

08:30	Plenary: From Metabolic Networks to Minimal Dynamic Bioreaction Models , <i>G. Bastin, Université Catholique de Louvain</i> chair: <i>M. Perrier</i>	
09:30	Keynote PAT and the extraction of maximum information from messy spectral data , <i>Z.P. Chen and J. Morris, University of Newcastle upon Tyne</i> chair: <i>J.A. Moreno</i>	
10:00	Coffee Break	
	Studio I	Studio III
	Data-driven techniques	Wastewater Treatment 1
	chair: <i>M.N. Karim</i> cochair: <i>J.O. Trierweiler</i>	chair: <i>J.F. Béteau</i> cochair: <i>H. Mendez</i>
10:20	Unravelling spectral signatures in bioprocess development, <i>H. Kilic, E. Martin and G. Montague</i>	Control of an anaerobic mesophilic reactor using periodic temperature variations, <i>B. Tartakovsky, E. Morel, L.-P. Dansereau, M. Perrier and S. Guiot</i>
10:40	Multiscale fault detection and diagnosis in fed-batch fermentation, <i>A. Alawi and J. Morris</i>	COD and VFA's control in a two-phase anaerobic digestion process, <i>E. Aguilar-Garnica, D. Dochain, V. Alcaraz-González, A. Dramé and V. González-Álvarez</i>
11:00	Feature selection and classification of metabolomic data using support vector machines, <i>S. Mahadevan, S. Shah, C. Slupsky, T.J. Marrie, E. Saude and D. Adamko</i>	Intelligent control strategy for an anaerobic fluidized bed reactor, <i>S. Carlos-Hernandez, J.F. Beteau and E.N. Sanchez</i>
11:20	Experimental study of neural network software sensors in yeast and bacteria fed-batch processes, <i>L. Dewasme, A. Vande Wouwer, S. Dessoy, P. Dehottay, X. Hulhoven and P. Bogaerts</i>	Nonlinear approach for the VFA regulation in an anaerobic digester, <i>H. O. Méndez-Acosta, B. Palacios-Ruíz, J.P. Steyer, V. Alcaraz-González, E. Latrille and V. González-Álvarez</i>
11:40	Normalisation of DNA array data to facilitate their use in bioprocess development, <i>N. Dawes and J. Glassey</i>	
12:00	Lunch	

Afternoon

13:30	<p>Keynote: Process development for production of active pharmaceutical ingredients with <i>Pichia Pastoris</i> <i>R. Luttmann, M. Eicke, A. Kazemi, A. Ellert, B. Hahn and E. Werner</i> chair: <i>M. Perrier</i></p>	
	Studio I	Studio III
	Estimation	Optimization and Control
	chair: <i>E. Ferreira</i> cochair: <i>E. Rocha Cozatl</i>	chair: <i>D. Dochain</i> cochair: <i>M. Betancur</i>
14:00	Biomass growth and K_{La} estimation using online and offline measurements, <i>Z.I.T.A. Soons, J. Shi, L.A. van der Pol, G. van Straten and A.J.B. van Boxtel</i>	Optimization of sequencing batch (bio)-reactors - Challenging issues, <i>J. Harmand, D. Dochain and D. Mazouni</i>
14:20	OUR and CER estimation in high density mammalian cell perfusion cultures, <i>C. Goudar, K. Joeris, C. Cruz, C. Zhang and K. Konstantinov</i>	Maximum production of 1,4-dihydroxy-2-naphthoic acid by fed-batch and anaerobic/aerobic culture of <i>Propionibacterium freudenreichii</i> ET-3 <i>K. Fruichi, Y. Katakura, K. Ninomiya and S. Shioya</i>
14:40	Input and states estimation of biohydrogen production, <i>C.A. Aceves-Lara, E. Latrille and J.P. Steyer</i>	Adaptive sliding mode control of fed-batch processes using specific growth rate estimation feedback, <i>H. De Battista, J. Picó, E. Picó-Marco and V. Mazzone</i>
15:00	Estimation of biomass concentration using interval observers in an E. Coli fed-batch fermentation, <i>A.C.A. Veloso, I. Rocha and E.C. Ferreira</i>	Modeling for optimization of enzymatic hydrolysis cellulose, <i>S. Peri, S. Karra, Y.Y. Lee and N.M. Karim</i>
15:20	Optimization of experiments for improved estimation of protein interaction parameters, <i>L. Woodward, G. De Crescenzo and B. Srinivasan</i>	Multicriteria optimization of beer quality using the rough set method, <i>S. Vafaeyan, J. Thibault and M. Titica</i>
15:40		Forcasting for fermentation operational decision making, <i>G.A. Montague and E.B. Martin</i>
16:00	Break	
16:15 -	Poster Session	
17:00		

chair: *M. Betancur*

M1.1	Bioreactor measurement and simulation environment, <i>K. Salonen, K. Kiviharju and T. Eerikäinen</i>
M1.2	Recurrent neural control of wastewater treatment bioprocess via Maquardt learning, <i>I.S. Baruch, S.F. Escalante, C.R. Mariaca-Gaspar and J. Barrera-Cortes</i>
M1.3	QFT multivariable control of a biological wastewater treatment process using ASM1 model, <i>M. Barbu and S. Caraman</i>
M1.4	Dynamic sensitivity analysis of catharanthus roseus hairy roots metabolism, <i>M. Cloutier, M. Jolicoeur and M. Perrier</i>
M1.5	Sensitivity analysis of a simplified cheese ripening mass loss model, <i>A. Hélias, P.S. Mirade and G. Corrieu</i>
M1.6	Exact fuzzy observer for a baker's yeast fermentation process, <i>E. Herrera, B. Castillo, J. Ramírez and E.C. Ferreira</i>
M1.7	Control of a bioreactor with sampled delayed measurement, <i>P. García-Sandoval, V. González-Álvarez and B. Castillo-Toledo</i>
M1.8	An interval observer for non-monotone systems: Application to an industrial anaerobic digestion process, <i>M. Moisan and O. Bernard</i>
M1.9	Are Monod models enough for bioreactor control? Part I - Experimental results, <i>C. Klockow, D. Hüll, L.S. Ferreira, J.O. Trierweiler and B. Hitzmann</i>
M1.10	Are Monod models enough for bioreactor control? Part II – Some simulation results, <i>J.O. Trierweiler, L.S. Ferreira, C. Klockow, D. Hüll and B. Hitzmann</i>
M1.11	Knowledge based discovery in fed-batch bioprocess, <i>A. Doncescu and S. Regis</i>

Morning

08:30	Plenary: Chemical Reaction engineering in post-genomic biotechnology , <i>W.S. Hu, University of Minnesota</i> chair: <i>J.A. Moreno</i>	
09:30	Keynote: Inverse metabolic engineering by integration of multiple omics analyses , <i>H. Shimizu, T. Hirasawa, K. Yoshikawa, Y. Nakakura, K. Nagahisa, C. Furusawa, Y. Katakura and S. Shioya, Osaka University</i> chair: <i>M. Perrier</i>	
10:00	Coffee Break	
	Studio I	Studio III
	Biomedical	Modelling 1
	chair: <i>A. Cinar</i> cochair: <i>J.A. Moreno</i>	chair: <i>H. Budman</i> cochair: <i>A. Cabrera</i>
10:20	Predictive control of blood glucose concentration in Type-I diabetic patients using linear input-output models, <i>S. Karra, N.M. Karim and B. Han</i>	Model formulation for hybridoma cultures in batch and fed-batch mode, <i>P. Dorka, C. Fischer, H.M. Budman and J.M. Scharer</i>
10:40	Adaptive control strategy for glucose regulation using recursive linear models, <i>M. Eren, A. Cinar, L. Quinn and D. Smith</i>	Assessing the main reactions in a bioprocess: Application to cheese ripening, <i>A. Hélias and O. Bernard</i>
11:00	Adaptive modeling for control of glycemia in critically ill patients, <i>T. Van Herpe, N. Haverbeke, M. Espinoza, G. Van den Berghe and B. De Moor</i>	Estimating the trehalose cytoplasmic content during a baker's yeast production process, <i>A.I. Cabrera, J.S. Aranda and J.I. Chairez</i>
11:20	A robust output-feedback treatment scheduling for HIV-1, <i>J.A. Moreno, G. Espinosa-Perez and E. Palacios</i>	Product formation kinetics in a recombinant protein production process, <i>S. Gnoth, M. Jenzsch, R. Simutis and A. Lübbert</i>
11:40	Simple 3D vascularization models for perfusion bioreactors, <i>F. Coletti and S. Macchietto</i>	Model for growth and AI-2-type quorum sensing of <i>Salmonella typhimurium</i> SL1344, <i>A.M. Cappuyens, K. Bernaerts, S.C. De Keersmaecker, J. Vanderleyden and J.F. Van Impe</i>
12:00	Lunch	

Afternoon

13:30	<p>Keynote: New insights on the monitoring of a biotransformation process using systems biology, <i>A. Sevilla, M. Canovas and J.L. Iborra, Universidad de Murcia</i> chair: <i>J.A. Moreno</i></p>	
	Studio I	Studio III
	Modelling 2	Experimental Techniques
	chair: <i>A. Vande Wouwer</i> cochair: <i>V. Alcaraz</i>	chair: <i>M.N. Pons</i> cochair: <i>H. Hernández</i>
14:00	Dynamical analysis of global observability properties for a class of biological reactors, <i>A. Schaum and J.A. Moreno</i>	Application of in-situ-microscopy and digital image processing in yeast cultivations, <i>P. Lindner, C. Krabichler, G. Rudolph, T. Scheper and B. Hitzmann</i>
14:20	Design of a sliding-mode observer for a biotechnological process, <i>M. Barbu and S. Caraman</i>	Monitoring of biofilm development and characterization of immobilized yeast cultivations, <i>E. Franco-Lara , V. Zúñiga Partida and V. González Álvarez</i>
14:40	Parameter identification to enforce practical observability of nonlinear systems, <i>G. Goffaux, L. Bodizs, A. Vande Wouwer, P. Bogaerts and D. Bonvin</i>	Improved image analysis based morphological control of recombinant moss in photo-bioreactors, <i>A. Lucumi, C. Posten, C. Steinweg, F. Lehr and M.N. Pons</i>
15:00	Use of modulating functions for reaction network identification, <i>O. Bernard</i>	PAT-Process analytical technology in cultivation processes with recombinant <i>escheria coli</i> , <i>C. Kaiser, T. Peuker, T. Bauch, A. Ellert and R. Luttmann</i>
15:20	On-line metabolic flux analysis in a PHB production process, <i>J. Dias, M.Eusébio, L.Serafim, A.Oehmen, M.A.M.Reis and R.Oliveira</i>	Development of a new probe for in-situ oxygen uptake rate (OUR) measurement in mammalian cell culture processes, <i>K. Joeris, L. Behr, M. Burnett, T. Scheper and K. Konstantinov</i>
15:40	A computational procedure for the integrative analysis of genomic data at the single sample level, <i>M. Zampieri, R. Spinelli, I. Cifola, C. Peano, D. Basso, F. Rocco, S. Ferrero, E. Fasoli, P. Mocarelli, C. Battaglia and S. Bicciato</i>	On-line monitoring of cell size distribution in mammalian cell culture processes, <i>O. Henry, S. Ansorge, M. Aucoin, R. Voyer and A. Kamen</i>
16:00	Break	
16:15 - 17:00	Poster Session	

chair: *V. Alcaraz*

T1.1	Determination of protein and fat content in fermentation raw materials with NIR reflectance spectroscopy, <i>A.P. Ferreira and J. Cardoso de Menezes</i>
T1.2	Comparison of state estimation techniques, applied to biological wastewater treatment process, <i>Q. Chai, B. Furenes and B. Lie</i>
T1.3	Decision method for states validation in a drinking water plant monitoring, <i>C. Isaza, E. Diez-Lledo, H. Hernandez de Leon, J. Aguilar-Martin and M.V. Le Lann</i>
T1.4	Model validation for a wastewater treatment plant, <i>E.N. Sanchez, J.-F. Beteau, C. Cadet, V.R. Flores and M. Le Goff</i>
T1.5	Velocity allowed red blood cell classification, <i>C. Allayous, S. Regis, A. Bruel, D. Schoevaert, R. Emilion and T. Marianne-Pepin</i>
T1.6	Advanced dynamical risk analysis for monitoring anaerobic digestion process, <i>J. Hess and O. Bernard</i>
T1.7	Paper mill wastewater treatment: Model design and validation on pilot plant, <i>C. Cadet, J.F. Béteau, A. Guillet, M. Aurousseau and C. Bassompierre</i>
T1.8	A nonlinear observer for bioprocesses using LMI, <i>R. Chiu, J.L. Navarro and J. Pico</i>
T1.9	Computational soft sensor for fungal biofiltration process, <i>A.I. Cabrera, J.I. Chairez and M.G. Ramírez</i>
T1.10	Statistical process monitoring of bioreactors: A comparison, <i>W. Long, O. Marjanovic and B. Lennox</i>
T1.11	Integrating disparate analytical instrumentation into an automated process control system used in cell culture process development, <i>K. Joeris, A. Johnson, M. Brosnan, C. Cruz, C. Zhang, M. Burnett and K. Konstantinov</i>

CAB+DYCOPS WEDNESDAY June 6th, 2007

Morning

08:30	Plenary: Control Opportunities in Systems Biology <i>P. Wellstead, Hamilton Institute, Ireland</i> chair: <i>B. Foss</i> , cochair: <i>M. Perrier</i>		
09:30	Coffee Break		
09:50	Studio I Keynote: Coordinating multiple optimization-based controllers: New opportunities and challenges <i>J. B. Rawlings, B.T. Stewart, University of Wisconsin, USA</i> chair: <i>B. Foss</i>	Studio III Keynote: Microbial ecology and bioprocess control : opportunities and challenges <i>A. Rapaport, J. Harmand, C. Lobry, F. Mazenc, B. Haegeman and D. Dochain</i> chair: <i>M. Perrier</i>	
	Studio I Optimization and MPC chair: <i>C. de Prada</i> cochair: <i>J. Mandler</i>	Studio II Reaction Networks chair: <i>G. Bastin</i> cochair: <i>E. Franco-Lara</i>	Studio III Wastewater Treatment 2 chair: <i>I. Smets</i> cochair: <i>A. Vargas</i>
10:20	Improved Target Calculation for Model Predictive Control <i>M. Hovd</i>	Analysis of metabolic networks of skeletal muscle cell energy metabolism, <i>B. Agar, A. Cinar, E. Opara and G. Reznik</i>	Modelling and identification of aeration systems for model predictive control of dissolved oxygen-Swarzewo wastewater treatment plant case study, <i>W.Krawczyk, R. Piotrowski, M.A. Brdys and W. Chotkowski</i>
10:40	Real-time Optimization of Continuous Processes via Constraints Adaptation <i>A. Marchetti, B. Chachuat and D. Bonvin</i>	Metabolic flux analysis of <i>Aspergillus Niger</i> AB1.13 cultivations, <i>G. Melzer, A. Dalpiaz, Y. Göcke, A. Grote, M. Kucklick, E. Franco-Lara, P. Dersch, B. Nörtemann and D.C. Hempel</i>	Implementation of toxic inhibition in wastewater treatment plant Benchmark simulation models, <i>M.N. Pons</i>
11:00	Post-optimality analysis of steady-state linear target calculation in a model predictive control <i>A.A. Al-Shammari and F.J. Forbes</i>	A general kinetic model structure Simulation and experimental validation, <i>A. Grosfils, A. Vande Wouwer and P. Bogaerts</i>	Automation of the acclimation phase in a sequencing batch reactor degrading inhibitory compounds, <i>A. Vargas, F. Velarde and G. Buitrón</i>
11:20	Bayesian approach for constraint analysis of MPC and industrial application <i>N. Agarwal, B. Huang and E.C. Tamayo</i>		Control of nutrient removing activated sludge system, <i>A. Stare, D. Vrečko, N. Hvala and S. Strmčnik</i>
11:40	Throughput maximization by improved bottleneck control <i>E.M.B. Aske, S. Skogestad and S. Strand</i>		Acclimation model of an aerobic bioreactor for the treatment of toxic wastewater, <i>F. Martínez, M.J. Betancur, J.A. Moreno, G. Buitrón and I. Moreno-Andrade</i>
12:00	Lunch		

Afternoon

	Studio I	Studio III	
13:30	Keynote: Bayesian methods for control loop monitoring and diagnosis <i>B. Huan</i> , University of Alberta, Canada chair: <i>W. Marquardt</i>	Keynote: Bistability Preserving Model Reduction in Apoptosis <i>S. Waldherr</i> , <i>T. Eissing</i> , <i>M. Chaves</i> and <i>F. Allgöwer</i> University of Stuttgart, Germany chair: <i>J.A. Moreno</i>	
	Studio I	Studio II	Studio III
	Fault detection and diagnosis chair: <i>C.C. Yu</i> cochair: <i>J. Alvarez-Ramírez</i>	Dynamic optimization chair: <i>J. Lee</i> cochair: <i>J. Alvarez</i>	Systems Biology chair: <i>M. Perrier</i> cochair: <i>H. Puebla</i>
14:00	Two-dimensional dynamics PCA with auto-selected support region <i>Y. Yao, N. Lu and F. Gao</i>	Dynamic optimization of a plate reactor start-up supported by Modelica-based code generation software <i>S. Haugwitz, J. Åkesson and P. Hagander</i>	Optimal dynamic experimental design in systems biology: Applications in cell signaling, <i>E. Balsa-Canto, A.A. Alonso and J.R. Banga</i>
14:20	Detection and effect of quantisation in data-driven process analysis <i>M. Bauer and S. Madolo</i>	Fast Computation of the Hessian of the Lagrangian in Shooting Algorithms for Dynamic Optimization <i>R. Hannemann and W. Marquardt</i>	Control and synchronization of intracellular calcium dynamics: A robust sliding control approach, <i>R. Aguilar-Lopez, O. Esquivel-Flores and H. Puebla</i>
14:40	Enhancing Fault Isolation Through Nonlinear Controller Design <i>B.J. Ohran, P. Mhaskar, D. Muñoz de la Peña, P.D. Christofides and J.F. Davis</i>	Profile control in distributed parameter systems using lexicographic optimization based MPC <i>N. Padhiyar and S. Bhartiya</i>	Control of coupled cicardian oscillators, <i>H. Puebla, M. Ortiz-Vargas, R. Aguilar-Lopez and E. Hernandez-Martinez</i>
15:00	Robust Fault Detection and Handling In Control of Uncertain Transport-Reaction Processes <i>N.H. El-Farra and S. Ghantasala</i>	Optimization-Based Safety Analysis of an Industrial-Scale Evaporation System with Hybrid Dynamics <i>A. Völker, C. Sonntag, S. Lohmann and S. Engell</i>	
15:20	Process Monitoring Using Key Sensitivity Index: Applications to Semiconductor Manufacturing <i>J.C. Jeng, A.J. Su, C.C. Yu and H.P. Huang</i>	Effect of Excitation Frequency in Perturbation-based Extremum Seeking Methods <i>M. Chioua, B. Srinivasan, M. Perrier and M. Guay</i>	
15:40		Multi-unit optimization with gradient projection on active constraints <i>L. Woodward, M. Perrier and B. Srinivasan</i>	
16:00 - 18:00	Poster Session		
20:00	Closing Ceremony and Conference Dinner - CAB		

CAB+DYCOPS WEDNESDAY June 6th, 2007

Late afternoon (16:00 - 18:00)

Poster Session

chair: J. Figueroa

W1.1	Optimal Transition Control of Diffusion-Convection-Reaction Processes, <i>M. Li and P.D. Christofides</i>
W1.2	Constructive MPC of a class of exothermic CSTR's, <i>J. Figueroa, S. Biagiola and J. Alvarez</i>
W1.3	LQG Control with reconfigurable state estimator under sensor and actuator failures, <i>U.S. Zamad, A.P. Deshpande and S.C. Patwardhan</i>
W1.4	Accounting risk in multistage stochastic problems using approximate dynamic programming, <i>N.E. Pratikakis, M.J. Realff and J.H. Lee</i>
W1.5	Using NMPC based on a low-order model for controlling pressure during oil well drilling, <i>G. Haukenes Nygaard, L. Struen Imsland and E. Aarsand Johannessen</i>
W1.6	Degrees of freedom analysis of economic dynamic optimal plantwide operation, <i>A.E.M. Huesman, O.H. Bosgra and P.M.J. Van den Hof</i>
W1.7	Design of a sliding mode neurocontroller for a nuclear research reactor, <i>J.H. Pérez-Cruz and A. Poznyak</i>
W1.8	Delay dynamic compensation enhanced PI controllers in automotive systems, <i>V. Assuncao</i>
W1.9	Optimal Control of the Simulated Moving Bed (SMB) chromatographic separation process, <i>M.S.G. García, E. Balsa-Canto, A. Vande Wouwer and J.R. Banga</i>
W1.10	Optimal start-up and steady-state transition policies in a pentene metathesis reactive distillation column, <i>R. López-Negrete de la Fuente and A. Flores-Tlacuahuac</i>
W1.11	Control and energy savings of the Petlyuk distillation system, <i>J.P. Rodríguez, E. Moreno, J.G. Segovia-Hernández, A. Jiménez and R. Maya-Yescas</i>
W1.12	The continuous stirred tank reactor: Adaptive LQ Control, <i>J. Vojtesek, P. Dostal and V. Bobal</i>
W1.13	One of possible approaches to control of multivariable control loop, <i>P. Navrátil and J. Balátě</i>
W1.14	Development of a 4-measurable states activated sludge process model deduced from the ASM1, <i>M. Mulas, S. Tronci and R. Baratti</i>
W1.15	Control properties analysis of alternate schemes to thermally coupled distillation schemes, <i>J. G. Segovia-Hernández, S. Hernández and H. Hernández</i>
W1.16	Robust Control of a Solidification Process with Parametric Uncertainty, <i>B. Furenes and B. Lie</i>

W1.17	Multivariable control of a reduction furnace, <i>M. Ramírez-Mendoza and P. Albertos</i>
W1.18	Combining Conceptual and Referential Reaction Methods for Batch Distillation Control, <i>J.L. Marchetti and J. Espinosa</i>
W1.19	Integrated closed loop control and process design, <i>G. Gutiérrez, P. Vega and C. de Prada</i>
W1.20	Dynamic behaviour of a novel small scale hydrogen reformer, <i>F.A. Michelsen, I. Schjøberg and B.F. Lund</i>
W1.21	Computational evaluation of the effect of some Thermolithography Process parameters on Rapid Prototyping, <i>R.A. Rezende, S.R. Andrade, A.L. Jardini, M.A.F. Scarparo and R. Maciel Filho</i>
W1.22	Molecular design of alternative refrigerants using genetic algorithms, <i>E. Oguz Ulker, M. Yuceer and R. Berber</i>
W1.23	Sensor fault diagnosis in dynamic processes, <i>A. Alawi and J. Morris</i>
W1.24	Modelling industrial fermentation data with multiway multivariate techniques, <i>A.P. Ferreira, J. Almeida Lopes and J. Cardoso de Menezes</i>
W1.25	Operational planning in the management of programmed maintenances A MILP approach, <i>F. Manenti and M. Rovaglio</i>
W1.26	Agent-Based Monitoring, Fault Detection, Diagnosis and Control of Spatially Distributed Processes, <i>S. Perk and A. Çinar</i>
W1.27	Development of endpoint detection algorithm in the multi-step plasma etching process, <i>K. Han, K.J. Park, H. Chae, C. Han and E. Sup Yoon</i>
W1.28	Scaling and discrimination issues in monitoring, fault detection and diagnosis, <i>S.R. Khare, V.A. Bavdekar, S.C. Kadu, K.P. Detroja and R.D. Gudi</i>
W1.29	Detection of anomalous behavior and performance assessment of predictive controllers, <i>R.A. Ghraizi, C. de Prada and E. Martínez</i>
W1.30	Adjustable-structure design for ternary distillation columns, <i>A. Pulis, C. Fernandez, R. Baratti and J. Alvarez</i>
W1.31	Quantifying the impact of control loop performance, time delay, and white-noise over the final product variability, <i>M. Farenzena and J.O. Trierweiler</i>