Curriculum Vitae

LORENZO FAGIANO

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Education

01/06 – 02/09 **Politecnico di Torino**, Torino, Italy
Ph.D., Information and Systems Engineering
Thesis: *Control of Tethered Airfoils for High-Altitude Wind Energy Generation*
Advisor: Prof. Mario Milanese

09/02 – 10/04 **Politecnico di Torino**, Torino, Italy
M.S., Automotive Engineering

09/99 – 07/02 **Politecnico di Torino**, Torino, Italy
B.S., Automotive Engineering

Employment

09/10 – **University of California**, Santa Barbara, CA
Visiting researcher
Politecnico di Torino, Torino, Italy
Marie Curie fellow

02/09 – 08/10 **Politecnico di Torino**, Torino, Italy
Post-doc research assistant

09/09 **Modelway S.r.l.**, Torino, Italy
Short-term contract for the EU research project "KitVes"

07/08 – 09/08 **Politecnico di Torino**, Torino, Italy
Short-term contract for the activity "control of kites for energy generation"

10/07 – 12/07 **Katholieke Universiteit Leuven**, Leuven, Belgium
Visiting scholar in the Dept. of Electric Engineering, OPTEC center

10/05 – 12/05 **Politecnico di Torino**, Torino, Italy
Short-term contract for the activity "development of control software for automotive applications"

01/05 – 09/05 **Fiat Research Center**, Orbassano, Italy
Permanent contract as development engineer in the field of control systems for vehicle dynamics

Awards

2010 **European Union Marie Curie International Outgoing Fellowship (IOF)**, for the project ICIEMSET – Innovative Control, Identification and Estimation Methodologies for Sustainable Energy Technologies. The total grant awarded amounts to 247,027.90 €, for salary and research expenses for three years.

2010 **ENI Award "Debut in Research" prize 2010**, for the best Italian Ph.D. thesis in the fields of hydrocarbons' combustion efficiency, renewable energies, and environment protection.

2010 **Maffezzoni prize 2009**, for the best Italian Ph.D. thesis in the field of automatic control and applications

2010 **Best reviewer acknowledgment**, IEEE Transactions on Automatic Control

2008 **Scientific performance award** of Politecnico di Torino, ranked 8th over more than 600 Ph.D. students in all engineering and architecture fields

2004 **Technical Automobile Association studentship** for the M.S. thesis on vehicle dynamics control using an active differential

2003 **C. Ghiglieno studentship** for the B.S. course in Automotive Engineering, assigned on a merit basis

Scientific activity

High-altitude wind energy generation

The potential of the concept of high-altitude wind energy generation using controlled wings has been firstly theoretically investigated in the late '70s, showing that if the wings are driven to fly in "crosswind" conditions, the resulting aerodynamic forces can generate surprisingly high power values. However, only in recent years more intensive studies have been carried out by quite few research groups in the world. The key idea is to use the aerodynamic forces generated by the wings, controlled with two cables, to produce energy using electric generators kept at ground level. This system can exploit wind flows at 1000 m of elevation, stronger and less variable than those blowing at 100-150 m, where the actual wind turbines operate. Each wing is equipped with on-board sensors, and other sensors are installed at ground level to monitor the generated energy and the wind conditions. Automatic control is the key point of high-altitude wind energy, since the controlled system is nonlinear, open loop unstable, subject to operational constraints and affected by large disturbances. The obtained results, including theoretical analyses, numerical simulations and experimental tests with a small-scale prototype built at Politecnico di Torino, indicate that this technology has the potential to provide large quantities of renewable energy, available practically everywhere in the world, at lower cost than those of fossil sources. The use of this concept for marine transportation and offshore wind energy has been also studied.

Simulation of stochastic nonlinear systems with Polynomial Chaos methods

Polynomial Chaos Expansions are a powerful tool to simulate complex, stochastic dynamical systems in an efficient way. They represent a general tool to devise the time evolution of the statistics of the variables of interest in a number of relevant applications, ranging from weather predictions to systems biology, from power grid analysis to mechanical systems. Yet, deriving the

expansion's coefficients for complex systems requires a significant and non-trivial manipulation of the model, or the computation of large numbers of simulation runs, rendering the approach too time consuming or impracticable for applications with more than a handful of random variables. A novel computationally tractable technique for computing the coefficients of polynomial chaos expansions is introduced, based on convex optimization. The approach can be applied to problems with a large number of random variables and uses a modest number of monte carlo simulations while avoiding model manipulations. Enhanced accuracy is further achieved by explicitly incorporating information on the stochastic process when available. In several case studies, a very low number of preliminary simulations yields a highly accurate description of the stochastic variables of interest, while achieving computational times that are orders of magnitude faster than traditional Monte Carlo simulations. These examples demonstrate the power of this approach and highlight its promise for broad applicability in science and engineering fields where nonlinear dynamics and stochastic phenomena interact.

Randomized Model Predictive Control

This line of research is concerned with the design of Model Predictive Control (MPC) laws for linear time invariant systems subject to both model uncertainty and external additive disturbances. By exploiting theoretical results in random convex programming (RCP), a randomization approach is used and it is shown that the resulting state-feedback control law achieves asymptotic closed loop stability and constraint satisfaction, up to a guaranteed level of probability that can be set arbitrarily close to one. The resulting Random MPC (RMPC) approach can be seen either as a relaxation of the deterministic robust MPC problem, or as a novel stochastic MPC technique, where the stochastic nature of the uncertainties is exploited in the algorithm. Differently from existing stochastic MPC techniques, the robust MPC problem is solved not in expectation, but in a probabilistically robust way. The main advantages of the proposed approach over existing methods, either deterministic or stochastic, are: 1) a reduced conservativeness of the stability and optimality results, 2) quite general settings and mild required assumptions on the problem structure and on the characterization of the uncertainty/disturbances, 3) convexity of the optimization problem to be solved at each time step.

Efficient implementation of Model Predictive Control laws

Model Predictive Control (MPC) techniques are able to efficiently cope with system nonlinearities and constraints, however their application to systems with "fast" dynamics (e.g. semi-active suspensions, vehicle lateral stability devices, airplane control systems, etc.) is hindered by the need to solve on-line a constrained finite horizon optimal control problem. The computational time required to solve such a numerical optimization problem may be too high with respect to the employed sampling time. A possible viable solution to this problem is the off-line computation of an approximated MPC law, to be evaluated on-line instead of performing the numerical optimization. However, a critical issue to be addressed when an approximated control law is employed regards the obtained approximation accuracy and, consequently, the stability properties of the resulting closed loop system. In this research topic we developed and theoretically investigated the properties of several approximation techniques, based on Set Membership theory, that allow to derive approximated MPC laws with arbitrarily good accuracy and guaranteed stabilizing properties.

Robust Nonlinear Model Predictive Control from data

Several methods exist in the literature to carry out a robustness analysis and/or a robust design of a Nonlinear Model Predictive Control (NMPC) law, using a model of the system to be controlled and some description of the related model uncertainty. Yet, in most practical cases only a model of the system to be controlled is available, without any uncertainty description and/or estimate. This issue is due to the difficulty to evaluate model uncertainty when nonlinear parametric models, either

"physical" or "black-box", are employed. To try to cope with this problem, we study the design of NMPC laws that employ models derived with a Nonlinear Set Membership (NSM) identification technique. The latter allows one to obtain both a non-parametric system model and a bound of the related uncertainty, directly from measured input-output data. The uncertainty bound is then used to carry out either a robustness analysis or a robust control design, via a min-max formulation of the finite horizon optimal control problem underlying the NMPC strategy.

Direct design of Moving Horizon Estimators
Moving Horizon Estimators (MHE) are able to provide a stable estimate of a variable of interest, also in the presence of nonlinear dynamics and constraints, by solving in real time a nonlinear program (NLP). However, the presence of model uncertainty and the eventual non-convexity of the NLP may cause a performance degradation. Starting from the consideration that a stable MHE can be approximated with arbitrarily good accuracy by a Nonlinear Finite Impulse Response (NFIR) filter, in this research topic an approach to derive a NFIR estimator directly from measured data, using a Set Membership technique, is proposed. The resulting estimator results to be an optimal approximation, in the sense of the worst-case error in any lp norm, of a (generally unknown) ideal MHE, i.e. a MHE obtained when an exact model of the system is used and the global minimum of the related NLP is attained. The approach has been applied to the problem of estimating the sideslip angle of road vehicles.

Teaching assistance

Academic Year 09/10	**Automatic Controls**, undergraduate course at Politecnico di Torino **Automatic Controls**, graduate course at Politecnico di Torino **Principles of Automatic Control**, undergraduate course at Politecnico di Torino **Model Predictive Control**, graduate course at Politecnico di Torino **Automatic Controls II,** graduate course at Politecnico di Torino
Academic Year 08/09	**Automatic Controls**, graduate course at Politecnico di Torino **Model Predictive Control**, graduate course at Politecnico di Torino
Academic Year 07/08	**Automatic Controls**, undergraduate course at Politecnico di Torino **Principles of Automatic Control**, undergraduate course at Politecnico di Torino **Model Predictive Control**, graduate course at Politecnico di Torino **Automatic Controls II,** graduate course at Politecnico di Torino
Academic Year 06/07	**Automatic Controls**, undergraduate course at Politecnico di Torino **Model Predictive Control**, graduate course at Politecnico di Torino **Automatic Controls II,** graduate course at Politecnico di Torino

Participation in international and national research projects

2011 - 2012	**California Energy Commission** Small Grant for Energy Innovation “Autonomous flexible wings for high-altitude wind energy generation”. Total contribution: $ 95,000.00; role: principal investigator (co-PI with Prof. Mustafa Khammash)
2010 -	**EU project** “ICIEMSET - Innovative Control, Identification and Estimation Methodologies for Sustainable Energy Technologies”. Total contribution: € 247,027.90; role: Marie Curie fellow

2009 **EU project** "KitVes - Airfoil-based solution for Vessel on-board energy production destined to traction and auxiliary services"

2007 - 2010 **Regione Piemonte, Italy,** project "KiteNav: Power kites for naval propulsion"

2008 - 2009 **Regione Piemonte, Italy,** project "KiteGen: high-altitude wind energy generation"

2006 - 2008 **Regione Piemonte, Italy,** project "Control of power kites for wind energy generation"

2006 - 2008 **Italian Ministry of University and Research,** project "Advanced control and identification techniques for innovative applications"

2005 - 2007 **Italian Ministry of University and Research,** project "Control of advanced transmission, suspension, steering and braking systems for vehicle dynamics"

2006 **Italian Ministry of University and Research,** project "Robustness and optimization techniques for high-performance systems"

Technical association memberships and editorial activities

Member of IEEE, IEEE Control Systems Society, IEEE-CSS Technical Committee on Power Generation

Reviewer for international journals and conferences: Automatica; Control Engineering Practice; IEEE Transactions on Automatic Control; IEEE Transactions on Control Systems Technology; IEEE Transactions on Industrial Electronics; International Journal of Control, Automation and Systems; International Journal of Robust and Nonlinear Control; Energy; American Control Conference; IEEE Conference on Decision and Control; IFAC World Congress

Guest editor for the special issue "To Tame the Wind: advanced control applications in wind energy" on the IEEE Transactions on Control Systems Technology. Other guest editors: Prof. Manfred Morari (ETH Zurich), Prof. Mario Rotea (UT Dallas), Dr. Greg Stewart (Honeywell Automation)

Seminars at universities and companies

University of Colorado at Boulder, CO, October 2011

ETH Zurich-Automatic Control Laboratory, Switzerland, June 2011

ETH Zurich-Automatic Control Laboratory, Switzerland, March 2011

EPFL Lausanne, Switzerland, February 2011

University of California at Santa Barbara, CA, October 2010

ETH Zurich-Automatic Control Laboratory, Switzerland, June 2010

Google Zurich, Switzerland, May 2010

TU Delft, The Netherlands, May 2010

University of Budapest, Hungary, August 2009

Katholieke Universiteit Leuven, Belgium,May 2009

Ghent University, Belgium,December 2007

Louvain La Neuve-CESAME, Belgium, December 2007

Katholieke Universiteit Leuven, Belgium, October 2007

University of Sannio, Italy, June 2007

University of Pavia, Italy, April 2007

Presentations at international conferences and workshops

IEEE Multi-Conference on Systems and Control, Denver, CO, 2011

49th Conference on Decision and Control, Atlanta, Georgia - USA, 2010

Airborne Wind Energy Conference 2010 (AWEC 2010), Stanford, California - USA, 2010

American Control Conference 2010 (ACC 2010), Baltimora, Maryland - USA, 2010

International Conference on Renewable Energy: generation and applications (ICREGA 2010), Al Ain, United Arab Emirates, 2010

10th European Control Conference, Budapest, Ungheria, 2009

International Workshop on Assessment and Future Directions of NMPC, Pavia, 2008

17th IFAC World Congress, Seoul, Corea, 2008

9th European Control Conference, Kos, Grecia, 2007

International workshop "Nonlinear Model Predictive Control - Software and Applications", Loughborough, UK, 2007

Patents

M. Milanese, L. Fagiano, I. Gerlero (inventors) "Actuation system to control the flight of am airfoil to convert wind energy into electrical or mechanical energy", patent application n. TO2010A000258, March 2010 (in Italian)

Publications

International journals

[J17] L. Fagiano, M. Canale, M. Milanese, "Set Membership approximation of discontinuous Nonlinear Model Predictive Control laws", Automatica, in press

[J16] L. Fagiano, M. Milanese, D. Piga, "Optimization of Airborne Wind Energy generators", International Journal of Robust and Nonlinear Control, in press

[J15] M. Canale, L. Fagiano, M. Signorile, "A model predictive control approach to vehicle yaw control using identified models", Journal of Automobile Engineering, in press

[J14] M. Canale, L. Fagiano, M. Signorile, F. Ruiz "Vehicle stability control using direct virtual sensors", Vehicle Systems Dynamics, in press

[J13] M. Canale, L. Fagiano, M. Milanese, C. Novara "Set Membership approximations of predictive control laws: the tradeoff between accuracy and complexity", IET Control Theory & Applications, vol. 12, n. 4, pp. 2907-2920, 2010

[J12] M. Canale, L. Fagiano, M. Milanese, "Efficient Model Predictive Control for Nonlinear Systems via Function Approximation Techniques", IEEE Transactions on Automatic Control, vol. 55, n. 8, pp. 1911-1916, 2010

[J11] M. Canale, L. Fagiano, V. Razza, "Approximate NMPC for vehicle stability: Design, implementation and SIL testing", Control Engineering Practice, vol. 18, n. 6, pp. 630-639, 2010

[J10] M. Canale, L. Fagiano, M. Milanese, "High altitude wind energy generation using controlled power kites", IEEE Transactions on Control Systems Technology, vol. 18, n. 2, pp. 279-293, 2010

[J9] L. Fagiano, M. Milanese, D. Piga, "High-altitude wind power generation", IEEE Transactions on Energy Conversion, vol. 25, n. 1, pp. 168-180, 2010

[J8] M. Canale, L. Fagiano, "Comparing Rear Wheel Steering and Rear Active Differential Approaches to vehicle yaw control", Vehicle Systems Dynamics, vol. 48, n. 5, pp. 529-546, 2010.

[J7] M. Canale, L. Fagiano, A. Ferrara, C. Vecchio, "Comparing Internal Model Control and Sliding Mode Approaches for Vehicle Yaw Control", IEEE Transactions on Intelligent Transportation Systems, vol. 10, n. 1, pp. 31-41, 2009.

[J6] M. Canale, L. Fagiano, M. Milanese, "KiteGen: a revolution in wind energy generation", Energy, vol. 34, n. 3, pp. 355-361, 2009.

[J5] M. Canale, L. Fagiano, M. Milanese, "Set Membership approximation theory for fast implementation of Model Predictive Control laws", Automatica, vol. 45, n. 1, pp. 45-54, 2009.

[J4] M. Canale, L. Fagiano, A. Ferrara, C. Vecchio, "Vehicle Yaw Control via Second Order Sliding Mode Technique", IEEE Transactions on Industrial Electronics, vol. 55, n. 11, pp. 3908-3916, 2008.

[J3] M. Canale, L. Fagiano, "Stability control of 4WS vehicles using robust IMC techniques", Vehicle System Dynamics, vol. 46, n. 11, pp. 991-1011, 2008.

[J2] M. Canale, L. Fagiano, M. Milanese, "Power kites for wind energy generation", IEEE Control Systems Magazine, vol. 27, no. 6, pp. 25-38, 2007.

[J1] M. Canale, L. Fagiano, M. Milanese, P. Borodani, "Robust vehicle yaw control using an active differential and IMC techniques", Control Engineering Practice, vol. 15, no. 8, pp. 923-941, 2007.

Book chapters

[B1] M. Canale, L. Fagiano, M. Milanese, "Fast Nonlinear Model Predictive Control via Set Membership approximation: an overview", In: L. Magni et al. (Eds.): Nonlinear Model Predictive Control - Towards New Challenging Applications , LNCIS 384, pp. 461-470. Springer, 2009.

Proceedings of international conferences

[C36] L. Fagiano, M. Khammash, C. Novara, "On the guaranteed accuracy of polynomial chaos expansions", accepted for the Proc. of the 50th IEEE Conference on Decision and Control and European Control Conference, Orlando, Florida, December 12-15, 2011

[C35] C. Novara, L. Fagiano, M. Milanese, "Sparse identification of nonlinear functions and nonparametric Set Membership optimality analysis", accepted for the Proc. of the 50th IEEE Conference on Decision and Control and European Control Conference, Orlando, Florida, December 12-15, 2011

[C34] G. Calafiore, L. Fagiano, "Robust Model Predictive Control via Random Convex Programming", accepted for the Proc. of the 50th IEEE Conference on Decision and Control and European Control Conference, Orlando, Florida, December 12-15, 2011

[C33] L. Fagiano, C. Novara, "Improvement of Moving Horizon Estimators via Direct Virtual Sensor techniques", accepted for the Proc. of the 50th IEEE Conference on Decision and Control and European Control Conference, Orlando, Florida, December 12-15, 2011

[C32] G. Calafiore, L. Fagiano, "Robust Model Predictive Control: the Random Convex Programming approach", Proc. of the IEEE Multi-Conference on Systems and Control, Denver (CO), USA, September 28-30, 2011

[C31] C. Novara, L. Fagiano, M. Milanese, "Direct Data-Driven Inverse Control of a Power Kite for High Altitude Wind Energy Conversion", Proc. of the IEEE Multi-Conference on Systems and Control}, Denver (CO),

USA, September 28-30, 2011

[C30] M. Canale, L. Fagiano, M.C. Signorile, "Robust Design of Predictive Controllers Using Set Membership Identified Models", Proc. of the 8th IFAC World Congress 2011, pp. 13414- 13419, Milano, Italy, August 28 - September 2, 2011

[C29] L. Fagiano, M. Milanese, V. Razza, "Optimization and control of a hybrid kite boat", Proc. of the 8th IFAC World Congress 2011, pp. 14748- 14753, Milano, Italy, August 28 - September 2, 2011

[C28] M. Canale, L. Fagiano, C. Novara, "A Direct Moving Horizon Approach to Vehicle Side-Slip Angle Estimation", Proc. of the 49th IEEE Conference on Decision and Control, Atlanta, GA, USA, December 15-17, 2010

[C27] M. Canale, L. Fagiano, C. Novara, "Vehicle side-slip angle estimation using a direct MH estimator", Proc. of the 2010 IEEE Multi-conference on Systems and Control, pp. 167-172, Yokohama, Japan, September 08-10, 2010

[C26] M. Canale, L. Fagiano, M. Milanese, V. Razza, "Control of tethered airfoils for sustainable marine transportation", Proc. of the 2010 IEEE Multi-conference on Systems and Control, pp. 1904-1909, Yokohama, Japan, September 08-10, 2010

[C25] M. Canale, L. Fagiano, M. Milanese, M.C. Signorile, "Nonlinear Model Predictive Control using Set Membership Approximated Models", Proc. of the UKACC International Conference on Control (CONTROL 2010), Coventry, UK, September 07-10, 2010

[C24] M. Canale, L. Fagiano, M.C. Signorile, "On the Robustness of Receding Horizon Control using Nonlinear Approximated Models", Proc. of the 8th IFAC Symposium on Nonlinear Control Systems (NOLCOS 2010), pp. 226-231, Bologna, Italy, September 01-03 , 2010

[C23] M. Canale, L. Fagiano, M.C. Signorile, "Vehicle Lateral Stability Using a Front Steer by Wire Device and Set Membership Predictive Control techniques", Proc. of the 2010 American Control Conference, pp. 1483-1488, Baltimore, Maryland, USA, June 30 - July 2, 2010

[C22] L. Fagiano, M. Milanese, V. Razza, I. Gerlero, "Control of Power Kites for Naval Propulsion", Proc. of the 2010 American Control Conference, pp. 4325-4330, Baltimore, Maryland, USA, June 30 - July 2, 2010

[C21] M. Milanese, L. Fagiano, D. Piga, "Control As a Key Technology for a Radical Innovation in Wind Energy Generation", Proc. of the 2010 American Control Conference, pp. 2361-2377, Baltimore, Maryland, USA, June 30 - July 2, 2010 (Semi-Plenary paper)

[C20] L. Fagiano, M. Milanese, D. Piga, "High-altitude wind energy generation using controlled tethered airfoils", Proc. of International conference on renewable energy: generation and applications, ICREGA 2010, Al Ain, United Arab Emirates, 2010

[C19] L. Fagiano, M. Milanese, V. Razza, I. Gerlero "Offshore High-Altitude Wind Energy Using Controlled Airfoils", Proc. of European Wind Energy Conference (EWEC), Warsaw, Poland, April 20-23, 2010.

[C18] L. Fagiano, M. Canale, M. Milanese, "Set Membership approximation of discontinuous NMPC laws", Proc. of the 48th IEEE Conference on Decision and Control, pp. 8636-8641, Shanghai, China, December 15-17, 2009.

[C17] M. Canale, L. Fagiano, V. Razza, "Vehicle lateral stability control via approximated NMPC: real-time implementation and software-in-the-loop test", Proc. of the 48th IEEE Conference on Decision and Control, pp. 4596-4601, Shanghai, China, December 15-17, 2009.

[C16] M. Canale, L. Fagiano, M. Milanese, C. Novara, "Set Membership approximations of predictive control laws: the tradeoff between accuracy and complexity", Proc. of the 10th European Control Conference, pp. 2426-2431, Budapest, Hungary, August 23-26, 2009.

[C15] L. Fagiano, M. Milanese and D. Piga, "High-altitude wind power generation for renewable energy cheaper than oil". Sustainable development: a challenge for European research, Brussels, Belgium, May 26-28,2009

[C14] M. Canale, L. Fagiano, "Vehicle yaw control using a fast NMPC approach", Proc. of the 47th IEEE Conference on Decision and Control, pp. 5360-5365, Cancun, Mexico, 2008.

[C13] M. Canale, L. Fagiano, F. Ruiz, M. C. Signorile, "A study on the use of virtual sensors in vehicle control", Proc. of the 47th IEEE Conference on Decision and Control, pp. 4402-4407, Cancun, Mexico, 2008.

[C12] M. Canale, L. Fagiano, M.Milanese, "On the use of approximated predictive control laws for nonlinear systems", Proc. of the 47th IEEE Conference on Decision and Control, pp. 4712-4717, Cancun, Mexico,

2008.

[C11] M. Canale, L. Fagiano, M.Milanese, “Fast Nonlinear Model Predictive Control via Set Membership approximation: an overview”, Int. Workshop on Assessment and Future Directions of NMPC, Pavia, Italy, 2008.

[C10] M. Canale, L. Fagiano, F. Ruiz, M. C. Signorile, “On the design of linear virtual sensors for low cost vehicle stability control”, Proc. 2nd IEEE Multi-conference on Systems and Control, pp. 1-6, San Antonio (TX), USA, 2008.

[C9] M. Canale, L. Fagiano, M.Milanese, “Fast nonlinear model predictive control using Set Membership approximation”, Proc. of the 17th IFAC World Congress, pp. 12165-12170, Seoul, Korea, 2008.

[C8] M. Canale, L. Fagiano, A. Ferrara, C. Vecchio, “A Comparison Between IMC and Sliding Mode Approaches to Vehicle Yaw Control”, Proc. of the 27th American Control Conference, pp. 248-253, Seattle (WA), USA, 2008.

[C7] M. Canale, L. Fagiano, M.Milanese, “Fast implementation of predictive controllers using SM approximation methodologies”, Proc. of the 46th IEEE Conference on Decision and Control, pp. 1361-1367, New Orleans (LA), USA, 2007.

[C6] M. Canale, L. Fagiano, “Comparing RWS and RAD approaches in robust vehicle yaw control”, Proc. of the 9th European Control Conference, pp. 1225-1232, Kos, Greece, 2007.

[C5] M. Canale, L. Fagiano, “A robust IMC approach for stability control of 4WS vehicles”, Proc. of the 26th American Control Conference, pp. 2283-2288, New York (NY), USA, 2007.

[C4] M. Canale, L. Fagiano, M. Milanese, M. Ippolito, “KiteGen project: control as key technology for a quantum leap in wind energy generators”, Proc. of the 26th American Control Conference, pp. 3522-3528, New York (NY), USA, 2007.

[C3] M. Canale, L. Fagiano, M. Ippolito, M. Milanese, “Control of tethered airfoils for a new class of wind energy generators”, Proc. of the 45th IEEE Conference on Decision and Control, pp. 4020-4026, San Diego (CA), USA, 2006.

[C2] M. Canale, L. Fagiano, M. Milanese, “KiteGen: a revolution in wind energy generation”, Proc. of the 5th Biennal international workshop “Advances in energy studies: perspectives on energy future”, Porto Venere, Italy, 2006.

[C1] M. Canale, L. Fagiano, M. Milanese, P. Borodani “Robust vehicle yaw control using active differential and internal model control techniques”, Proc. of the 25th American Control Conference, pp. 5354-5359, Minneapolis (MN), USA, 2006.