

CURRICULUM VITAE

Mirko FIACCHINI - CNRS researcher CR at GIPSA-lab, UMR 5216, Grenoble.

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Formation and positions

- *11/2012-Today* : CNRS researcher at GIPSA-lab Grenoble
- *10/2011-09/2012* : Post-doctoral researcher at CRAN Nancy
- *02/2010-09/2011* : Post-doctoral researcher at LAAS-CNRS Toulouse
- *2006-01/2010* : PhD student on Automatic control, University of Seville, Spain
- *2007-2008* : (*1 year*) : visiting student at the Institute for Automatics, ETH Zurich, Switzerland
- *2004-2006* : *Diploma de Estudios Avanzados (DEA)* in Automatics and Robotics, Univ. Seville
- *1996-2004* : *Laurea* degree in Computer science (speciality Automatics), Univ. Florence, Italy
- *2003-2004* : (*1 year*) : ERASMUS student at University of Seville, Spain

Scientific production

- 41 publications in peer-review international journals (*IEEE Trans. on Automatic Control, Automatica, SIAM Jour. Control Optim., Annual Reviews in Control, Systems & Control Letters, etc.*)
- 4 book chapters
- 50 publications in peer-review international conferences (*CDC, ECC, ACC, IFAC, MSC, etc.*)

Research projects

- PI of the PERSYVAL-lab project DAMon (Data-based Anesthesia Monitoring) funded by ANR French program Investissement d'avenir 2021-2024.
- GIPSA responsible of the industrial collaboration contract with CALOR ent. (SEB group), 2018-2020.
- HANDY (Hybrid And Networked Dynamical sYstems) funded by ANR 2019-2022.
- CompACS (Computation Aware Control Systems) funded by ANR and FRAE, 2013-2017.
- PRISMER (Intercon. électr. hydroliennes et export électr. ferme), funded by ADEME, 2013-2017.
- LimICoS (Synthèse et analyse des systèmes avec informations limitées) funded by ANR, 2012-2016.
- CATS (Computer-Assisted Therapeutic Strategies), funded by INSERM, 2013-2016.
- Responsible of PERSYVAL-lab exploratory project (Set Theory and Alg. for Dyn. Syst.), 2014-2015.
- ArHyCo (Architectures Hybrides et Contraintes) funded by ANR, 2009-2012.

Research interests

- Set-theory and invariance ; Optimization-based and Predictive control ; Hybrid and switched systems ; Saturated systems ; Sampled-data systems ; Biological systems

Teaching and formation

- PhD thesis director of R. Riah 2013-2016 ; K. Moussa 2017-2020 ; L.J. da Silva Moreira 2018-2021 ; D. Denardi Huff 2019-2023 ; B. Aubouin-Pairault 2021-2024.
- Internships direction : 2 Master 1 UGA 2018 ; 2 Master 2 UPS 2011 ; 1 Master 2 UGA 2021.
- Lecturer M2 course "Optimal control", at the UJF-UGA, Grenoble, 2013-2014, 2019-2022.
- Lecturer M1 course "SISO feedback control", at the UJF-UGA of Grenoble, 2013-2012.

- Responsible of internship organization for the Master 2 MISCIT, UJF, 2013-2014.
- Assistant lecturer at : ENSE3 of Grenoble 2013-2022 ; the ESSTIN of Nancy 2012 ; UPS, ISAE and INSA of Toulouse 2011 ; University of Seville 2006-2009 Spain.

Editorial, organization and management activities

- Head of the group *MODUS* of GIPSA-lab, since 2020.
- Vice-head (*adjoint*) of the group *SYSCO* of GIPSA-lab, 2014-2019.
- International Program Committee member for the IFAC ROCOND22.
- Scientific Chair of the 41th International Summer School of Automatic Control, Grenoble, September 2021.
- Associate Editor in the Conference Editorial Board of the IEEE CSS since 2017.
- Associate Editor in the European Control Conference since 2020.
- Local Organizer of the International Summer School of Automatic Control, Grenoble, since 2018.
- Publication Chair and NOC member of the 1st *IFAC LPVS* workshop, Grenoble, October 2015.
- Co-organizer of the 1st *Journées de l'Automatique GDR MACS*, Grenoble, October 2015.
- Scientific Chair of the 35th International Summer School of Automatic Control, Grenoble, September 2014.
- Member of the *IFAC Technical Committee 2.5 on Robust Control*, since 2015.
- International Program Committee member for the ECC15.
- Associate Editor for IMA Journal of Mathematical Control and Information, 2014-2015.
- Reviewer for several international journals (IEEE TAC, Automatica, etc.) and several international conferences (CDC, ACC, ECC, IFAC-WC, etc).

 THESIS AND POST-DOC DIRECTION

PhD thesis

10/2013-11/2016 **Rachid Riah** (50% with M. Alamir) *Théorie des ensembles pour le contrôle robuste des systèmes non linéaires : Application à la chimiothérapie et les thérapies antiangiogéniques*. Doctoral school EEATS

10/2017-12/2020 **Kaouther Moussa** (70% with M. Alamir) *Domain of attraction estimation and optimization-based control : Application to tumor growth models*. Doctoral school EEATS

12/2018-11/2021 **Lucas José da Silva Moreira** (33% with G. Besançon and F. Ferrante) *Modélisation et commande multivariables pour la production d'aluminium*. Doctoral school EEATS

03/2019-02/2023 **Daniel Denardi Huff** (50% with J.M. Gomes da Silva Jr.) on *Optimization-based Control of Aperiodically Sampled Saturated Systems*, funded by IDEX UGA and CAPES Brazilian scholarship.

Post-docts

12/2015-11/2016 **Sofiane Ben Chabane** (50% with M. Alamir) on *distributed control design and optimization for a tidal farm system*, funded by ADEME project PRISMER ;

02/2016-12/2016 **Miguel Angel Davo Navarro** (50% with C. Prieur) on *event-triggered control for nonlinear systems*, funded by ANR project LimICoS ;

02/2017-11/2017 **Rachid Riah** (50% with M. Alamir) on *distributed control design and optimization for a tidal farm system*, funded by ADEME project PRISMER.

 SCIENTIFIC INTERESTS

My current research is mainly focused on :

Set-theory and invariance : Set-theoretic methods, invariance and contractivity for nonlinear systems. Estimation of the domain of attraction. Set-induced Lyapunov functions. Invariant subspaces. Stochastic reachability.

Sampled-data systems : Set-based stability conditions for aperiodic sampled-data systems ; stability and control design for saturated aperiodic sampled-data systems.

Switched systems : Quadratic stability analysis of hybrid and reset systems. Stabilizability and nonconvex Lyapunov functions for discrete-time switched linear systems.

Saturated systems : Convex set-induced Lyapunov functions for saturated systems. Sufficient and necessary conditions for convergence based on convex analysis.

Decentralized systems : Convex analysis for graph topology preservation for multi-agent systems. LMI conditions for connections preservation, convergence and consensus tasks.

Optimal and Predictive control : Design of predictive and optimal control strategies. Stochastic predictive control. Applications to energy and mobile vehicles.

Biological systems Control-based methods for chemo and immunotherapy design for tumor growth models and control-based anesthesia assistance. Modelling of COVID-19 epidemic.

Chemical process control Modelling and control of electrolysis process for aluminum production.

INTERNATIONAL COLLABORATIONS

Scientific collaboration with **J. M. Gomes da Silva Jr.** from the Université do Rio Grande do Sul (UFRGS), Porto Alegre, Brésil, on *aperiodically sampled saturated systems*. I spent two weeks at UFRGS in November 2014 and Gomes da Silva has been at GIPSA-lab in September 2016.

Scientific collaboration with **T. Alamo** from the University of Seville, Spain, on *probabilistic invariant set computation for switched systems*. Alamo have been visiting GIPSA-lab in December 2014, November 2016 and January 2017 and I have been spending one week in Seville in April 2019.

RESEARCH AND INDUSTRIAL PROJECTS

Participation in several national and international research projects in the field of automatic control :

GIPSA-lab responsible of the industrial collaboration contract with **CALOR ent.** (SEB group), 2018-2019. The project concerns the application of control and identification techniques to a device developed by CALOR. I am the main scientific researcher.

HANDY (Hybrid And Networked Dynamical sYstems) funded by ANR 2019-2022. The project has started this year. I have been involved in the project proposal writing and I am one of the GIPSA-lab researchers involved.

CompACS (Computation Aware Control Systems) funded by ANR and FRAE, France, 2013-2018. I have been the only GIPSA-lab researcher involved in the project, that led to the production of several scientific publications, in particular on the subject of switched, reset and decentralized systems.

PRISMER (Interconnexion électrique d'hydroliennes et export de l'électricité d'une ferme), funded by ADEME, France, 2013-2017. I have been one of the two GIPSA-lab researchers involved. This project led to the realization and test of a model for hydroelectric systems farm. Two post-doctoral researchers have been co-directed in this framework.

LimICoS (Synthèse et analyse des systèmes avec informations limitées) funded by the ANR, France, 2012-2016. I have been working with other researchers from GIPSA-lab on problems related to nonlinear systems stability through event-triggered and uniting control methods. The project have been developed also through the co-direction of a post-doctoral researcher.

GIPSA-lab main researcher of **PERSYVAL exploratory project** (Set Theory and Algorithms for Dynamical Systems) funded by PERSYVAL-lab, France, 2014-2015. I have been the main GIPSA researcher of this exploratory project that led to the production of several scientific papers on set-theoretic methods and invariant sets computation.

CATS (Computer-Assisted Therapeutic Strategies), funded by INSERM, France, 2013-2015. This project concerned the collaboration of GIPSA-lab with other two laboratories involved in the modeling of tumor dynamical systems and their applications to cancer therapy design. The two members of the GIPSA-lab have been focused on the design and validation of simplified control-oriented model.

ArHyCo (Architectures Hybrides et Contraintes) funded by ANR, 2009-2012. The two post-doctoral contract I had, with LAAS and CRAN laboratories, have been funded by this project, which led to the production of several scientific publications on the stability of reset and saturated systems.

EVALUATION PANELS PARTICIPATIONS

Member of **5 Ph.D evaluation panels**, in Spain and in France.

Member of the evaluation panel for **associate professor (maître de conférences) concours** at *École Centrale Lyon*, 05/2018.

Member of the evaluation panel for **associate professor (maître de conférences) concours** at *INSA, Toulouse*, 05/2021.

Scientific expert for ERC Projects Proposals, 2020.

Scientific expert for ANR Projects Proposals, 2016.

EDITORIAL AND ORGANIZATION ACTIVITY

Head of the group MODUS of GIPSA-lab, since 2020.

Vice-head (“adjoint”) of the group SYSCO of GIPSA-lab, 2014-2019.

International Program Committee member for the IFAC ROCOND22.

Scientific Chair of the 41th Int. Summer School of Automatic Control, Grenoble, September 2021.

Associate Editor in the Conference Editorial Board of the IEEE CSS, since 2017.

Associate Editor for European Control Conference, since 2020.

Local organizer of the International Summer School of Automatic Control of Grenoble, since 2018.

Publication Chair of the 1st IFAC Workshop on Linear Parameter Varying Systems, 2015.

International Program Committee member for the ECC15.

Co-organizer of the 1st edition of the “Journées de l’Automatique GDR MACS”, Grenoble, 2015.

Scientific Chair of the 35th Int. Summer School of Automatic Control, Grenoble, September 2014.

Member of the *IFAC Technical Committee 2.5 on Robust Control*, since 2015.

Associate Editor for IMA Journal of Mathematical Control and Information, 2014-2015.

Reviewer for several international journals (IEEE TAC, Automatica, etc.) and several international conferences (CDC, ACC, ECC, IFAC-WC, etc).

I. LIST OF PUBLICATIONS

International journal papers :

- 1) D. Denardi Huff, M. Fiacchini, J. M. Gomes da Silva Jr. (2022) **Necessary and Sufficient Convex Condition for the Stabilization of Linear Sampled-data Systems under Poisson Sampling Process**, *IEEE Control Systems Letters (L-CSS)*.
- 2) D. Denardi Huff, M. Fiacchini, J. M. Gomes da Silva Jr. (2022) **Polyhedral Estimates of the Region of Attraction of the Origin of Linear Systems under Aperiodic Sampling and Input Saturation**, *Automatica*.
- 3) K. Moussa, M. Fiacchini, M. Alamir, (2022) **Probabilistically certified region of attraction of a tumor growth model with combined chemo- and immunotherapy**, *Int. J. Robust Nonlinear Control*. 1-17. doi :10.1002/rnc.6158
- 4) L. J. da Silva Moreira, M. Fiacchini, G. Besançon, F. Ferrante, H. Roustan, (2022) **Modeling and Observer Design for Aluminum Manufacturing**, *European Journal of Control*.
- 5) K. Moussa, M. Fiacchini, M. Alamir, (2021) **Robust domain of attraction estimation for a tumor growth model**. *Applied Mathematics and Computation*, **410**.
- 6) M. Fiacchini, T. Alamo, (2021) **Probabilistic reachable and invariant sets for linear systems with correlated disturbance**. *Automatica*.
- 7) M. Fiacchini, (2021) **Yet another computation-oriented necessary and sufficient condition for stabilizability of switched linear systems**. *IEEE Transactions on Automatic Control*.
- 8) D. Denardi Huff, M. Fiacchini, J. M. Gomes da Silva Jr. (2021) **Polyhedral Regions of Stability for Aperiodic Sampled-data Linear Control Systems with Saturating Inputs**. *IEEE Control Systems Letters (L-CSS)*.
- 9) D. Denardi Huff, M. Fiacchini, J. M. Gomes da Silva Jr. (2021) **Stability and Stabilization of Sampled-data Systems subject to Control Input Saturation : a set invariant approach**. *IEEE Transactions on Automatic Control*.
- 10) M. Fiacchini, M. Alamir. (2021) **The Ockham's razor applied to COVID-19 model fitting French data**. *Annual Reviews in Control*.
- 11) I. Hosseini, M. Fiacchini, P. Karimaghaee, A. Khayatian. (2020) **Optimal reset unknown input observer design for fault and state estimation in a class of nonlinear uncertain systems**. *Journal of the Franklin Institute*, **357(5)**, 2978-2996.
- 12) M. Fiacchini, G. Millérioux. (2019) **Dead-beat stabilizability of discrete-time switched linear systems : algorithms and applications**. *IEEE Transactions on Automatic Control*, **64(9)**. 3839-3845.
- 13) I. Hosseini, A. Khayatian, P. Karimaghaee, M. Fiacchini, M. A. Davo. (2019) **LMI-based reset unknown input observer for state estimation of linear uncertain systems**. *IET Control Theory & Applications*, **13**. 1872-1881.
- 14) R. Riah, M. Fiacchini, M. Alamir. (2019) **Iterative method for estimating the robust domains of attraction of non-linear systems : Application to cancer chemotherapy model with parametric uncertainties**. *European Journal of Control*, **47**. 64-73.

- 15) M. Alamir, M. Fiacchini, I. Queinnec, S. Tarbouriech, M. Mazerolles. (2018) **Feedback law with probabilistic certification for Propofol-based control of BIS during anesthesia.** *Int. J. Robust Nonlinear Control*, **28**. 6254-6266.
- 16) M. Fiacchini, M. Jungers, A. Girard. (2018) **Stabilization and control Lyapunov functions for language constrained discrete-time switched linear systems.** Regular paper in *Automatica*, **93**. 64-74.
- 17) R. Gonzalez, M. Fiacchini, K. Iagnemma. (2018) **Slippage prediction for off-road mobile robots via machine learning regression and proprioceptive sensing.** *Robotics and Autonomous Systems*, **105**. 85-93.
- 18) S. Ben Chabane, M. Alamir, M. Fiacchini, R. Riah, T. Kovaltchouk, S. Bacha. (2018) **Electricity grid connection of a tidal farm : an active power control framework constrained to grid code requirements.** *IEEE Transactions on Sustainable Energy*, **9**. 1948-1956.
- 19) M. A. Davo, C. Prieur, M. Fiacchini, D. Nešić. (2018) **Enlarging the basin of attraction by a uniting output feedback controller.** *Automatica*, **90**. 73-80.
- 20) M. A. Davo, C. Prieur, M. Fiacchini. (2017) **Stability analysis of output feedback control systems with memory-based event-triggering mechanism.** *IEEE Transactions on Automatic Control*, **62**(12). 6625-6632.
- 21) M. Fiacchini, S. Tarbouriech. (2017) **Control co-design for discrete-time switched linear systems.** *Automatica*, **82**. 181-186.
- 22) M. Fiacchini, A. Girard, M. Jungers. (2016) **On the stabilizability of discrete-time switched linear systems : novel conditions and comparisons.** Full paper in *IEEE Transactions on Automatic Control*, **61**(5). 1181-1193.
- 23) M. Fiacchini and I.-C. Morărescu. (2016) **Constructive necessary and sufficient condition for the stability of quasi-periodic linear impulsive systems.** *IEEE Transactions on Automatic Control*, **61**(9). 2512-2517.
- 24) A. Tanwani, C. Prieur, M. Fiacchini. (2016) **Observer-based feedback stabilization of linear systems with event-triggered sampling and dynamic quantization.** *Systems & Control Letters*, **94**. 46-56.
- 25) M. Fiacchini, C. Prieur, S. Tarbouriech. (2015) **On the computation of set-induced control Lyapunov functions for continuous-time systems.** *SIAM Journal on Control and Optimization*, **53**(3). 1305 - 1327.
- 26) T. Manrique, M. Fiacchini, T. Chambrion, G. Millerioux (2015) **MPC-based tracking for real-time systems subject to time-varying polytopic constraints.** *Optimal Control Applications and Methods*, **37**. 708-729.
- 27) A. H. González, A. Ferramosca, G. A. Bustos, J. L. Marchetti, M. Fiacchini, D. Odloak (2014) **Model predictive control suitable for closed-loop re-identification.** *Systems & Control Letters*, **69**. 23 - 33.
- 28) I.-C. Morărescu, M. Fiacchini. (2014) **LMI conditions for topology preservation : application to multi-agents tasks.** *Journal of Control Engineering and Technology*, **4**(3). 183 - 191.
- 29) M. Fiacchini, I.-C. Morărescu. (2014) **Convex conditions on decentralized control for graph topology preservation.** *IEEE Transactions on Automatic Control*, **59**(6). 1640 - 1645.

- 30) M. Fiacchini, M. Jungers. (2014) **Necessary and sufficient condition for stabilizability of discrete-time linear switched systems : A set-theory approach.** *Automatica*, **50**(1). 75 - 83.
- 31) M. Fiacchini, G. Millerioux. (2013) **Dead-beat functional observers for discrete-time LPV systems with unknown inputs.** *IEEE Transactions on Automatic Control*, **58**(12). 3230 - 3235.
- 32) M. Fiacchini, T. Alamo, E. F. Camacho. (2012) **Invariant sets computation for convex difference inclusions systems.** *Systems & Control Letters*, **61**. 819 - 826.
- 33) M. Fiacchini, S. Tarbouriech, C. Prieur. (2012) **Quadratic stability for hybrid systems with nested saturations.** *IEEE Transactions on Automatic Control*, **57**. 1832 -1838.
- 34) R. Gonzalez, M. Fiacchini, T. Alamo, J. L. Guzman, F. Rodriguez. (2011) **Online robust tube-based MPC for time-varying systems : A practical approach.** *International Journal of Control*, **84**. 1157 - 1170.
- 35) R. Gonzalez, M. Fiacchini, J. L. Guzman, T. Alamo, F. Rodriguez. (2011) **Robust tube-based predictive control for mobile robots in off-road conditions.** *Robotics and Autonomous Systems*, **59**. 711 - 726.
- 36) S. Tarbouriech, I. Queinnec, T. Alamo, M. Fiacchini, E. F. Camacho. (2011) **Ultimate bounded stability and stabilization of linear systems interconnected with generalized saturated functions.** *Automatica*, **47**. 1473 - 1481.
- 37) M. Fiacchini, T. Alamo, E. F. Camacho. (2010) **On the computation of convex robust control invariant sets for nonlinear systems.** *Automatica*, **46**. 1334 - 1338.
- 38) R. Gonzalez, M. Fiacchini, T. Alamo, J. L. Guzman, F. Rodriguez. (2010) **Adaptive control for a mobile robot under slip conditions using an LMI-based approach.** *European Journal of Control*, **16**. 144 - 158.
- 39) T. Alamo, A. Cepeda, M. Fiacchini, E.F. Camacho. (2009) **Convex invariant sets for discrete-time Lur'e systems.** *Automatica*, **45**. 1066 - 1071.
- 40) M. Fiacchini, T. Alamo, I. Alvarado, E. F. Camacho. (2008) **Safety verification and adaptive model predictive control of the hybrid dynamics of a fuel cell system.** *International Journal of Adaptive Control and Signal Processing*, **22**. 142 - 160.
- 41) L. A. Viguria, A. Prieto, M. Fiacchini, R. Cano, F. Rodriguez, J. Aracil, C. Canudas de Wit. (2006) **Desarrollo y exprementación de un vehículo basado en péndulo invertido (Ppcar).** *Riai : Revista Iberoamericana de Automática e Informática Industrial*, **3**. 54 - 63.

Book chapters :

- 1) M. Fiacchini, M. Jungers, A. Girard, S. Tarbouriech (2018) **Stabilizability and control co-design for discrete-time switched linear systems.** *Control subject to Computational and Communication Constraints : Current Challenges*, Springer.
- 2) M. Fiacchini and I.-C. Morărescu. (2016) **Topology preservation for multi-agent networks : design and implementation.** *Delays and Networked Control Systems*, Springer.

- 3) M. Fiacchini, S. Tarbouriech, C. Prieur. (2013). **Exponential stability for hybrid systems with saturations.** *Hybrid systems with constraints*. ISTE Ltd and John Wiley & Sons Inc. 179 - 212.
- 4) T. Alamo, M. Fiacchini, A. Cepeda, D. Limon, E. F. Camacho, J. M. Bravo. (2007). **On the computation of robust control invariant sets for piecewise affine systems.** *Assessment and Future Directions of Nonlinear Model Predictive Control (Lncis)*. New York. Springer-Verlag. 131 - 140.

International conferences :

- 1) D. Denardi Huff, M. Fiacchini, J. M. Gomes da Silva Jr. (2022) **Necessary and Sufficient Convex Condition for the Stabilization of Linear Sampled-data Systems under Poisson Sampling Process**, *61st Conference on Decision and Control CDC22*, Cancun, Mexico.
- 2) M. Fiacchini, T. Alamo. (2022) **Stochastic model predictive control for linear systems affected by correlated disturbances**, *10th IFAC Symposium on Robust Control Design ROCOND 2022*, Kyoto, Japan.
- 3) L. M. Chaouach, M. Fiacchini, T. Alamo. (2022) **Indirect feedback stochastic model predictive control for linear systems affected by correlated disturbances**, *10th IFAC Symposium on Robust Control Design ROCOND 2022*, Kyoto, Japan.
- 4) D. Denardi Huff, M. Fiacchini, J. Gomes da Silva Jr. (2021) **Stabilization of Aperiodic Sampled-data Linear Systems with Input Constraints : a Low Complexity Polyhedral Approach**, *60th Conference on Decision and Control CDC21*, Austin, TX, USA.
- 5) L. J. da Silva Moreira, G., Besançon, F., Ferrante, M. Fiacchini, H. Roustan (2021) **Observer Based Predictive Controller for Hall-Heroult Process**, *2021 European Control Conference (ECC)*.
- 6) L. J. da Silva Moreira, M. Fiacchini, G., Besançon, F., Ferrante, H. Roustan (2020) **State Affine Modeling and Observer Design for Hall-Hérout Process**. *IFAC World Congress 2020*.
- 7) L.J. da Silva Moreira, G. Besançon, F. Ferrante, M. Fiacchini, H. Roustan (2020) **Model based approach for online monitoring of aluminum production process**. *TMS Annual Meeting*, San Diego, CA, USA.
- 8) K. Moussa, M. Fiacchini, M. Almir. (2019) **Robust Optimal Scheduling of Combined Chemo- and Immunotherapy : Considerations on Chemotherapy Detrimental Effects**. *the 2020 American Control Conference (ACC20)*, Denver, USA.
- 9) K. Moussa, M. Fiacchini, M. Almir. (2019) **Robust optimal control-based design of combined chemo and immunotherapy delivery profiles**. *The 8th IFAC Conference on Foundations of Systems Biology in Engineering (FOSBE 2019)*, Valencia, Spain.
- 10) M. Fiacchini, J.M. Gomes da Silva Jr. (2018) **Stability of sampled-data control systems under aperiodic sampling and input saturation**. *The 57th IEEE Conference on Decision and Control (CDC 2018)*, Miami Beach, USA.
- 11) M. Jungers, A. Girard, M. Fiacchini. (2018) **Language constrained stabilization of discrete-time switched linear systems : an LMI approach**. *IFAC Conference on Analysis and Design of Hybrid Systems (ADHS 2018)*. Oxford, UK.

- 12) M. Fiacchini, G. Millérioux. (2017) **Dead-beat stabilizability of autonomous switched linear discrete-time systems.** *The 20th IFAC World Congress (IFAC 2017)*, Toulouse. France.
- 13) M. Fiacchini, I.-C. Morărescu. (2016) **Stability analysis for systems with asynchronous sensors and actuators** *The 55th IEEE Conference on Decision and Control (CDC 2016)*. Las Vegas. USA.
- 14) M. Almir, M. Fiacchini. (2016) **Observer-based efficiency enhancement in cell-cycle specific therapies.** *The 55th IEEE Conference on Decision and Control (CDC 2016)*. Las Vegas. USA.
- 15) M. Jungers, A. Girard, M. Fiacchini. (2016) **Language constrained stabilization of discrete-time switched linear systems : a Lyapunov-Metzler inequalities approach.** *The 55th IEEE Conference on Decision and Control (CDC 2016)*. Las Vegas. USA.
- 16) M. A. Davo, M. Fiacchini, C. Prieur. (2016) **Output memory-based event-triggered control.** *The 55th IEEE Conference on Decision and Control (CDC 2016)*. Las Vegas. USA.
- 17) M. Fiacchini, I. Queinnec, S. Tarbouriech, M. Mazerolles. (2016) **Invariant based control of induction and maintenance phases for anesthesia.** *The 6th IFAC Conference on Foundations of Systems Biology in Engineering (FOSBE 2016)*. Magdeburg. Germany.
- 18) M. Fiacchini, M. Jungers, A. Girard. (2016) **Exponential stabilization of language constrained discrete-time switched linear systems : a geometrical approach.** *The 15th European Control Conference 2016 (ECC16)*. Aalborg. Denmark.
- 19) R. Riah, M. Fiacchini, M. Almir. (2016) **Domain of attraction estimation of cancer chemotherapy model affected by state proportional uncertainty.** *The 15th European Control Conference 2016 (ECC16)*, Aalborg, Denmark.
- 20) T. Kovaltchouk, V. Debusschere, S. Bacha, M. Fiacchini, M. Almir. (2016) **Assessment of the Impact of Frequency Containment Control and Synthetic Inertia on Intermittent Energies Generators Integration.** *The EVER Conference 2016*. Monaco.
- 21) M. Almir, M. Fiacchini, S. Ben Chabane, S. Bacha, T. Kovaltchouk. (2016) **Active Power Control under Grid Code Constraints for a Tidal Farm.** *The EVER Conference 2016*. Monaco.
- 22) R. Riah, M. Fiacchini, M. Almir. (2015) **Invariance-based analysis of cancer chemotherapy.** *The 2015 IEEE Multi-Conference on Systems and Control (MSC15), 2015*. Sydney. Australia.
- 23) R. Riah, M. Fiacchini. (2015) **New condition for invariance of ellipsoidal sets for discrete-time saturated systems.** *The 2015 IEEE Multi-Conference on Systems and Control (MSC15), 2015*. Sydney. Australia.
- 24) M. Almir, M. Fiacchini, A. Stéphanou (2015) **Reduced model for 2D tumor growth and tumor induced angiogenesis.** *The 14th European Control Conference 2015 (ECC15)*. Linz. Austria.
- 25) M. Fiacchini, A. Girard, M. Jungers. (2014) **On stabilizability conditions for discrete-time switched linear systems.** *The 53th Conference on Decision and Control (CDC 2014)*. Los Angeles, California. USA.
- 26) M. Fiacchini, I.-C. Morărescu (2014) **Set theory conditions for stability of linear impulsive**

- systems.** *The the 53th Conference on Decision and Control (CDC 2014).* Los Angeles, California. USA.
- 27) T. Manrique, M. Fiacchini, T. Chambrion, G. Millerioux (2014) **MPC tracking under time-varying polytopic constraints for real-time applications** *The 13th European Control Conference (ECC14).* Strasbourg. France.
 - 28) M. Fiacchini, C. Prieur, S. Tarbouriech. (2013) **Necessary and sufficient conditions for invariance of convex sets for discrete-time saturated systems.** *The 52nd IEEE Conference on Decision and Control (CDC 2013).* Florence. Italy.
 - 29) M. Fiacchini, M. Jungers. (2013) **Necessary and sufficient condition for stabilizability of discrete-time linear switched systems : a set-theory approach.** *The 2013 IFAC joint conference, 5th Symposium on System Structure and Control (IFAC-SSSC 2013).* Grenoble. France.
 - 30) T. Manrique, M. Fiacchini, T. Chambrion, G. Millerioux. (2013) **MPC for a low consumption electric vehicle with time-varying constraints.** *The 2013 IFAC joint conference, 5th Symposium on System Structure and Control (IFAC-SSSC 2013).* Grenoble. France.
 - 31) M. Fiacchini, G. Millerioux (2012) **Fast input-free observers for LPV discrete-time systems.** *The 51th IEEE Conference on Decision and Control (CDC 2012).* Hawaii. USA.
 - 32) M. Fiacchini, I.-C. Morărescu (2012) **Set-theory based condition for network topology preservation for decentralized control.** *The 51th IEEE Conference on Decision and Control (CDC 2012).* Hawaii. USA.
 - 33) T. Manrique, H. Malaise, M. Fiacchini, T. Chambrion, G. Millerioux (2012) **Model Predictive Real-Time controller for a low-consumption electric vehicle.** *The 2nd International Symposium on Environment-Friendly Energies and Applications (EFEA 2012).* Newcastle. United Kingdom.
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