

CURRICULUM VITAE OF CHIARA MOCENNI



Affiliations and Contacts

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Personal data

Residence: Vicolo del Sasso, 5 - 53100 Siena (Italy)
Birthplace and Birthdate: Siena, 28/03/1966
Marital status: Married
Children: 2

Education

1985: High School Diploma at Liceo Classico "Enea Silvio Piccolomini", Siena.
1991: Summer School of Matematica Interuniversitaria (Perugia). Classes of Differential Geometry (Prof. W. Boothby) and Functional Analysis (Prof. E. Lanconelli).
1992: Master Degree in Mathematics, University of Siena.
1998: PhD in Chemistry, Curriculum Environmental Modeling, Università di Siena. The thesis, dealing with mathematical modeling of complex biogeochemical systems, is published in [?].

Academic Positions

1994: Fellowship at Dipartimento di Matematica, Università di Siena (Monte dei Paschi di Siena and Saped) in the field of financial nonlinear time series analysis.
1995-1998: PhD student at the Dipartimento di Scienze Chimiche e dei Biosistemi, Università di Siena.
1999-2002: Research Associate at Dipartimento di Ingegneria dell'Informazione, Università di Siena, SSD: ING-INF/04 Automatica.

2002-present: Assistant Professor (Ricercatore confermato a tempo indeterminato), Dipartimento di Ingegneria dell'Informazione e Scienze Matematiche, Università di Siena, SSD: ING-INF/04 Automatica.

2014-2016: Special Visiting Researcher at the Instituto Nacional de Matemática Pura e Aplicada, Rio de Janeiro (Brasil).

2014-2020: Qualified for Associate Professor (Abilitazione Scientifica Nazionale, SSD: ING-INF/04 Automatica) by the Italian Ministry of University and Research. Validity: 31/01/2014 - 31/01/2020.

Academic Activities

2009-present: Member of the Committee for Education of the Master Course on Management Engineering at DIISM.

2005-present: Member of the Department Council of DIISM.

2004-2012: Member of Board of Directors of the Centro per lo Studio dei Sistemi Complessi, Università di Siena.

2003-2008: Member of the Committee of DIISM.

2001-2012: Scientific Coordinator of the Centro per lo Studio dei Sistemi Complessi, Università di Siena.

Research Interests and Activities

Since the beginning of her activity, Chiara Mocenni developed multidisciplinary research on mathematical modeling and identification of complex systems that resulted in scientific publications, research projects, networking, dissemination activities and collaborations with researchers of different fields, such as mathematics, engineering, physics, chemistry and biology. Presently, CM coordinates a research group including PhD students, research associates and students of the Master Degree on Information and Management Engineering. The group is part of the Systems and Control Group at DIISM (<http://control.dii.unisi.it/>), coordinated by Prof. A. Vicino, and shares several interests with the Complex Systems Community. Main research activities are:

- Mathematical modeling and identification of distributed spatio-temporal systems. Applications include reaction-diffusion equations, morphogenetic patterns, aquatic systems and bacterial growth.
- Bifurcation analysis of nonlinear dynamical systems. Applications include ecological status of aquatic systems and biological evolution.
- Nonlinear time series analysis. Applications include physiological time series, such as EEG and fMRI, and ecological time series, such as biogeochemical data in Mediterranean Lagoons.
- Evolutionary games on graphs. Applications include decision and social behavior, opinion dynamics, brain dynamics and connectivity.

Scientific Collaborations

W. Allegretto, Department of Mathematical Sciences, University of Alberta (CA).

A. Boianelli, Helmholtz Centre for Infection Research, Germany.

M. Casini, R. Chiarucci, A. Garulli, M. Loffredo, D. Madeo, S. Paoletti, M. Pranzo, A. Vicino, DIISM, Università di Siena.

L. Comolli, Lawrence Berkeley National Laboratory, Berkeley (CA, USA).

A. Facchini, ENEL Foundation, Roma.

E. Franchi, Laboratorio di Ecologia Lagunare di Orbetello, Grosseto.
 M. Khammash, Swiss Federal Institute of Technology–Zurich (ETHZ).
 S. Loisel, C. Rossi, Dipartimento di Biotecnologie, Chimica e Farmacia, Università di Siena.
 G. Montefrancesco, Centro Studi sulle Dipendenze Patologiche, Università di Siena.
 E. Santarcangelo, Dipartimento di Ricerca Traslazionale e delle Nuove Tecnologie in Medicina e Chirurgia, Università di Pisa.
 E. Sparacino, General Electric, Firenze.
 A. Tesi, Dipartimento di Ingegneria dell'Informazione, Università di Firenze.
 S. Tiezzi, Dipartimento di Economia Politica e Statistica, Università di Siena.
 P. Viaroli, G. Giordani, Dipartimento di Bioscienze, Università di Parma.
 J. P. Zubelli, Instituto Nacional de Matemática Pura e Aplicada, Rio de Janeiro (Brasil).

Visiting Positions

2005-2007-2008-2009-2013-2014-2015: Visiting at the Instituto Nacional de Matemática Pura e Aplicada, Rio de Janeiro (Brasil), Prof. J. Passamani Zubelli.
 2012-2013: Visiting Researcher at the Department of Biosystems Science and Engineering (D-BSSE) Swiss Federal Institute of Technology–Zurich (ETHZ), Prof. Mustafa Khammash.
 2010-2011: Visiting Researcher at the Department of Mechanical Engineering, Center for Control, Dynamical-systems, and Computation, University of California, Santa Barbara (USA), Prof. Mustafa Khammash.
 2004: Visiting Researcher at the Department of Mathematical Sciences, University of Alberta (CA), Prof. W. Allegretto.
 1998: Visiting Student at the Departement de Chimie Physique, Libre Université de Bruxelles, Prof. A. Goldbeter.

Teaching activity

2013-present: *Game Theory and Evolutionary Games*, Master Degree on Management Engineering and Information Engineering, DIISM (6 CFU).
 2013-present: seminars for the Course: *Sostenibilità*, open to all students of Università di Siena.
 2009-present: Course on *Complex Dynamic Systems*, Master Degree on Management Engineering and Information Engineering, DIISM (6 CFU).
 2009-2014: Course on *Decision Analysis*, Master Degree on Management Engineering and Information Engineering, DIISM (6 CFU).
 2008-2013: Seminars for the Course on *Financial Time Series Analysis*, Master Degree on Management Engineering, teacher Prof. A. Vicino, DIISM (6 CFU).
 2006-2009: Course on *Modelling and Simulation*, Master Degree on Management Engineering, School of Engineering (5 CFU).
 2003-2010: Course on *Modelling and Management of Environmental Systems*, Master Degree on Management Engineering, Information Engineering and Telecommunications Engineering, School of Engineering (6 CFU).
 2003-2009: Course on *Modelling and Simulation*, Master Degree on Information Engineering, School of Engineering (5 CFU).
 2003-2009: Course on *Decision Support Systems*, Master Degree on Management Engineering and Information Engineering, School of Engineering (3 CFU).
 2002-2006: Master Program "*e2c: Economia digitale & E-business*", Università di Siena, Courses on *Mathematics (Linear Algebra)* and *Time Series Analysis*.
 2001-2002: Seminars on *Linear Algebra*, teacher Prof. A. Pasini, School of Engineering.

2000-2002: *Calculus I and II*, teacher Prof. C. Marchiò, School of Engineering.
2001: “*III School of Environmental Modelling and Eco-dynamics*”, Parco Nazionale del Circeo, Sabaudia (Italy).
2000: Seminars on *Environmental Engineering*, teacher Prof. S. Rinaldi, Politecnico di Milano.
1999-2002: Seminars on *Model Identification*, teacher Prof. A. Garulli, School of Engineering.
1997: School on “*Ecological Modelling*”, Province of Siena (Agenzia Ambiente Fauna).
1997: “*II School of Environmental Modelling and Eco-dynamics*”, Parco Nazionale del Circeo, Sabaudia (Italy).

Tutoring

2007-2012: Tutor of 2 Research Associates at DIISM.
2006-present: Advisor of 3 PhD students and co-Advisor of 2 PhD students at DIISM.
2004-present: Supervisor of more than 30 Degree and Master Theses on the areas of Modeling and Identification, Complex Systems and Decision Systems at DIISM.
2004-2005: Advisor or co-Advisor of 3 Degree Thesis at the Faculty of Mathematics and Science and 2 Degree Thesis at the Faculty of Economics.

Teaching material

Notes on Game Theory and Evolutionary Game Theory, *Master Degree on Management Engineering and Information Engineering* (with D. Madeo).
Notes on Nonlinear Dynamical Systems for the Course on Complex Dynamical Systems, *Master Degree on Management Engineering and Information Engineering*.
Slides on Financial Time Series Toolbox and Garch Toolbox for Matlab for the Course on Financial Time Series Analysis, teacher Prof. A. Vicino.
Notes on Mathematics (Linear Algebra) for the Master “*e2c: Economia digitale & E-business*” (with P. Nistri).
Notes on Decision Support Tools for the Master MECOSIND on Industrial Ecology (with A. Garulli and A. Giannitrapani).

Research Grants and Projects

Principal Investigator

2014-2016: “Evolutionary Games on Networks for Modeling Complex Biological and Socio-Economic Phenomena”, (Science Without Borders, Program for International Cooperation Italy-Brasil). In collaboration with Prof. J. Zubelli (IMPA). Grant: 100000 euro.
2008-2011: “How to achieve sustainable water ecosystems management connecting research, people and policy makers in Europe (AWARE)”, (EU Project, Grant: 42000 euro).
2004-2006: “MECOSIND: *Master on Industrial Ecology*”. In collaboration with the Universities of Catalogna, Girona, Barcellona, Firenze, Pescara (“G. D’Annunzio”), Pisa, Università Tecnica di Igualada and Peloponneso (EU Project, Grant: 15000).
2003-2007: “Development of an Information Technology Tool for the Management of European Southern Lagoons (DITTY)” (EU Project, 130000 euro, co-PI with Prof. A. Vicino).
2007-2009: “Brain Mechanisms, Architectures and Modeling of Cognitive Processes: Theory, Analysis and Experimental Research”, supported by the University of Siena in favor of the Centre for the Study of Complex Systems in the framework of the activities of the Graduate College “Santa Chiara” (Coordination Unit).

2001-2004: “*Modellizzazione di processi fisici e biologici in ecosistemi acquatici a rischio: la laguna di Orbetello*” (Tuscany Region, co-PI with Prof. A.Vicino).
2000-2006: “*Research activities at the CSC: Center for the Study of Complex Systems, University of Siena*” (MPS Foundation, Siena, co-PI with Prof. A.Vicino).
2000-2004: “*Monitoraggio, modellizzazione e analisi della riserva naturale ”Lago di Montepulciano”* (Province of Siena, co-PI with Prof. A.Vicino).

Participant

2007: “*Realizzazione di un DSS sulle zone costiere e marine dell’Adriatico Settentrionale*”, in collaboration with CSA (Rimini, Italy) in the frame work of the EU Project EMMA.
2006-2007: “*Methods and optimization techniques for identification and robust control of uncertain systems*” (National Government).
2005-2006: “*Fondamenti metodologici e strumenti per la valutazione economica delle risorse naturali*”, in collaborazione con il Dipartimento di Economia Politica dell’ Università di Siena (APAT, Agenzia per la Protezione dell’Ambiente e dei Servizi Tecnici).
2005-2006: “*Optimization techniques and algorithms for robust control of systems with structured uncertainty*” (University of Siena).
2003-2004: “*Optimization techniques and algorithms for robust control of systems with structured uncertainty*” (National Government).
2002-2003: “*Methods and optimization techniques for identification and robust control of uncertain systems*” (National Government).
2002-2004: “*Techniques and algorithms for identification and robust control of dynamic systems*” (National Government).
2001-2002: “*Environmental monitoring in lakes and lagoons: modelling, prediction and data acquisition with autonomous mobile sensors*” (Università di Siena).
2000-2001: “*Robustness techniques for control of uncertain systems*” (National Government).
1999-2000: “*Algoritmi per l’identificazione ed il Filtraggio Robusto nella Navigazione Autonoma*” (University of Siena).
1997-1998: “*Studio di sostenibilità ambientale sull’agricoltura e sul turismo nella Provincia di Siena*” (Chamber of Commerce of Siena).
1997-1998: “*SIRA, Sistema Informativo Regionale Ambientale*” (Tuscany Region).
1995-1996: “*Ricerca di dinamiche non lineari nel suono polmonare normale*” in collaborazione con l’Istituto di Fisiopatologia Respiratoria dell’Ospedale di Siena (Tuscany Region).

Organization of Scientific Activities

2014-present: Member of the Complex Systems Society (<http://cssociety.org/home>).
2012-present: Founder of the Complex System Community of the Università di Siena (<http://csc.unisi.it>).
Chiara Mocenni has been the promoter and founder of the Complex Systems Community (CSC) of the University of Siena. The CSC is an interdisciplinary scientific community, involving researchers working in different fields, such as mathematics, engineering, physics, biology, chemistry, social sciences and economics. The mission of CSC is the development of novel methodologies for describing, understanding and modeling complex systems, as well as the organization and promotion of scientific activities, such as schools, workshops and seminars, mainly directed to young researchers.
2011: Member of the organizing Committee of “*AEHMS 2011, The Aquatic Ecosystem Puzzle: Threats, Opportunities and Adaptation*”, Siena, Italy, 13-15 June, 2011.
2010: Co-chair of the Workshop “*Mind Force 2010*”, Center for the Study of Complex Systems, Siena, October 7-8, 2010.

2009: Member of the International Program Committee (IPC) of “EME 2009, IASTED International Conference on Environmental Management and Engineering”, Banff, Alberta (Canada).

2007: Member of the Scientific Committee of the “Second International Workshop on Recurrent Plots”, Siena.

2007-2010: Member of the Scientific Committee of the Interdisciplinary Project “Brain Mechanisms, Architectures and Modeling of Cognitive Processes: Theory, Analysis and Experimental Research”, Centre for the Study of Complex Systems and Graduate College “Santa Chiara”, University of Siena.

2006: Member of the Scientific Committee of “Congress on Coastal Zone”, Vannes, Golfe du Morbihan (FR).

2006: Member of the Technical Program Committee of “NOLTA, International Symposium on Non-linear Theory and its Applications”, Bologna (IT).

2005: Member of the Scientific Committee of the “*International Advanced School on Nonlinear Analysis of Complex Dynamical Systems*”, Centre for the Study of Complex Systems, University of Siena.

2003: Co-organizer of the “2nd International School Topics In Nonlinear Dynamics”, Siena.

2002-2005: Scientific Secretary of the Master Program “*e2c: Economia digitale & E-business*”.

2001-2006: Scientific Secretariat and Member of the Scientific Committee of Master “*e2c: Economia digitale & E-business*”.

2001-2012: Scientific Coordinator of the Centre for the Study of Complex Systems (CSC), University of Siena.

2000-present: Co-organizer of more than 40 Seminars, Lectures and Courses on Complex Systems, Environmental Modeling and Identification at the Centre for the Study of Complex Systems.

2000-present: Member of the Italian Society of Chaos and Complexity.

1998: Member of the Organizing Committee of the “Workshop Tempos in Science and Nature: Structures, Relations and Complexity”, Siena.

Participation to Advanced Schools

2002: 1st Lerici International Winter School on Marine Technologies “*Autonomous and Remotely Operated Underwater Vehicles*”. Lerici (La Spezia, Italy).

2001: Scuola su “Numerical Bifurcation Analysis of Dynamical Systems”, Prof. Y. Kuznetsov, Dipartimento di Elettronica e Informazione, Politecnico di Milano e Società Italiana Caos e Complessità.

2001: Seminari su “Visual Motion of Curves and Surfaces”, Prof. R. Cipolla (Department of Engineering, Cambridge University).

2000: Corso su “System Identification”, Prof. Lennart Ljung (University of Linkoping).

2000: Intensive Programme SOCRATES/ERASMUS “Linear and nonlinear analysis of complex data”, Facoltà di Ingegneria, Università di Firenze e Max-Planck-Institut für Physik komplexer Systeme, Dresden (Coordinatori: Proff. S. Ruffo and H. Kantz).

1997: “School on Nonlinear Phenomena in prey-predator and competition models”, Dipartimento di Elettronica e Informazione del Politecnico di Milano, Centro Studi per la Teoria dei Sistemi e dal Consiglio Nazionale delle Ricerche, Fondazione ENI Enrico Mattei, Milano.

1996: “*International Conference on Chaos, Fractals and Models '96*”, University of Pavia.

1996: “II School of “Environmental Physico-Chemistry”, Ingurtosu (CA).

1995: “I School of “Environmental Physico-Chemistry”, Ingurtosu (CA).

Professional activities

2014: Professional Courses on Environmental Modeling for FORMIMPRESA (Grosseto).

2008-present: CORDIS: Technology Marketplace: Offers: Ensuring environment quality status for European lagoons Results: Development of a Decision Support System (DSS) for Southern European

lagoons.

2002-2012: Scientific Promoter of the Spin off Company *Green Time* working on the field of Eco-Audit (EMAS) and Environmental Accounting.

Journal Peer Reviewer

Chiara Mocenni serves as reviewer for the following International Journals: IEEE Transactions on Automatic Control, IEEE Transactions on Circuits and Systems, Ecological Modelling, Mathematical Modelling of Natural Phenomena, Computational Biology and Chemistry, Entropy, Physica A, Mathematical Reviews. CM is member of the Editorial Board of the International Journal Chaos and Complexity Letters.

LIST OF PUBLICATIONS

International Journal Papers

- [1] G. Iacobelli, D. Madeo and C. Mocenni, “Exploiting Network Topology for Model Reduction in Evolutionary Games on Networked-populations”, in preparation, 2015.
- [2] D. Madeo and C. Mocenni, “Game interactions and dynamics on networked populations”, *IEEE Transactions on Automatic Control*, Vol. 60, N. 7, pp. 1801-1810, DOI: 10.1109/TAC.2014.2384755, 2015.
- [3] D. Madeo, E. Castellani, C. Mocenni and E.L. Santarcangelo, “Pain perception and EEG dynamics: Does hypnotizability account for the efficacy of the suggestions of analgesia?”, *Physiology and Behavior*, Vol. 145, pp. 57-63, DOI: 10.1016/j.physbeh.2015.03.040, 2015.
- [4] M. Casini, C. Mocenni, S. Paoletti, M. Pranzo, “Decision support system development for integrated management of European coastal lagoons”, *Environmental Modelling & Software*, Vol. 64, pp. 47-57, DOI: 10.1016/j.envsoft.2014.11.008, 2015.
- [5] D. Madeo, L.R. Comolli and C. Mocenni, “Emergence of microbial networks as response to hostile environments”, *Frontiers in Microbiology*, Vol. 5, N. 407, DOI: 10.3389/fmicb.2014.00407, 2014.
- [6] R. Chiarucci, D. Madeo, M.I. Loffredo, E. Castellani, E.L. Santarcangelo and C. Mocenni, “Cross-evidence for hypnotic susceptibility through nonlinear measures on EEGs of non-hypnotized subjects”, *Scientific Report*, 4:5610, DOI: 10.1038/srep05610, 2014.
- [7] A. Newton, J. Icely, S. Cristina, A. Brito, A. C. Cardoso, F. Colijn, S. Dalla Riva, F. Gertz, J. W. Hansen, M. Holmer, K. Ivanova, E. Leppakoski, D. Melaku Canu, C. Mocenni, S. Mudge, N. Murray, M. Pejrup, A. Razinkovas, S. Reizopoulou, A. Pérez-Ruzafa, G. Schernewski, H. Schubert, L. Carr, C. Solidoro, P. Viaroli and J.M. Zaldívar, “An overview of ecological status, vulnerability and future perspectives of European large shallow, semi-enclosed coastal systems, lagoons and transitional waters”, *Estuarine, Coastal and Shelf Science*, Vol. 140, pp. 95-122, DOI: 10.1016/j.ecss.2013.05.023, 2014.
- [8] C. Mocenni, E. Sparacino, J. P. Zubelli, “Effective rough boundary parametrization for reaction-diffusion systems”, *Applicable Analysis and Discrete Mathematics*, Vol. 8, pp. 33-59, DOI: doi:10.2298/AADM140126002M, 2014.
- [9] D. Madeo, E. Castellani, E.L. Santarcangelo, C. Mocenni, “Hypnotic assessment based on the Recurrence Quantification Analysis of EEG recorded in the ordinary state of consciousness”, *Brain and Cognition*, Vol. 83, N. 2, pp. 227-233, DOI: 10.1016/j.bandc.2013.08.002, 2013.

- [10] A. Facchini, C. Mocenni, “Recurrence methods for the identification of morphogenetic patterns”, *Plos ONE*, Vol. 8, N.9, pp. e73686, DOI: 10.1371/journal.pone.0073686, 2013.
- [11] A. Boianelli, A. Bidossi, L. Gualdi, L. Mulas, C. Mocenni, G. Pozzi, A. Vicino, M. R. Oggioni, “A Non-Linear Deterministic Model for Regulation of Diauxic Lag on Cellobiose by the Pneumococcal Multidomain Transcriptional Regulator CelR”, *Plos ONE*, Vol. 7, N. 10, pp. e47393, DOI: 10.1371/journal.pone.0047393, 2012.
- [12] E. Castellani, D. Madeo, E.L. Santarcangelo, C. Mocenni,, “EEG recurrence quantification analysis in subjects with different hypnotizability”, *International Journal of Psychophysiology*, Vol. 85, pp. 370, 2012.
- [13] A. Facchini, C. Mocenni, “Recurrence Indicators for the Estimation of Characteristic Size and Frequency Of Spatial Patterns”, *Chaos and Complexity Letters*, Vol. 6, N. 1-2, 2012.
- [14] C. Mocenni, D. Madeo, and E. Sparacino, “Linear least squares parameter estimation of nonlinear reaction diffusion equations”, *Mathematics and Computers in Simulation*, Vol. 81, pp. 2244-2257, 2011.
- [15] C. Mocenni, A. Facchini, and A. Vicino, “Comparison of recurrence quantification methods for the analysis of temporal and spatial chaos”, *Mathematical and Computer Modelling*, Vol. 53, pp. 1535-1545, 2011.
- [16] A. Facchini and C. Mocenni, “Filling gaps in ecological time series by means of twin surrogates”, *International Journal of Bifurcation and Chaos in Applied Sciences and Engineering*, Vol. 21, N. 4, pp. 1085-1097, 2011.
- [17] C. Mocenni, A. Facchini, and A. Vicino, “Identifying the dynamics of complex spatio-temporal systems by spatial recurrence properties”, *Proceedings of the National Academy of Sciences of the United States of America*, Vol. 107, pp. 8097-8102, 2010.
- [18] C. Mocenni, G. Montefrancesco, S. Tiezzi, “Cognitive factors and changes in individual decision making: from drug addiction to natural recovery”, *Chaos and Complexity Letters*, Vol. 4, N. 3, pp. 61-74, 2010.
- [19] A. Facchini , F. Rossi , and C. Mocenni, “Spatial recurrence strategies reveal different routes to turing pattern formation in chemical systems”, *Physics Letters A*, Vol. 373, pp. 4266-4272, 2009.
- [20] C. Mocenni and E. Sparacino, “Identification and simulation of a spatial ecological model in a lake with fractal boundary”, *Mathematics and Computers in Simulation*, Vol. 79, N. 12, pp. 3534-3546, 2009.
- [21] A. Facchini, C. Mocenni, and A. Vicino, “Generalized recurrence plots for the analysis of images from spatially distributed systems”, *Physica D-Nonlinear Phenomena*, Vol. 238, pp. 162-169, 2009.
- [22] C. Mocenni, E. Sparacino, A. Vicino and J.P. Zubelli, “Mathematical modelling and parameter estimation of the serra da mesa basin”, *Mathematical and Computer Modelling*, Vol. 47, pp. 765-780, 2008.
- [23] A. Facchini, C. Mocenni, N. Marwan, A. Vicino, and E. Tiezzi, “Nonlinear time series analysis of dissolved oxygen in the Orbetello Lagoon (Italy)”, *Ecological Modelling*, Vol. 203, N. 3-4, pp. 339-348, 2007 (IF. 2.07).

- [24] L. Loubersac, T. Do Chi, A. Fiandrino, J.M. Derolez V, A. Lemsanni, H. Rey-Valette, S. Mathe, S. Pages, C. Mocenni, M. Casini, S. Paoletti, M. Pranzo, F. Valette, O. Serais, T. Laugier, N. Mazouni, G. Vincent, P. Got, M. Toussellier, and C. Aliaume, “Microbial contamination and management scenarios in a mediterranean coastal lagoon (etang de thau, france): application of a decision support system within the integrated coastal zone management context”, *Transitional Water Monographs*, Vol. 1, pp. 107-127, 2007.
- [25] W. Allegretto, C. Mocenni, and A. Vicino, “Periodic solutions in modelling lagoon ecological interactions”, *Journal of Mathematical Biology*, Vol. 51, N. 4, pp. 367-388, 2005.
- [26] A. Garulli, C. Mocenni, A. Tesi, and A. Vicino, “Integrating identification and qualitative analysis for the dynamic model of a lagoon”, *International Journal of Bifurcation and Chaos in Applied Sciences and Engineering*, Vol. 13, N. 2, p. 357-374, 2003.
- [27] V. Hull, C. Mocenni, M. Falcucci and N. Marchettini, “A trophodynamic model for the lagoon of Fogliano (Italy) with ecological dependent modifying parameters”, *Ecological Modelling*, Vol. 134, pp. 153-167, 2000.
- [28] N. Marchettini, C. Mocenni, and A. Vicino, “Integrating slow and fast dynamics in a shallow water coastal lagoon”, *Annals of Chemistry*, Vol. 89, pp. 505-514, 1999.
- [29] N. Marchettini, C. Mocenni, V. Niccolucci, and E. Tiezzi, “Correlation between greenhouse effect and exceptionally high tides in venice”, *Annals of the New York Academy of Sciences*, Vol. 879, pp. 422-426, 1999.
- [30] C. Rossi, M. Porcelli, C. Mocenni, N. Marchettini, S. Loisel, and S. Bastianoni, “A modelling approach for the analysis of xilose-ethanol bioconversion”, *Ecological Modelling*, Vol. 113, pp. 157-162, 1998.
- [31] S. Bastianoni, A. Gastaldelli, C. Bonechi, C. Mocenni, and C. Rossi, “Kinetic analysis and comparison of models of xylose metabolism by klebsiella planticola”, *Biochemical and Biophysical Research Communications*, Vol. 227, N. 1, pp. 21-26, 1996.

Book Chapters

- [32] C. Rossi, P. Madl, A. Foletti and C. Mocenni, “Equilibrium and far-from equilibrium states”, in *Fields of the Cell*, D. Fels, M. Cifra and F. Scholkmann eds., Research Signpost Press, (Kerala, India), pp. 71-94, 2015.
- [33] C. Mocenni, A. Facchini, “Recurrence Indicators for the Estimation of Characteristic Size and Frequency of Spatial Patterns”. In: *Complexity Science, Living Systems, and Reflexing Interfaces: New Models and Perspectives*. F. Orsucci, N. Sala eds. (IGI Global), pp. 209-217, 2012.
- [34] P. Viaroli, G. Giordani, C. Mocenni, E. Sparacino, S. Lovo, S. Bencivelli, “The Sacca di Goro: a cooperative decision making experiment for a sustainable lagoon exploitation”. In: *Sustainable Water Ecosystems Management in Europe*, Carlo Sessa ed. IWA Publishing, pp. 83-96, 2012.
- [35] M. Fabbri, E. Giovannoni, C. Mocenni and E. Sparacino, “Reti di indicatori e dinamiche complesse nella BSC: i metosi AHP e ANP”, in *Il Controllo di Gestione*, C. Busco, A. Giovannoni and A. Riccaboni eds., pp. 887-911, IPSOA, 2011.
- [36] M. Casini, C. Mocenni, S. Paoletti, G. Giordani, P. Viaroli, and J.M. Zaldivar Comenges, “A decision support system for the management of the Sacca di Goro (Italy)”, in *Decision support*

systems for risk based management of contaminated sites, A. Marcomini, G. W. Suter II and A. Critto eds., Springer, 2009.

- [37] F. Barnabè, M. Fei, C. Mocenni and E. Sparacino, “Strumenti di simulazione per il controllo di gestione: dall’analisi dei sistemi alla system dynamics”, in *Il Controllo di Gestione*, C. Busco, A. Giovannoni and A. Riccaboni eds., pp. 857-887, IPSOA, 2009.
- [38] A. Facchini, C. Mocenni, Tiezzi E, and A. Vicino, “Nonlinear time series analysis of ecological data collected in the Lagoon of Orbetello”, in *Ecosystem and Sustainable Development*, pp. 597-603. WIT press, Southempton (UK), 2005.
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