
Chase, J. Geoffrey	Univ. of Canterbury
10:30-10:50	Th_AM_1T1.3
<i>Improving Minimal Model Identifiability in Insulin Resistant Patients Utilizing Insight from the Graphical Structural Model Identifiability Method (I)</i> , pp. 236-241.	
Docherty, Paul D	Univ. of Canterbury
Chase, J. Geoffrey	Univ. of Canterbury
10:50-11:10	Th_AM_1T1.4
<i>Impact of Calibration Algorithms on Hypoglycaemia Detection in Newborn Infants Using Continuous Glucose Monitors (I)</i> , pp. 242-247.	
Signal, Matthew	Univ. of Canterbury
Le Compte, Aaron	Univ. of Canterbury
Harris, Deborah L.	Univ. of Auckland
Weston, Phil J.	Waikato District Health Board
Harding, Jane E.	Univ. of Auckland
Chase, J. Geoffrey	Univ. of Canterbury
11:10-11:30	Th_AM_1T1.5
<i>Using a Stochastic Model to Detect Unusual Continuous Glucose Monitor Behaviour in Newborn Infants (I)</i> , pp. 248-253.	
Signal, Matthew	Univ. of Canterbury
Le Compte, Aaron	Univ. of Canterbury
Harris, Deborah L.	Univ. of Auckland
Weston, Phil J.	Waikato District Health Board
Harding, Jane E.	Univ. of Auckland
Chase, J. Geoffrey	Univ. of Canterbury
11:30-11:50	Th_AM_1T1.6
<i>Glargine and Glycemia: Pitfalls and Perils (I)</i> , pp. 254-259.	
Fisk, Liam	Univ. of Canterbury
Willis, Jonathan	Univ. of Canterbury
Le Compte, Aaron	Univ. of Canterbury
Shaw, Geoffrey M	Christchurch Hospital, Canterbury District Health Board
Chase, J. Geoffrey	Univ. of Canterbury

Th_AM_1T2	Gobelin Room
Regular Session 4: Modeling of Physiological Systems 1 (Regular Session)	
09:50-10:10	Th_AM_1T2.1
<i>Innate Immune System Dynamics to Influenza Virus</i> , pp. 260-265.	
Hernandez Vargas, Esteban A.	Helmholtz-Zentrum für Infektionsforschung
Meyer-Hermann, Michael	Helmholtz-Zentrum für Infektionsforschung
10:10-10:30	Th_AM_1T2.2
<i>Pharmacokinetic Modelling of the Anti-Malarial Drug Artesunate and Its Active Metabolite Dihydroartemisinin</i> , pp. 266-271.	
Hall, Adam	Univ. of Warwick
Chappell, Michael	Univ. of Warwick
Aston, John	Univ. of Warwick
Ward, Stephen	Liverpool School of Tropical Medicine
10:30-10:50	Th_AM_1T2.3
<i>Towards Better Understanding of Non-Alcoholic Fatty Liver Disease through Modelling and Simulation Approaches</i> , pp. 272-277.	
Naik, Adviti	Univ. of Ljubljana
Belic, Ales	Univ. of Ljubljana, Faculty of Electrical Engineering
10:50-11:10	Th_AM_1T2.4
<i>Modelling of Tumour Growth and Cytotoxic Effect of Taxotere in Xenografts</i> , pp. 278-283.	
Evans, Neil D.	Univ. of Warwick
Dimelow, Richard	AstraZeneca Ltd
Yates, James	AstraZeneca
11:10-11:30	Th_AM_1T2.5
<i>Kinetic Modelling of Haemodialysis Removal of Myoglobin in Rhabdomyolysis Patients</i> , pp. 284-289.	
Keir, Richard	Univ. of Warwick
Evans, Neil D.	Univ. of Warwick
Hutchison, Colin	Queen Elizabeth Hospital
Viganò, Maria Rosa	Univ. of Milan-Bicocca
Stella, Andrea	Univ. of Milan-Bicocca
Fabbrini, Paolo	Univ. of Milan-Bicocca
Storr, Markus	Gambro Dialysatoren GmbH & Co.
Chappell, Michael	Univ. of Warwick
11:30-11:50	Th_AM_1T2.6
<i>A Hybrid Model of Interacting Physiological Systems</i> , pp. 290-294.	
Kretschmer, Joern	Furtwangen Univ.
Zhao, Zhanqi	Furtwangen Univ.
Haunsberger, Thomas	Furtwangen Univ.
Drost, Erick	Furtwangen Univ.
Koch, Edmund	Dresden Univ. of Tech.
Moeller, Knut	Furtwangen Univ.

Th_AM_2T1	Tea Salon
Invited Session 3: Metabolic Systems and Hospital Control of Glycemia 2 (Invited Session)	
12:10-12:30	Th_AM_2T1.1

Insulin Kinetics During Hyper-Insulinemia Euglycemia Therapy (HIET) (I), pp. 295-300.

Penning, Sophie	Univ. of Liege, Liege, Belgium
Massion, Paul	Liege Univ. Hospital
Le Compte, Aaron	Univ. of Canterbury
Desaive, Thomas	Univ. of Liege
Chase, J. Geoffrey	Univ. of Canterbury

12:30-12:50 Th_AM_2T1.2

Development and Pilot Trial Results of Stochastic Targeted (STAR) Glycemic Control in a Medical ICU (I), pp. 301-306.

Fisk, Liam	Univ. of Canterbury
Le Compte, Aaron	Univ. of Canterbury
Shaw, Geoffrey M	Christchurch Hospital, Canterbury District Health Board
Penning, Sophie	Univ. of Liege, Liege, Belgium
Desaive, Thomas	Univ. of Liege
Chase, J. Geoffrey	Univ. of Canterbury

12:50-13:10 Th_AM_2T1.3

Nutrition Rates and Impact of Clinical Stoppages for Two AGC Protocols (I), pp. 307-312.

Fisk, Liam	Univ. of Canterbury
Clarkson, Sooji	Univ. of Canterbury
Le Compte, Aaron	Univ. of Canterbury
Shaw, Geoffrey M	Christchurch Hospital, Canterbury District Health Board
Chase, J. Geoffrey	Univ. of Canterbury

13:10-13:30 Th_AM_2T1.4

External Validation and Sub-Cohort Analysis of Stochastic Forecasting Models in NICU Cohorts (I), pp. 313-318.

Floyd, Richard P.	Univ. of Canterbury
Dickson, Jennifer Launa	Univ. of Canterbury
Le Compte, Aaron	Univ. of Canterbury
Chase, J. Geoffrey	Univ. of Canterbury
Lynn, Adrienne	Christchurch Women's Hospital
Shaw, Geoffrey M	Christchurch Hospital, Canterbury District Health Board

Development and Optimisation of Stochastic Targeted (STAR) Glycaemic Control for Neonatal Intensive care, pp. 319-324.

Floyd, Richard P.	Univ. of Canterbury
Dickson, Jennifer Launa	Univ. of Canterbury
Le Compte, Aaron	Univ. of Canterbury
Chase, J. Geoffrey	Univ. of Canterbury
Lynn, Adrienne	Christchurch Women's Hospital
Shaw, Geoffrey M	Christchurch Hospital, Canterbury District Health Board

Th_AM_2T2 Gobelin Room
Invited Session 4: MODEL FORMULATION, DECISION SUPPORT AND CONTROL OF DEPTH OF ANESTHESIA: TOWARDS a MULTIVARIABLE PARADIGM (Invited Session)

12:10-12:30 Th_AM_2T2.1

Towards a Multivariable Model for Controlling the Depth of Anaesthesia Using Propofol and Remifentanyl (I), pp. 325-330.

Ionescu, Clara	Ghent Univ.
Nascu, Ioana	Tech. Univ. of Cluj Napoca
De Keyser, Robin M.C.	Ghent Univ.

12:30-12:50 Th_AM_2T2.2

EPSAC Predictive Control Applied to Muscle Relaxant Administration (I), pp. 331-336.

Hodrea, Ramona	Tech. Univ. of Cluj-Napoca
nascu, ioan	Tech. Univ. of Cluj-Napoca
De Keyser, Robin M.C.	Ghent Univ.
Ionescu, Clara	Ghent Univ.

12:50-13:10 Th_AM_2T2.3

A Linear Model for Estimating Propofol Individualized Dosage

(I), pp. 337-342.

Rocha, Conceição	Univ. do Porto
Mendonça, Teresa	Faculdade de Ciências da Univ. do Porto
Oliveira, Mendes de	Univ. do Porto, Faculdade de Ec.
Silva, Maria Eduarda	Univ. do Porto

13:10-13:30 Th_AM_2T2.4

Online Evaluation of a Changes Detection Algorithm for Depth of Anesthesia Signals (I), pp. 343-348.

Sebastião, Raquel	Univ. of Porto
Martins da Silva, Margarida	Faculdade de Ciências, Univ. do Porto
Rabiço, Rui	Hospital Pedro Hispano, Unidade Local de Saúde de Matosinhos
Gama, João	LIAAD-INESC Porto, L.A., Univ. of Porto, Portugal
Mendonça, Teresa	Faculdade de Ciências da Univ. do Porto

Th_PM_1T1 Tea Salon
Regular Session 5: Identifiability of Physiological Systems (Regular Session)

14:30-14:50 Th_PM_1T1.1

Observation of Changes in Model-Based Insulin Sensitivity During Haemodialysis Transitions for Critically Ill Patients, pp. 349-354.

Jamaludin, Ummu Kulthum	Univ. of Canterbury
Docherty, Paul D	Univ. of Canterbury
Chase, J. Geoffrey	Univ. of Canterbury
Le Compte, Aaron	Univ. of Canterbury
Shaw, Geoffrey M	Christchurch Hospital, Canterbury District Health Board

14:50-15:10 Th_PM_1T1.2

Tissue Attenuation Characteristics of Acoustic Emission Signals for Wear and Degradation of Total Hip Arthroplasty Implants, pp. 355-360.

Khan-Edmundson, Ataif	Univ. of Canterbury
Rodgers, Geoffrey W.	Univ. of Otago Christchurch
Woodfield, Tim B.F.	Univ. of Otago Christchurch
Hooper, Gary J.	Univ. of Otago Christchurch
Chase, J. Geoffrey	Univ. of Canterbury

15:10-15:30 Th_PM_1T1.3

Structural Identifiability and Indistinguishability Analyses of in Vitro Pitavastatin Hepatic Uptake, pp. 361-366.

Grandjean, Thomas R. B.	Univ. of Warwick
Chappell, Michael	Univ. of Warwick
Yates, James	AstraZeneca
Evans, Neil D.	Univ. of Warwick

15:30-15:50 Th_PM_1T1.4

Identification of the Nociceptive Forward Pathway Using Perception Thresholds, pp. 367-372.

Yang, Huan	Univ. of Twente
Buitenweg, Jan Reinoud	Univ. of Twente
Meijer, Hil G.E.	Univ. of Twente

Th_PM_1T2 Gobelin Room
Invited Session 4: MODEL FORMULATION, DECISION SUPPORT

AND CONTROL OF DEPTH OF ANESTHESIA: TOWARDS a MULTIVARIABLE PARADIGM 2 (Invited Session)	
14:30-14:50	Th_PM_1T2.1
<i>Closed-Loop Control of Anesthesia - a Review (I)</i> , pp. 373-378.	
Dumont, Guy	Univ. of British Columbia
14:50-15:10	Th_PM_1T2.2
<i>A No-Nonsense Control Engineering Approach to Anaesthesia Control During Induction Phase (I)</i> , pp. 379-384.	
De Keyser, Robin M.C.	Ghent Univ.
Ionescu, Clara	Ghent Univ.
15:10-15:30	Th_PM_1T2.3
<i>Analysis of an Individualized Physiologically Based Model for Anesthesia Control (I)</i> , pp. 385-384.	
Krieger, Alexandra	Imperial Coll. London
Panoskaltsis, Nicki	Imperial Coll. London
Mantalaris, Athanasios	Imperial Coll. London
Georgiadis, Michael	Aristotle Univ. of Thessaloniki
Pistikopoulos, Efstratios N.	Imperial Coll.
15:30-15:50	Th_PM_1T2.4
<i>Control of Patient Response to Anesthesia Using L1 Adaptive Methods (I)</i> , pp. 391-396.	
Kharisov, Evgeny	Univ. of Illinois at Urbana-Champaign
Beck, Carolyn L.	Univ. of Illinois at Urbana-Champaign
Bloom, Marc	New York Univ.
Th_PM_2T1	Tea Salon
Regular Session 6: Model-Based Treatment (Regular Session)	
16:10-16:30	Th_PM_2T1.1
<i>Suggestive Therapeutic Pathways Using Hyper-Heuristics</i> , pp. 397-402.	
Rattadilok, Prapa	Univ. of Sheffield
Mahfouf, Mahdi	Univ. of Sheffield
Ross, Jonathan	Northern General Hospital
Mills, Gary	Royal Hallamshire Hospital
Panoutsos, George	Univ. of Sheffield
Zeghib, Abdelhafid	Univ. of Sheffield
Denai, Mouloud	Teesside Univ.
16:30-16:50	Th_PM_2T1.2
<i>Micro Computed Tomography Based Quantification of Pore Size in Electron Beam Melted Titanium Biomaterials</i> , pp. 403-407.	
Tredinnick, Seamus John	Univ. of Canterbury
Chase, J. Geoffrey	Univ. of Canterbury
16:50-17:10	Th_PM_2T1.3
<i>Virtual Testing of Decision Support for Tight Glycemic Control in the ICU</i> , pp. 408-413.	
Rousing, Mark Lillelund	Aalborg Univ.
Pielmeier, Ulrike	Aalborg Univ.
Andreassen, Steen	Aalborg Univ.
Th_PM_2T2	Gobelin Room
Regular Session 7: Modeling of Physiological Systems 2 (Regular Session)	

16:10-16:30	Th_PM_2T2.1
<i>Modeling of Glucose-Insulin System Dynamics in Diabetic Goettingen Minipigs</i> , pp. 414-419.	
Lunze, Katrin	RWTH Aachen
Singh, Tarunraj	State Univ. of New York at Buffalo
Leonhardt, Steffen	RWTH Aachen
16:30-16:50	Th_PM_2T2.2
<i>A New Perspective on Closed-Loop Glucose Control Using a Physiology-Based Pharmacokinetic / Pharmacodynamic Model Kernel</i> , pp. 420-425.	
Schaller, Stephan	RWTH Aachen Univ. Bayer Tech. Services GmbH
Willmann, Stefan	Bayer Tech. Services GmbH
Schaupp, Lukas	Medical Univ. of Graz
Pieber, Thomas	Medical Univ. of Graz
Schuppert, Andreas	RWTH Aachen
Lippert, Joerg	Bayer Tech. Services GmbH
Eissing, Thomas	Bayer Tech. Services GmbH
16:50-17:10	Th_PM_2T2.3
<i>Hypoxia Modelling in Ventricular Cells Using Beeler-Reuter Model</i> , pp. 426-431.	
Szilagyi, Sandor Miklos	Petru Maior Univ. Tirgu Mures
Szilagyi, Laszlo	Sapientia Univ. of Transylvania, Tirgu Mures
Enachescu, Calin	Petru Maior Univ. Tirgu Mures

Technical Program for Friday August 31, 2012

Fr_AM_1T1	Tea Salon
Invited Session 5: Cardio-Pulmonary Systems Modeling and Clinical Applications & Cardiopulmonary Modeling (Invited Session)	
09:30-09:50	Fr_AM_1T1.1
<i>Model-Based Monitoring of Septic Shock Treated with Large-Pore Hemofiltration Therapy (I)</i> , pp. 432-437.	
Revie, James A	Univ. of Canterbury
Stevenson, David	Univ. of Canterbury
Chase, J. Geoffrey	Univ. of Canterbury
Lambermont, Bernard	Univ. of Liege
Ghuysen, Alexandre	Univ. of Liege
Kolh, Philippe	Univ. of Liege
Shaw, Geoffrey M	Christchurch Hospital, Canterbury District Health Board
Desaive, Thomas	Univ. of Liege
09:50-10:10	Fr_AM_1T1.2
<i>Analysis of Aortic Energetics from Pulse Wave Examination in a Porcine Study of Septic Shock (I)</i> , pp. 438-443.	
Revie, James A	Univ. of Canterbury
Stevenson, David	Univ. of Canterbury
Chase, J. Geoffrey	Univ. of Canterbury
Lambermont, Bernard	Univ. of Liege
Ghuysen, Alexandre	Univ. of Liege
Kolh, Philippe	Univ. of Liege
Shaw, Geoffrey M	Christchurch Hospital, Canterbury District Health Board
Desaive, Thomas	Univ. of Liege
10:10-10:30	Fr_AM_1T1.3
<i>Physiological Relevance of a Minimal Model in Healthy Pigs Lung (I)</i> , pp. 444-449.	
Chiew, Yeong Shiong	Univ. of Canterbury
Desaive, Thomas	Univ. of Liege
Lambermont, Bernard	Univ. of Liege
Janssen, Nathalie	Hemodynamic Res. Center, HemoLiege, Univ. of Liege, Bel
Shaw, Geoffrey M	Christchurch Hospital, Canterbury District Health Board
Schranz, Christoph	Furtwangen Univ.
Moeller, Knut	Furtwangen Univ.
Chase, J. Geoffrey	Univ. of Canterbury
10:30-10:50	Fr_AM_1T1.4
<i>Autonomous Electrical Activity Induced by Cardiac Tissue Deformation in a Thermo-Electro-Mechanical Background (I)</i> , pp. 450-455.	
Collet, Arnaud	Univ. of Liège
Desaive, Thomas	Univ. of Liege
Dauby, Pierre C.	Univ. of Liege
10:50-11:10	Fr_AM_1T1.5
<i>Structural Model of the Mitral Valve Included in a Cardiovascular Closed Loop Model. Static and Dynamic Validation (I)</i> , pp. 456-461.	
Paeme, Sabine	Univ. of Liège
Pironet, Antoine	Univ. of Liege
Chase, J. Geoffrey	Univ. of Canterbury

Lambermont, Bernard	Univ. of Liege
Kolh, Philippe	Univ. of Liege
Lancellotti, Patrizio	Univ. of Liege
Dauby, Pierre C.	Univ. of Liege
Desaive, Thomas	Univ. of Liege

Fr_AM_1T2	Gobelin Room
Regular Session 8: Modeling and Decision Support Systems (Regular Session)	
09:30-09:50	Fr_AM_1T2.1
<i>Effect of Diagnosis on Variability of ICU Patients in Insulin Sensitivity</i> , pp. 462-466.	
Ferenci, Tamas	Budapest Univ. of Tech. and Ec.
Kovacs, Levente	Budapest Univ. of Tech. and Ec.
Benyo, Balazs	Budapest Univ. of Tech. and Ec.
Le Compte, Aaron	Univ. of Canterbury
Shaw, Geoffrey M	Christchurch Hospital, Canterbury District Health Board
Chase, J. Geoffrey	Univ. of Canterbury
09:50-10:10	Fr_AM_1T2.2
<i>Assessment of SOFA Score As a Diagnostic Indicator in Intensive Care Medicine</i> , pp. 467-472.	
Hewett, James	Univ. of Canterbury
Rodgers, Geoffrey W.	Univ. of Otago Christchurch
Chase, J. Geoffrey	Univ. of Canterbury
Le Compte, Aaron	Univ. of Canterbury
Pretty, Christopher	Univ. of Canterbury
Shaw, Geoffrey M	Christchurch Hospital, Canterbury District Health Board
10:10-10:30	Fr_AM_1T2.3
<i>Tracking the NMB Level Via a Switching System Mass Control Strategy</i> , pp. 473-477.	
Teixeira, Miguel Ramos	Faculdade de Engenharia da Univ. do Porto
Mendonça, Teresa	Faculdade de Ciências da Univ. do Porto
Rocha, Paula	Univ. of Porto
10:30-10:50	Fr_AM_1T2.4
<i>Analysis of the First Cry of the Newborns in Case of Vaginal Delivery and Caesarean Section</i> , pp. 478-483.	
Takacs, Gyorgy	Peter Pazmany Catholic Univ. Hungary
Makoi, Zita	Hungary
10:50-11:10	Fr_AM_1T2.5
<i>Introducing Fuzzy Cognitive Maps for Developing Decision Support System for Triage at Emergency Room Admissions for the Elderly</i> , pp. 484-489.	
Georgopoulos, Voula	Tech. Educational Inst. of Patras
Stylios, Chrysostomos	Tech. Educational Inst. of Epirus,

Fr_AM_2T1	Tea Salon
Invited Session 5: Cardio-Pulmonary Systems Modeling and Clinical Applications & Cardiopulmonary Modeling 2 (Invited Session)	
11:30-11:50	Fr_AM_2T1.1
<i>Traversing the Fuzzy Valley: Problems Caused by Reliance on Default Simulation and Parameter Identification Programs for Discontinuous Models (I)</i> , pp. 490-494.	

Docherty, Paul D	Univ. of Canterbury
Schranz, Christoph	Furtwangen Univ.
Chase, J. Geoffrey	Univ. of Canterbury
Chiew, Yeong Shiong	Univ. of Canterbury
Moeller, Knut	Furtwangen Univ.

11:50-12:10 Fr_AM_2T1.2

Development and Identification of a Closed-Loop Model of the Cardiovascular System Including the Atria (I), pp. 495-500.

Pironet, Antoine	Univ. of Liege
Revie, James A	Univ. of Canterbury
Paeme, Sabine	Univ. of Liège
Dauby, Pierre C.	Univ. of Liege
Chase, J. Geoffrey	Univ. of Canterbury
Desaive, Thomas	Univ. of Liege

12:10-12:30 Fr_AM_2T1.3

Estimating Afterload, Systemic Vascular Resistance and Pulmonary Vascular Resistance in an Intensive Care Setting (I), pp. 501-506.

Stevenson, David	Univ. of Canterbury
Revie, James A	Univ. of Canterbury
Chase, J. Geoffrey	Univ. of Canterbury
Shaw, Geoffrey M	Christchurch Hospital, Canterbury District Health Board
Lambermont, Bernard	Univ. of Liege
Ghuysen, Alexandre	Univ. of Liege
Kolh, Philippe	Univ. of Liege
Desaive, Thomas	Univ. of Liege

12:30-12:50 Fr_AM_2T1.4

Measuring Gas Exchange with Step Changes in Inspired Oxygen: An Analysis of the Assumption of Oxygen Steady State (I), pp. 507-511.

Thomsen, Lars Pilegaard	Health Science and Tech. Aalborg Univ.
Weinreich, Ulla Møller	Department of Pulmonary Medicine, Region North Jutland, Aalborg H
Karbing, Dan Stieper	Aalborg Univ.
Rees, Stephen Edward	Aalborg Univ.

12:50-13:10 Fr_AM_2T1.5

A Stratified Model of Pulmonary Gas Exchange (I), pp. 512-517.

Mogensen, Mads Lause	Aalborg Univ.
Karbing, Dan Stieper	Aalborg Univ.
Steimle, Kristoffer Lindegaard	Aalborg Univ.
Rees, Stephen Edward	Aalborg Univ.
Andreassen, Steen	Aalborg Univ.

Fr_AM_2T2 Gobelin Room
Invited Session 6: Human Eye Modelling and Treatment (Invited Session)

11:30-11:50 Fr_AM_2T2.1

Recent Developments in Modeling Innovative Intraocular Lenses (I), pp. 518-522.

Krutzler, Christian	Integrated Microsystems Austria GmbH
Lux, Kirsten	Integrated Microsystems Austria GmbH

Prinz, Martin CROMA-PHARMA GmbH

11:50-12:10 Fr_AM_2T2.2

Modeling and Measuring the Biomechanical Properties of Eye Coats (I), pp. 523-528.

Dragostinoff, Nikolaus	Integrated Microsystems Austria GmbH
Werkmeister, Rene M.	Medical Univ. of Vienna
Schmetterer, Leopold	Medical Univ. of Vienna

12:10-12:30 Fr_AM_2T2.3

Modeling of Pressure-Flow Relationship in the Eye (I), pp. 529-533.

Schmetterer, Leopold	Medical Univ. of Vienna
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12:30-12:50 Fr_AM_2T2.4

Human Eye Modeling for Intraocular Lens Design and for Calculating Intraocular Lens Power (I), pp. 534-539.

Brezna, Wolfgang	Integrated Microsystems Austria GmbH
Dragostinoff, Nikolaus	Integrated Microsystems Austria GmbH
Prinz, Martin	CROMA-PHARMA GmbH