

CURRICULUM VITAE

Last up-date: February 6, 2017

Maurizio FALCONE

Birth: Roma, November 21, 1954
Degree: Laurea cum Laude in Mathematics
University of Roma "La Sapienza", March 3, 1978
Languages: Good knowledge (oral and written) of English, French
and basic knowledge of Russian and Spanish
Programming Languages: C++, FORTRAN, PASCAL, MATLAB
e-mail: falcone@mat.uniroma1.it
WEB: [http://www.mat.uniroma1.it/people/falcone/
home.html](http://www.mat.uniroma1.it/people/falcone/home.html)
tel/fax: (+39)0649913279/(+39)0644701007
Member of: SIAM, SIMAI

Grants and Academic Career

since 11/01 Full Professor of Numerical Analysis at Dipartimento di
Matematica, University of Roma "La Sapienza"
2/88-11/01 Associate Professor of Mathematical Analysis at Dipartimento di
Matematica, University of Roma "La Sapienza"
10/87-2/88 Professeur associé at University of Paris IX-Dauphine
4/85-6/85 Professeur associé at University of Paris XI-Orsay
2/83-7/83 Chargé de cours at University of Paris IX-Dauphine
7/81-2/88 Researcher at Dipartimento di Matematica,
University of Roma "La Sapienza"
2/81-3/81 S.I.S.S.A. Grant, Trieste
10/79-7/81 C.N.R. Grant at Istituto Matematico "G. Castelnuovo"
2/77-2/78 Undergraduate C.N.R. Grant

MANAGING ACTIVITY

International

- 1/11-12/14 Member of the Scientific Board of the ITN Marie Curie "Sensitivity Analysis for Deterministic Controller Design" (SADCO)
(<http://itn-sadco.inria.fr/>)
- 10/08-11/12 Member of the Steering Committee of the ESF Network OPTPDE
"Optimal Control with PDE constraints"
(<http://www.esf.org/index.php?id=5377>)
- 2006-08 Coordinator Galileo Project "Algorithms for dislocation dynamics and applications" between Roma "La Sapienza" and CERMICS
- 2003-05 Coordinator Galileo Project PLATONOV between Roma "La Sapienza" and IRIT in Tolosa (2003-5);
- 2014-2015 Secretary (elected) of the SIAM Activity Group in "Control and System Theory"
- 2016- 2017 Secretary (elected) of the SIAM Activity Group in "Control and System Theory"

Local

- since 11/08 Member of the Scientific Committee of the National Group
"Scientific Computing" (GNCS-INDAM)
(<http://gruppi.altamatematica.it/gnscs/>)
- 10/02-10/12 Head of the Master in "Scientific Computing", University of Roma
"La Sapienza" (<http://www.mat.uniroma1.it/mastercs>)
- 1/02-9/03 Head of the Undergraduate Studies in Mathematics, University of
Roma "La Sapienza"
- 1/02- 9/03 Member of the Managing Board, Dipartimento di Matematica
- 11/98-11/99 Member of the Managing Board, Dipartimento di Matematica
- since 2/93 Rappresentative of University of Roma "La Sapienza" in the Scientific
Board of the CASPUR Consortium (www.caspur.it)
- 2/88-2/91 President of the Board for Computing Facilities,
Dipartimento di Matematica
- 84-87 Member of C.U.N. Board for the Area "Mathematics"
- 85-86 Member of the Managing Board of Dipartimento di Matematica

TEACHING ACTIVITY

Undergraduate courses

Corso di Laurea in Mathematics

<i>Academic Year</i>	<i>Course</i>
87-88	Istituzioni di Analisi Superiore
90-92, 95-97, 00-01	
01-02, 02-03	Matematica Applicata
93-94	Analisi Matematica I
94-95, 99-00	Analisi Matematica II
98-99	Matematica Computazionale
94-95, 95-96, 96-97	Analisi Numerica (Roma Tre)
05-06, 07-08	
10-11, 11-12, 16-17	Analisi Numerica (Sapienza)
97-98, 98-99, 99-00	Laboratorio di Programmazione e Calcolo (Roma Tre)
00-01, 01-02, 02-03	Laboratorio di Programmazione e Calcolo (Sapienza)
06-07, 14-15, 15-16	
05-06, 06-07, 07-08, 08-09, 09-10, 10-11, 12-13, 13-14	Metodi Numerici di Ottimizzazione (Sapienza)
09-10, 10-11, 11-12	Metodi Numerici per le Equazioni alle Derivate Parziali (Sapienza)
14-15	
15-16, 16-17	Metodi Numerici per le Equazioni alle Derivate Parziali non Lineari (Sapienza)
12-13, 13-14	Istituzioni di Analisi Numerica

Corsi di Laurea in Physics and Computer Science

88-89, 90-91, 97-98	Analisi Matematica I
89-90, 91-92, 98-99	Analisi Matematica II

Graduate courses

Master in "Mathematical Methods for the Analysis and Control of Systems"

85-86, 86-87, 87-88	Lectures on "Integrazione Numerica e Simulazione"
88-89, 89-90, 90-91, 91-92	Metodi numerici per il controllo deterministico
05-06, 06-07, 07-08	Programmazione in C

Ph.D. Program in Mathematics, University of Roma "La Sapienza"

95-96	Analisi ed approssimazione di problemi di controllo ottimo per processi di diffusione
02-03, 04-05, 06-07, 07-08,	

09-10, 11-12 Metodi Numerici per le Equazioni alle Derivate Parziali
11-12 Numerical methods for Hamilton-Jacobi equations and
optimal control problems

Ph.D. Program in "Mathematical Methods and Modelling for Science, Technology and Society", University of Roma "La Sapienza"

95-96 Analisi ed approssimazione di problemi di controllo ottimo
per processi di diffusione

00-01 Metodi Numerici per le Equazioni alle Derivate Parziali

01-02 Metodi Numerici per le equazioni di Hamilton-Jacobi

Master "Scientific Computing", University of Roma "La Sapienza"

02-03 Metodi Numerici per le Equazioni alle Derivate Parziali

02-03 Metodi Numerici per il Controllo Ottimo

08-09, 09-10

11-12,12-13 Metodi Numerici per il Trattamento delle Immagini

13-14,14-15

FIXO Course (Roma "La Sapienza")

08-09 Metodi Numerici per il Trattamento delle Immagini

Teaching activity outside Italy

Undergraduate courses

85-86 Analisi Matematica II at University of Paris Sud-Orsay

87-88 Lectures in "Contrôle Deterministe" for the Troisième Cycle
"Mathématiques et automatique" at University of Paris IX -Dauphine.

Graduate Courses

September 2000, Ph.D. course TIFR-Bangalore (India)

"An introduction to the analysis and approximation of Hamilton-Jacobi equations with applications"

March 2004, Ph.D. Course, IRIT-Toulouse (Francia)

"Quelques methodes pour le traitement d'images par les
EDP nonlineaires"

June 2004, Summer School "Differential Games and Applications", GERAD,
Montreal (Canada)

"Numerical methods for differential games based on PDEs"

February 2007, MATHEON Course, Berlin
"An introduction to viscosity solutions"

November 2007, ENSTA, Paris
Minicourse "Fast Marching Methods for Front Propagation"
Winter School "Introduction to Numerical Methods for Moving
Boundaries"

June 2008, Ph.D. Course, Santiago de Compostela
"An introduction to viscosity solutions: theory, numerics
and applications"

September 2008, INRIA, Rocquencourt
Course CEA-EDF-INRIA "Numerical methods for Hamilton-Jacobi
equations and hyperbolic conservation laws"

June 2009 Ecole CNRS Figeac,
"Nouveaux outils mathématiques pour l'analyse d'images et la vision par
ordinateur", Figeac,
Course "Méthodes d'ensembles de niveau et algorithmes à marche
rapide"

April 2012, ENSTA, Paris
SADCO Spring School & Workshop "Applied and Numerical
Optimal Control"
Course "Numerical Schemes for Hamilton-Jacobi equations,
optimal control and games"

Settembre 2013, Padova, Dipartimento di Matematica
An introduction to Numerical Optimal Control
Dottorato in Matematica

Advisor for Ph.D. Thesis

F. Camilli (Indam, Dottorato di Ricerca Roma "La Sapienza"), L. Corrias (Indam),
R. Ferretti (Dottorato di Ricerca Roma "La Sapienza"), T. Giorgi (IAC-CNR,
Purdue University), P. Lanucara (Borsista IBM-CASPUR), A. Biani (Dottorato in
Matematica, Pisa), A. Marta (Indam), C. Signani (CNR, CASPUR), M. Sagona
(Dottorato in Matematica Applicata e Informatica, Univ. di Napoli, 2001), E.
Carlini (Dottorato.in Modelli e Metodi Matematici per la Scienza, La Tecnologia e
la Società, 2004), E. Cristiani (Dottorato.in Modelli e Metodi Matematici per la
Scienza, La Tecnologia e la Società, 2007), M. Rorro (CASPUR, Dottorato.in
Modelli e Metodi Matematici per la Scienza, La Tecnologia e la Società, 2007), R.

Mecca (Dottorato.in Matematica, Settembre 2011), A. Festa ((Dottorato.in Matematica, Gennaio 2012), A. Alla (Dottorato.in Matematica, 2013), S. Tozza (Dottorato.in Matematica, 2014), S. Sahu (Dottorato.in Matematica, 2015), G. Fabrini (Genova, ongoing), G. Paolucci (Roma La Sapienza, ongoing).

Member of Committees for PhD, Professorships and Grants

PhD Final Exams

D. Pascal (IRIT, Toulouse, 2000)

Peut-on estuaire le relief d'une seule image?

N. Parolini (EPFL Losanna,2004)

Computational fluid dynamics for naval engineering applications

C. Taubert (Institut National Polytechnique, Toulouse, 2005)

Filtrage anisotrope robuste et segmentation par B-spline snake : application aux images ´echographiques

A. Gorbel, (CERMICS, Paris, 2006)

Analyse num´erique de la dynamique des dislocations et applications a l'homog´en´eisation

F. Courteille (Ecole Doctorale Informatique et Telecommunications, Toulouse, 2006)

Vision monoculaire: contributions theoriques et application a la numerisation des documents

A. Lakhua (Ecole Polytechnique, Paris, October 2007)

Methode des elements finis max-plus pour la resolution numerique de problemes de commande optimal deterministe

S. Detournay (Ecole Polytechnique, Paris, 2012)

Multigrid methods for zero-sum two player stochastic games

G. Bianchi Granato (ENSTA, Paris, November 2012)

Optimization de lois de gestion energetiques des vehicules hybrides

Z. Qu (Ecole Polytechnique, Paris, October 2013)

Nonlinear Perron-Frobenius theory and max-plus numerical methods for Hamilton-Jacobi equations

A. Picarelli (Ecole Polytechnique, Paris, April 2015)

Sur des problèmes de contrôle stochastique avec contraintes sur l'état

J. Rotaetxe Arto (Oxford, February 2017)

Boundary treatment and multigrain preconditioning for semi-Lagrangian schemes applied to Hamilton-Jacobi-Bellman equations

Habilitation a Diriger des Recherches (HDR) (in France)

Prof. J.D. Durou (IRIT, Paul Sabatier, Toulouse, 2009)

Prof. H. Zidani (ENSTA, Paris, 2010)

Haut Conseil de l'évaluation de la recherche et de l'enseignement supérieur (HCERES, France)

Member of the evaluation committee for the Laboratoire de Mathématiques de Bretagne Atlantique (LMBA), at Brest and Vannes (February 2016)

Selection Committees in Italy

Member of the Committee for a position of Associate Professor in ANALISI NUMERICA MAT/08 at Lecce

Member of the Committee for a position of Full Professor in ANALISI NUMERICA MAT/08 at Palermo

Member of the National Committee for the habilitation of professors in Numerical Analysis (ASN 2016-2018)

SCIENTIFIC ACTIVITY

Main Research Topics

1. Numerical methods for PDEs. Approximation schemes for conservation laws, Hamilton-Jacobi equations and hyperbolic equations. Applications to front propagation, fluid dynamics, control theory, homogenization and image processing.
2. Control Theory and applications. Optimal control and Hamilton-Jacobi equations: characterization of the value function, optimal controls in feedback form. differential games, pursuit-evasion games, noncooperative games

Scientific Visits

I have been invited for research periods by the following institutions:

- CEREMADE, Université Paris IX-Dauphine
- IMA, Institute for Mathematics and its Applications, University of Minnesota
- Department of Mathematics, Wayne State University
- Division of Applied Mathematics, Brown University
- Department of Mathematics, University of California - Los Angeles (UCLA)
- NADA, Koenig Technische Hogshule, Stockholm
- PIMS, Pacific Institute for Mathematical Sciences, Vancouver
- TIFR, Tata Institute of Fundamental Research, Bangalore
- ENSTA, Ecole Nationale Supérieure de Techniques Avancées, Paris
- Department of Mathematics, Santiago de Compostela
- Paris 7, Paris
- IRIT, Université "Paul Sabatier", Tolosa
- INRIA, Rocquencourt e Sophia-Antipolis
- Weierstrass Institute for Applied Analysis and Stochastics (WIAS), Berlin
- Paris 7 and Laboratoire J.L. Lions, Paris

Conferences, workshops and invited talks

I have been invited to give talks at the following institutions:

- S.I.S.S.A., Trieste, February 1981
- Istituto Matematico, University of Genova, March 1982
- Institut de Mathématiques et Informatiques, Université de Bordeaux, February 1983
- Institut Henry Poincaré, Parigi, March 1983
- CEREMADE, Université Paris IX Dauphine, April 1983, June 1984, January 1988

I.N.R.I.A., Sophia-Antipolis, Nizza, April 1983
Laboratorio di Didattica delle Scienze, University of Roma "La Sapienza",
July 1984
School of Mathematics, University of Leeds, May 1985
I.A.C., Roma, February 1987, March, May 1988
Dipartimento di Matematica, University of Padova, September 1988,
March 1995, March 2004
SFB256, Nichtlineare Partielle Differentialgleichungen, University of Bonn,
March 1990
Dipartimento di Matematica, University of L'Aquila, March 1991
Department of Mathematics, Wayne State University, Detroit, July 1991,
February 1993
Division of Applied Mathematics, Brown University, Providence,
August 1991
Dipartimento di Metodi e Modelli Matematici per le Scienze Applicate,
University of Roma "La Sapienza", May 1992
Institut for Mathematics and its Applications, University of Minnesota,
November 1992
Mathematisches Institut, Technische Universität München, February 1993
Program System Institute, Accademia Russa delle Scienze, Pereslavl-Zalessky,
June 1993
Institute of Numerical Mathematics, Accademia Russa delle Scienze,
Mosca, June 1993
Irkutsk Computing Center, Accademia Russa delle Scienze, Irkutsk, June 1993
Dipartimento di Matematica, University of Roma "Tor Vergata", June 1993
Dipartimento di Matematica, MIEM, Mosca, June 1995
Dipartimento di Matematica, Moscow Aviation Institute, Mosca, June 1995
Dipartimento di Matematica, University of Augsburg, January 1996
Department of Mathematics, UCLA, October 1997
NADA, Koenig Technische Hogshule, Stoccolma, October 1998
Departement de Mathématiques, Université "Paul Sabatier", Tolosa,
May 1999, January 2000,
TIFR, Tata Institute of Fundamental Research, Bangalore, September 2000
RIMS, Kyoto, September 2002
MIP, Tolosa, March 2004
IRIT, Tolosa, March 2004
ENSTA, Ecole Nationale Supérieure de Techniques Avancées,
Paris, 2005, 2006, 2012
INRIA, Rocquencourt e Sophia-Antipolis, 2007
WIAS, Berlin, 2007
Department of Mathematics, Santiago de Compostela, 2008
College de France, Paris, 2009
CMAP, Ecole Polytechnique, Paris, 2009
Département de Mathématiques, Université de Tours, 2012

Invited talks at conferences and mini-symposiums

- Contrôle stochastique et equations aux derivées partielles nonlineares,
Parigi, November 1987
- ICME-6, Sixth International Congress on Mathematical Education,
Budapest, July 1988
- III Elba Conference on Nonlinear Variational Problems and Partial
Differential Equations, October 1990
- Surface Tension and Movement by Mean Curvature, Trento, July 1992
- Optimal Control of Partial Differential Equations, Oberwolfach, January 1993
- Partial Differential Equations in Geometry and Physics: Theory and
Numerical Methods, Freiburg, February 1993
- Nonsmooth Analysis and Geometric Methods in Deterministic Optimal
Control, Minneapolis, February 1993
- Metodi Numerici per Problemi a Convezione Dominante, IAC-CNR,
Roma, September 1993
- Motion by Mean Curvature and related Topics, Levico, June 1994
- CIME “Viscosity solutions and applications”, Montecatini, June 1995
- ICIAM 95 Minisymposium, Advances in Dynamic Programming,
Amburgo, July 1995
- ICIAM 95 Minisymposium, Functional differential equations and their
applications, Amburgo, July 1995
- IFIP Conference “Modelling and optimization of distributed parameter
systems with application to engineering”, Varsavia, July 1995
- Generalized Stefan problems: models, analysis and numerical methods,
Pavia, August 1995
- Numerical methods for free boundary problems, Freiburg, September 1995
- Optimal Control, Oberwolfach, January 1996
- International Conference on Control and Estimation of Distributed
Parameter Systems, Vorau (Austria), July 1996
- Conference on Recent Advances in Numerical Methods for Partial Differential
Equations, Trieste, September 1996
- Workshop on Stochastic Control and Nonlinear Filtering, North Carolina State
University of Raleigh, October 1996
- Fourth SIAM Conference on Control and its Applications, Jacksonville,
Florida, May 1998
- Workshop on “New Trends in Mathematical Control Theory and PDEs”,
Levico Terme, June 1998
- MTNS98 - Mathematical Theory of Network and Systems, Minisimposio
“Numerical methods for the stabilization of nonlinear systems”, (Org. W.
Kliemann e F. Colonius), Padova, July 1998
- MTNS98 - Mathematical Theory of Network and Systems, Minisimposio
“Viscosity solutions methods”, (Org. M. Bardi), Padova, July 1998
- Workshop “Phase field models and surface effects”, Cortona, September, 1998

“Evolutions Equations and applications”, Cortona, May 1999
“CANUM 99- 31eme Congres d’Analyse Numerique 1999”,
Ax-Bonascres, Francia, May 1999
5th Workshop on “Computational Methods for Oceanic, Atmospheric and
Groundwater Flows”, Trento, September 1999
“Numerical Methods for Kinetic and Hyperbolic Equations”,
Ferrara, December, 1999
Workshop “Phase Transitions and Interfaces in Evolution Equations: analysis,
control and approximations”, S. Margherita Ligure, February 2000
Minisimposio Italia-Cina, all’interno di SIMAI 2000, Ischia, June 2000
ORASIS, Cahors, June 2000
“Phase Transition”, Vancouver (Canada), July 2001
“Viscosity solutions and Applications”, Vancouver (Canada), July 2001
ENUMATH 2001, Ischia Porto, July 2001
“Numerical Algorithms”, Marrakesch, September 2001
SIMAI 2002, Cagliari, Italy, July 2002
“Viscosity solutions and Applications”, Cortona, July 2002
“Algoritmy 2002”, Tatra Mountains (Rep. Slovacca), September 2002
RIMS Conference on “Viscosity solutions and Applications”, Kyoto,
September 2002
Workshop “Front propagation and viscosity solutions”, IHP, Parigi,
December 2002
INTERPHASE 2003, Newton Institute, Cambridge, May 2003
Convegno UMI 2003, Milano, Session "Scientific Computing",
September 2003
Workshop "Equations de Hamilton-Jacobi-Bellman et controle",
ENSTA, Paris, September 2003
SIMAI 2004, Venezia, September 2004.
ICIAM 2007 Minisymposium "Efficient methods for Hamilton-Jacobi
equations", Zurich, 2007
ENUMATH 2007 - Minisymposium "Level-set methods, Hamilton-Jacobi
equations and applications", Graz, September 2007
Pontryagin Centennial Conference, Moscow, June 2008
IFAC 2008, Misymposium "Control problems for dynamical systems under
conflicts and uncertainty", Seoul, July 2008
Nonlinear PDEs, Rome, September 2008
50 Years of Optimal Control, Bendlewo, September 2008
Nice Weak KAM Methods, Nice, February 2009
14th Belgian-French-German Conference on Optimization,
Leuven, September 2009
Actual Problems of Stability and Control Theory (APSCT 2009),
Ekaterinburg, September, 2010
Workshop on Computational Issues in Nonlinear Control,
Monterey, November 2009

Motion of Interfaces and Nonlinear PDEs, Tours, February 2010
Classical and Weak KAM Theory, Montegrotto Terme, February 2010
EPSRC Symposium on Game Theory for Finance, Social and Biological Sciences, Warwick, April 2010
Journées Numeriques de Besancon, May 2010
ICIAM, Vancouver, July 2011
IFAC 2011, Milan, September 2011
SADCO Workshop "Optimal Control", Londra, September, 2011
ESF-OPTPDE Workshop "Fast solvers for simulation, inversion and control of wave propagation problems", University of Wurzburg, September 2011
Workshop on Control and Optimization of PDEs, Graz, October 2011,
2nd Workshop on Computational Issues in Nonlinear Control, Monterey, November 2011
12th Viennese Workshop "Optimal Control, Dynamic Games and Nonlinear Dynamics" Vienna University of Technology, May 30 - June 2, 2012
IFIP TC 7/2013 System Modeling and Optimization, September 8-13, 2013
European Science Foundation OPTPDE
9th International Conference on "Large Scale Scientific Computations", Sozopol, June 3-7, 2013 (plenary)
Workshop "Modeling and Control of Large Interacting Dynamical Systems", 10 - 12 September 2013, Université Paris-Dauphine, Paris, France.
New Perspectives in Shape Analysis, February 9 – 14, 2014, Dagstuhl Seminar 14072, Dagstuhl Schloss, Germany
Control Theory and Theory of Generalized Solutions of HJ Equations, Ekaterinburg, April 2015
13th Viennese Workshop on Optimal Control and Dynamic Games, May 13-16, 2015, Wien, Austria
16th Italian Meeting on Hyperbolic Equations, GSSI, October 22-24, 2015, L'Aquila (plenary)
Numerical Aspects of Hyperbolic Balance Laws and Related Problems, December 17-19, 2015, Dipartimento di Matematica, Università di Ferrara (plenary)
Optimal Control for Evolutionary PDEs and Related Topics - OCERTO - Cortona, June 20-24, 2016 (invited)
Recent Advances in Numerical Methods for Hyperbolic Conservation Laws and Nonlinear Time Dependent Partial Differential Equations, Università di Trento, November 2-4, 2016 (invited)
Numerical methods for Hamilton-Jacobi equations in optimal control and related fields, RICAM (Linz), November 21-25, 2016 (invited)

Organization of Conferences and Schools

I have been a member of the **Scientific Committee** for the following conferences:

IFAC Conference "Singular solutions and perturbations of control systems"

(Peresslavl-Zalessky, July 95 e July 97)

8th International Symposium on Dynamic Games and Applications (Maastricht, July 1998).

Numerical Methods for Viscosity Solutions and Applications, Crete, July 1999

Numerical Methods for Viscosity Solutions and Applications, Rome, September 2004

INTERPHASE 2004, Rome, September 2004

ENUMATH 2005 - Minisymposium "Level-set methods, Hamilton-Jacobi equations and applications", Santiago de Compostela, July 2005

ENUMATH 2007 - Minisymposium "Level-set methods, Hamilton-Jacobi equations and applications", Graz, September 2007

SIAM "Conference on Control and its Applications", Denver, Colorado, July 2009

Mean Field Games and related topics, Roma, May 12-13, 2011

WEB: <http://www.mat.uniroma1.it/ricerca/convegni/2011/mfg/>

ICIAM 2011 - Minisymposium "Efficient Numerical Methods For Hamilton-Jacobi Equations", Organized with O. Bokanowski

WEB: <https://itn-sadco.inria.fr/events-meetings/satellite-events/satellite-events-2011/minisymposium-in-iciam-congress>

Recent advances on theory and applications of Semi-Lagrangian methods, Rome, December 5-6, 2011.

WEB: <http://www.mat.uniroma1.it/ricerca/convegni/2011/SL/>

Minisymposium at ORCOS 2012 "Optimal Control, Dynamic Games and Nonlinear Dynamics", Vienna University of Technology, May 30 - June 2, 2012

NETCO Conference "New trends in optimal control ", Tours, June 23-27, 2014

WEB: <http://netco2014.sciencesconf.org/>

Workshop "New perspectives in optimal control and games", Roma, November 10-12, 2014

WEB: <http://www1.mat.uniroma1.it/ricerca/convegni/2014/sadco2014/>

Minisymposium "Stochastic Control and Applications" (with H. Zidani), 13th Viennese Workshop on Optimal Control and Dynamic Games, May 13-16, 2015, Wien, Austria

MS-35 "Advanced Numerical Methods for Partial Differential Equations and Applications", Congresso SIMAI 2016, Milano, 13-16 Settembre 2016 (con S. Perotto e G. Rozza)

MS-41 "Model Reduction: Methods, Algorithms, Applications", Congresso SIMAI 2016, Milano, 13-16 Settembre 2016 (con S. Perotto e G. Rozza)

I have been member of the **Organizing Committee** of the following conferences:

Recent Mathematical Methods in Dynamic Programming (Roma, 1984)
Educational Computing in Mathematics (Roma, 1987)
Giornate sulle equazioni di Hamilton-Jacobi (Castiglione della Pescaia,
May 1991)
Recent Advances in Numerical Methods for Partial Differential Equations
(Roma, January 1993)
Viscosity Solution and Application, (Bressanone, July 2000)
Analysis and Control of Deterministic and Stochastic Evolution Equation,
(Bressanone, July 2000)
Workshop "Mathematical Models for Dislocations", Roma, December 2007
Viscosity, metric and control theoretic methods in nonlinear PDEs: analysis,
approximations, applications, (Rome, September 2008)
WEB: <http://www.mat.uniroma1.it/ricerca/convegni/2008/RomaSet08/>
Conference "New Horizons in Optimal Control", Cascais, September 8-10,
2014, WEB:<http://paginas.fe.up.pt/~mrpinho/NHOC2014/>

Post-Graduate schools

I have organized the following schools:

COMET Course "Constructive Methods in Optimal Control and Applications"
(with P. Saint-Pierre), Rome, September 1993.
"Numerical Methods for Optimal Control Problems and Industrial Applications"
(with A. Quarteroni), Pisa, Scuola Normale Superiore, January 1996
"Numerical Methods for Nonlinear Problems in Optimization and Control"
(with A. Pasquali), Cortona, June 2001.
SMI-INDAM Summer School "Optimal Control of Partial Differential Equations",
Cortona July 2010 (WEB: <http://www.mat.uniroma1.it/cortona10/>)
SADCO Summer School & Workshop "New Trends in Optimal Control" (with F.
Ancona), Ravello, September 2012

ACTIVITIES FOR SCIENTIFIC JOURNALS

As Editor

Editor for international journals

Associate Editor of the Journal of Dynamic Games and Applications, Springer Verlag (WEB: <http://www.springer.com/mathematics/applications/journal/13235>)

Member of the Scientific Board of the Springer Series

Static & Dynamic Game Theory: Foundations & Applications WEB: <http://www.springer.com/series/10200>

Invited associate editor for two special issues of Applied Numerical Mathematics

Invited Associate editor for one special issue of CAIM <http://caim.simai.eu/index.php/caim> (2016)

As Referee

I have written referee reports for the following journals:

Annals of Dynamic Games
Applied Mathematics and Optimization
Automatica
Bollettino UMI
Computational and Applied Mathematics
Control & Cybernetics
Dynamic Games and Applications
Discrete and Continuous Dynamical Systems
Mathematical Reviews
Mathematics of Computation
ISDG - International Society of Differential Games volumes
IEEE Transactions on Automatic Control
IEEE Transactions on Image Processing
JDGA - Journal of Dynamic Games and Applications
IJPRAI - International Journal of Pattern Recognition and Artificial Intelligence
JMAA Journal of Mathematical Analysis and Applications
IMA Journal on Numerical Analysis
Interfaces and Free Boundaries
Journal of Computational Physics
Journal of Scientific Computing
Nonlinear Analysis and Applications
Numerische Mathematik
Set-Valued Analysis

SIAM Journal on Numerical Analysis
SIAM Journal on Control and Optimization
SIAM Journal on Scientific Computing
SIAM Journal on Imaging Sciences
Zentralblatt für Mathematik

CONSULTING FOR RESEARCH AGENCIES

CNR, Italy
NSF, USA
ISF, Israel
NSF, Canada
NSF, Netherland
MIUR, Italy
AFORS, USA
NSF, Switzeland
NSF, Portugal

PUBLICATIONS

Books

1. I. Capuzzo Dolcetta- M. Falcone, L'analisi al calcolatore, Zanichelli, 1990
ISBN 8808039048
2. M. Falcone, R. Ferretti,
Semi-Lagrangian Approximation Schemes for Linear and Hamilton-Jacobi
Equations, SIAM, 2014 (319pp)
ISBN 978-1-611973-04-4

Articles on international journals and volumes (with referees)

1. M. Falcone, A. Siconolfi
Maximum descent monotone solutions of an ODE with discontinuous
right-hand side,
Journal of Optimization Theory and Applications, 39 (3), 1983, 391-402
2. M. Falcone, M. Matzeu
Optimal stopping for a Cauchy problem without uniqueness,
Control and Cybernetics, 12 (3-4), 1983, 85-97
3. M. Falcone, G. Israel
Qualitative and numerical analysis of a class of prey-predators models,
Acta Applicandae Mathematicae, 4, 1985, 225-258
4. M. Falcone
Approximate viscosity solutions of the Hamilton-Jacobi equation,
Methods of Operations Research, 49, 1985, 507-521
- 5a. M. Falcone
A numerical approach to the infinite horizon problem of deterministic
control theory,
Applied Mathematics and Optimization, 15, 1987, 1-13
- 5b. M. Falcone
Corrigenda: A numerical approach to the infinite horizon problem of
deterministic control theory,
Applied Mathematics and Optimization, 23, 1991, 213-214
6. M. Falcone, P. Saint-Pierre
Slow and quasi-slow solutions of differential inclusions,
Non-linear Analysis TMA, 11, 3, 1987, 367-377

7. I. Capuzzo Dolcetta, M. Falcone
Discrete dynamic programming and viscosity solutions,
Annales de l'Institut Henry Poincaré- Analyse non-lineaire, 6 (supplement),
1989, 161-184
8. M. Bardi, M. Falcone
An approximation scheme for the minimum time function,
SIAM Journal of Control and Optimization, 28 , 4, 1990, 950-965
9. M. Falcone, T. Giorgi e P. Loreti
Level sets of viscosity solutions and applications
SIAM J. Appl. Math., 54 (1994), 1335-1354
10. M. Bardi, M. Falcone
Discrete approximation of the minimal time function for systems with regular
optimal trajectories,
in A. Bensoussan, J.L. Lions (eds.), Analysis and Optimization of Systems,
Lecture Notes in Control and Information Sciences, n. 144, Springer-Verlag,
1990, 103-112
11. L. Corrias, M. Falcone e R. Natalini
Numerical schemes for Conservation Laws via Hamilton-Jacobi equations
Mathematics of Computation, 64 (1995), 555-580
12. M. Bardi, M. Falcone e P. Soravia
Fully discrete schemes for the value function of pursuit-evasion games,
Advances in Dynamic Games and Applications, T. Basar and A. Haurie eds. ,
Birkhäuser, (1994), 89-105.
13. F. Camilli e M. Falcone
An approximation scheme for the optimal control of diffusion processes,
Mathematical Modelling and Numerical Analysis , 29, 1, 1995, 97-122
14. M. Falcone
The minimum time problem and its applications to front propagation
in A. Visintin e G. Buttazzo (eds) , "Motion by mean curvature and
related topics", De Gruyter Verlag, Berlino, 1994
15. M. Falcone, R. Ferretti
Discrete time high-order schemes for viscosity solutions of
Hamilton-Jacobi-Bellman equations, Numerische Mathematik, 67 (1994),
315-344
ISSN 0029-599X

16. M. Falcone, P. Lanucara e A. Seghini
A splitting algorithm for Hamilton-Jacobi-Bellman equations
Applied Numerical Mathematics, 15 (1994), 207-218
ISSN 0168-9274
17. F. Camilli, M. Falcone
Approximation of optimal control problems with state constraints:
estimates and applications,
B.S. Mordukhovic, H.J. Sussman eds., "Nonsmooth analysis and geometric
methods in deterministic optimal control", IMA Volumes in Applied
Mathematics 78, Springer Verlag, 1996, 23-57
18. F. Camilli, M. Falcone, P. Lanucara e A. Seghini, A domain decomposition
method for Bellman equations, in D.E. Keyes and J.Xu (eds), Domain
Decomposition methods in Scientific and Engineering Computing,
Contemporary Mathematics n.180, AMS, 1994, 477-483
19. M. Falcone, R. Ferretti
Convergence analysis for a class of high-order semi-lagrangian
advection schemes, SIAM J. Numerical Analysis 35 (1998), no. 3, 909--940
ISSN 0036-1429
20. M. Bardi, S. Bottacin, M. Falcone
Convergence of discrete schemes for discontinuous value functions of
pursuit-evasion games, in G.J. Olsder (ed.), "New Trends in Dynamic Games
and Applications", Birkhäuser, (1995), 273-304.
21. M. Falcone, T. Giorgi
An approximation scheme for evolutive Hamilton-Jacobi equations,
in W.M. McEneaney, G. Yin and Q. Zhang (eds.),
"Stochastic Analysis, Control, Optimization and Applications: A Volume in
Honor of W.H. Fleming", Birkhäuser, 1999, 289-303.
22. M. Falcone, R. Rosace
Discrete- time approximation of optimal control problems for
delayed equations,
Control & Cybernetics, 25 (1996), 665-675
23. F. Camilli, M. Falcone
Approximation of control problems involving ordinary and impulsive controls
Control, Optimisation and Calculus of Variation, 4 (1999), 159-176.

24. F. Camilli, M. Falcone
Analysis and approximation of the infinite horizon problem with impulsive controls
Avtomatika i Telemekanika, 7, 1997, 169-184.
25. A. Briani, M. Falcone
A priori estimates for the approximation of a parabolic boundary control problem,
in W. Desch, F. Kappel, K. Kunisch, eds., "Control and Estimation of Distributed Parameter Systems", International Series of Numerical Mathematics,
vol.126, Birkhäuser Verlag, Berlin, 1998, 49-65.
26. M. Falcone
Numerical solution of dynamic programming equations,
Appendice del libro M. Bardi, I. Capuzzo Dolcetta, "Optimal control and viscosity solutions of Hamilton-Jacobi-Bellman equations", Birkhäuser, Boston, 1997, 471-504.
27. M. Bardi, M. Falcone, P. Soravia
Numerical methods for pursuit-evasion games via viscosity solutions,
Dipartimento di Matematica, in M. Bardi, T. Parthasarathy e T.E.S. Raghavan (eds.) "Stochastic and differential games: theory and numerical methods", *Annals of the I.S.D.G.*, 4, Birkhäuser, 1999, 289-303.
28. M. Falcone
Some remarks on the synthesis of feedback controls via numerical methods, in
J.L. Menaldi, E. Rofman, A. Sulem (eds), "Optimal Control and Partial Differential Equations", IOS Press, 2001, 456-465.
29. M. Falcone, R. Ferretti, T. Manfroni
Optimal discretization steps in semi-Lagrangian approximation of first order PDEs,
M. Falcone, Ch. Makridakis (eds), "Numerical Methods for Viscosity Solutions and Applications", World Scientific, Singapore, 2001.
30. M. Falcone, P. Lanucara, M. Marinucci
Parallel Algorithms for the Isaacs equation, in E. Altman and O. Pourtallier (eds), "Advances in Dynamic Games and Applications", *Annals of the ISDG*, vol. 6, 2001, Birkhauser, 203-223
31. M. Falcone, O. Lopez-Pouso,
Analysis and comparison of two approximation schemes for the radiative transfer system, *Math. Mod. Meth. Appl. Sc.* 13 (2003), n. 2, 159-186.

32. M. Falcone, R. Ferretti
Semi-Lagrangian schemes for Hamilton-Jacobi equations, discrete representation formulae and Godunov methods,
Journal of Computational Physics, 175, (2002), 559-575.
33. M. Falcone, P. Stefani
Advances on Parallel Algorithms for the Isaacs equation,
Advances in dynamic games, 515–544, *Ann. Internat. Soc. Dynam. Games*, 7,
Birkhäuser, Boston, 2005.
34. M. Falcone, M. Sagona and A. Seghini,
A global algorithm for the Shape-from-Shading problem with black shadows,
in F. Brezzi, A. Buffa, S. Corsaro, A. Murli (eds), “Numerical Mathematics and Advanced Applications - ENUMATH 2001”, Springer-Verlag, 2003, 503-512.
35. M. Falcone, R. Ferretti
Consistency of a large time--step scheme for mean curvature motion,
in F. Brezzi, A. Buffa, S. Corsaro, A. Murli (eds), “Numerical Mathematics and Advanced Applications- ENUMATH 2001”, Springer-Verlag, 2003, 495-502.
36. E. Carlini, M. Falcone e R. Ferretti,
An efficient algorithm for Hamilton-Jacobi equations in high dimensions,
Computing and Visualization in Science, 7 (2004), 15-29.
37. J.D. Durou, M. Falcone e M. Sagona
Numerical Methods for Shape from Shading: a new survey with benchmarks
Computer Vision and Image Understanding, Elsevier,
vol. 109, n. 1 (2008), p. 22-43.
38. M. Falcone
Numerical Methods for Differential Games via PDEs
International Game Theory Review, vol. 8, 2 (2006), 231-272.
39. M. Falcone, S. Finzi Vita
A finite difference approximation of a two-layers system for growing sandpile
SIAM J. Scientific Computing, Vol. 28, No. 3 (2006), 1120–1132.
ISSN 1064-8275

40. E. Carlini, M. Falcone e R. Ferretti
A semi-Lagrangian scheme for the curve shortening flow in co-dimension 2
Journal of Computational Physics, vol. 225, n. 3 (2007), 1388-1408
41. E. Cristiani, M. Falcone
Fast semi-Lagrangian schemes for the eikonal equation and applications
SIAM J. Num. Anal., vol. 45, n. 5 (2007), 1979-2011.
ISSN 0036-1429
42. E. Cristiani, M. Falcone
A fully-discrete scheme for the value function of differential games
with state constraints,
Annals of Dynamic Games, vol. 10 (2009), special issue "Advances in
Dynamic Games and Their Applications: Analytical and Numerical
Developments", Pierre Bernhard, Vladimir Gaitsgory, and Odile Pourtallier
(eds), 179-210 DOI: 10.1007/978-0-8176-4834-3_11
43. E. Carlini, M. Falcone, N. Forcadel, R. Monneau
Convergence of a generalized fast marching method for a non-convex
eikonal equation, SIAM J. Numer. Anal. 46 (2008), 2920-2952.
ISSN 0036-1429
44. E. Cristiani, M. Falcone,
A characteristics driven Fast Marching method for the eikonal equation,
in K. Kunisch, G. Of, O. Steinbach (eds.),
Numerical Mathematics and Advanced Applications (Proceedings of
ENUMATH 2007, Graz, Austria, September 10-14, 2007), 695-702,
Springer, Berlin Heidelberg, 2008, 695-702.
45. M. Falcone, S. Finzi Vita,
A semi-Lagrangian scheme for the open table problem in
granular matter theory,
in K. Kunisch, G. Of, O. Steinbach (eds.),
Numerical Mathematics and Advanced Applications
(Proceedings of ENUMATH 2007, Graz, Austria, September 10-14, 2007),
Springer, Berlin Heidelberg, 2008, 711-718.
- 46.. M. Falcone, M. Rorro,
On a variational approximation of the effective Hamiltonian,
in K. Kunisch, G. Of, O. Steinbach (eds.),
Numerical Mathematics and Advanced Applications
(Proceedings of ENUMATH 2007, Graz, Austria, September 10-14, 2007),
Springer Berlin Heidelberg, 2008, 719-726.

47. M. Falcone, C. Truini
A level-set algorithm for front propagation in the presence of obstacles,
Rendiconti di Matematica e delle sue Applicazioni, vol. 29 (2009), 1-19
48. M. Falcone, M. Rorro,
Optimization techniques for the computation of the effective Hamiltonian,
M. Diehl, F. Glineur, E. Jarlebring and W. Michiels (eds.), "Recent Advances
in Optimization and its Applications in Engineering" - Proceedings of the
14th Belgian-French-German Conference on Optimization,
(Leuven, September 2009), Springer, 2010, pp. 225-236
DOI 10.1007/978-3-642-12598-0
49. M. Falcone, M. Rorro,
On the computation of the effective Hamiltonian in the non convex case,
Trudy Instituta Matematiki i Mekhaniki UrO RAN, 2010, v. 16, no.5,
253-260.
50. M. Breuss, E. Cristiani, J.-D. Durou, M. Falcone, O. Vogel,
Numerical algorithms for Perspective Shape from Shading,
Kybernetika, vol. 46 (2010), 207-225.
51. E. Carlini, M. Falcone, R. Ferretti
Convergence of a large time-step scheme for mean curvature motion,
Interfaces and Free Boundaries, vol. 12 (2010), 409-441.
DOI 10.4171/IFB
52. M. Breuss, E. Cristiani, J.-D. Durou, M. Falcone, O. Vogel
Perspective Shape from Shading: ambiguity analysis and numerical
approximations, SIAM J. Imaging Sci., 5 (2012), 311-342.
ISSN 1936-4954 (electronic)
53. S. Cacace, E. Cristiani, M. Falcone, A. Picarelli
A patchy dynamic programming scheme for a class of Hamilton-Jacobi-
Bellman equations, SIAM Journal on Scientific Computing, 34 (2012),
2625–2649.
ISSN 1064-8275
54. Y. Achdou, M. Falcone
A numerical scheme for mean curvature motion with nonlinear
Neumann conditions, Interfaces and Free Boundaries 14 (2012),
455-485
DOI 10.4171/IFB

55. E. Carlini, M. Falcone, Ph. Hoch
A Generalized Fast Marching Method on Unstructured Triangular Meshes,
SIAM J. Numerical Analysis, 51(6) (2013), 2999-3035.
ISSN 0036-1429
56. M. Falcone, R. Mecca
Uniqueness and approximation of a Photometric Shape-from-Shading model,
SIAM Journal on Imaging Sciences, 6 (1) (2013), 616-659.
ISSN 1936-4954 (electronic)
57. M. Falcone, S. Finzi Vita, T. Giorgi, R. Smits
A Semi-Lagrangian Scheme for the Game p-Laplacian via p-averaging,
Applied Numerical Mathematics, 73 (2013), 63-80.
ISSN 0168-9274
58. A. Alla, M. Falcone, D. Kalise
An Efficient Policy Iteration Algorithm for Dynamic Programming
Equations, PAMM · Proc. Appl. Math. Mech. 13 (2013), 467 – 468
DOI 10.1002/pamm.201310226 (on line journal)
59. A. Alla, M. Falcone, D. Kalise
An Efficient Policy Iteration Algorithm for Dynamic Programming
Equations, SIAM J. Sci. Comp., 37 (2015), n.1, 181–200.
arXiv:1308.2087 [pdf, other]
ISSN 1064-8275
59. A. Festa, M. Falcone
An approximation scheme for an eikonal equation with discontinuous
coefficients, SIAM J. Num. Anal., 52 (2014), 236-257
ISSN 0036-1429
60. S. Cacace, E. Cristiani. M. Falcone
Can single pass methods solve any Hamilton-Jacobi-Bellman equation?,
SIAM Journal on Scientific Computing, 36 (2014), 570-587.
ISSN 1064-8275
61. S. Cacace, E. Cristiani. M. Falcone,
Numerical approximation of Nash equilibria for a class of
non-cooperative differential games
in L. Petrosjan e V. V. Mazalov (eds), Game Theory and Applications,
vol. 16 (Chapter 4: pages 45-58), Nova Publishers, New York, 2013

62. S. Cacace, E. Cristiani, M. Falcone:
A local ordered upwind method for Hamilton-Jacobi and Isaacs equations
in Proceedings of 18th IFAC World Congress 2011.
63. E. Carlini, M. Falcone, A. Festa
A brief survey on semi-Lagrangian schemes for Image Processing
in M. Breuss, A. Bruckstein, P. Maragos "Innovations for Shape Analysis:
Models and Algorithms", Proceedings of Dagstuhl Seminar 11142, Springer
Verlag, 2013, pp. 191-218.
DOI 10.1007/978-3-642-34141-0, ISBN 978-3-642-34140-3
64. A. Alla, M. Falcone.
An adaptive POD approximation method for the control of advection-
diffusion equations, in Karl Kunisch, Kristian Bredies, Christian Clason and
Gregory Von Winckel (eds.), "Control and Optimization with PDE
Constraints", International Series of Numerical Mathematics,
Birkhäuser, Basel, 2013, pp.1-18
DOI 10.1007/978-3-0348-0631-2
65. A. Alla, M. Falcone.
A time adaptive POD method for optimal control problems,
in Y. Le Gorrec (eds.), Proceedings of the 1st IFAC Workshop on Control
of Systems Governed by Partial Differential Equations (CPDE 2013),
Curran Associates Inc., 2014 pp. -1-6
ISBN: 978-1-63266-290-3
66. S. Bhattacharya, T. Basar, M. Falcone
Surveillance for Security as a Pursuit-Evasion Game,
in R. Poovendran, W. Saad (eds), Decision and Game Theory for Security,
GAMESEC 2014,
Lecture Notes in Computer Science, LNCS XXX, 2014, pp. 370-379
ISBN 978-3-319-12601-2 (electronic); 978-3-319-12600-5
DOI 10.1007/978-3-319-12601-2_23
67. M. Falcone
Recent results in the approximation of nonlinear optimal control problems,
in I. Lirkov, S. Margenov, J. Wasniewski (eds.), Large Scale Scientific
Computing, LNCS 8353, Springer Verlag, 2014, pp. 15-32
ISBN 978-3-662-43879-4

68. M. Falcone, M. Verani
Recent results in Shape Optimization and Optimal Control for PDEs,
in R. Hoppe (ed.), Optimization with PDE constraints,
Lecture Notes in Computational Science and Engineering, Vol. 101
Springer Verlag, 2014, pp. 65-94
DOI 10.1007/978-3-319-08025-3
69. M. Falcone
Optimal control and the Dynamic Programming Principle
in J. Baillieul, T. Samad (eds), Encyclopedia of Systems and Control,
Springer Verlag, 2015
ISBN 978-1-4471-5057-2
70. A. Festa, M. Falcone
 L^1 convergence of a SL scheme for the eikonal equation with discontinuous
coefficients,
in F. Ancona, A. Bressan, P. Marcati, A. Marson (eds), Hyperbolic problems:
theory, numerics, applications, AIMS on Applied Mathematics, vol. 8, 2014,
pp. 559-566
ISBN 978-1-60133-017-8
71. O. Bokanowski, M. Falcone, R. Ferretti, L. Grüne, D. Kalise, H. Zidani
Value iteration convergence of ε -monotone schemes for stationary Hamilton-
Jacobi equations, Discrete and Continuous Dynamical Systems - Series A, 35
(9), 2015, pp. 4041-4070.
72. S. Cacace, M. Falcone
A dynamic domain decomposition for the eikonal-diffusion equation,
Discrete and Continuous Dynamical Systems, Series S 9 (1), 2016, 109-123
73. O. Bokanoswki, M. Falcone, S. Sahu
An efficient filtered scheme for some first order Hamilton-Jacobi-Bellman
equations, SIAM J. Sci. Comput. 38 (1), 2016, 171-195
74. S. Tozza, M. Falcone, Analysis and approximation of some shape-from-
shading models for non-Lambertian surfaces, J. Math. Imaging Vision, 55 (2),
2016, 153-178
75. M. Falcone and R. Ferretti, Numerical methods for Hamilton-Jacobi type
equations, in Handbook of Numerical Methods for Hyperbolic Problems, R.
Abgrall and C.W. Shu (eds), Elsevier, 2016
ISBN: 978-0-444-63789-5, ISSN: 1570-8659

Articles in Proceedings Volumes

1. M. Falcone, I. Capuzzo Dolcetta
Optimal stopping of a multivalued dynamical system and applications to a portfolio model,
in P. Caravani e K. Cichocki (eds.), System theory and mathematical economics, Pitagora ed., 1985
2. M. Falcone
Numerical solution of deterministic continuous control problems,
Proceedings of the International Symposium on Numerical Analysis, Madrid, 1985,
3. M. Falcone
An N-step algorithm for a class of linear systems of equations,
Atti del Convegno Nazionale di Analisi Numerica, Roma, September 1988, 201-208
4. L. Corrias, M. Falcone e R. Natalini
On a class of large time-step schemes for conservation laws
in A. Donato e F. Olivieri (eds.), "Nonlinear Hyperbolic Problems: Theoretical, Applied and Computational Aspects",
Notes on Numerical fluid dynamics, 43 (1993), Vieweg, pp. 159-170
5. M. Falcone, R. Ferretti
High-order approximations for viscosity solutions of Hamilton-Jacobi-Bellman equations
in A. Marino e M.K.V. Murthy (eds.), "Nonlinear Variational Problems and Partial Differential Equations, vol. III", Pitman Research Series in Mathematics, Longman, 1995
6. M. Falcone, R. Rosace
Approximation of optimal control problems for delayed equations,
ICIAM/GAMM 95 Special Issue of Zeitschrift für Angewandte Mathematik und Mechanik (ZAMM), vol. 2, O. Mahrenholtz and R. Mennicken (eds.), Applied Analysis, 197-201.
7. M. Falcone, P. Lanucara
Parallel algorithms for Hamilton-Jacobi equations
ICIAM/GAMM 95 Special Issue of Zeitschrift für Angewandte Mathematik und Mechanik (ZAMM), vol. 3, O. Mahrenholtz, K. Marti and R. Mennicken (eds.), Applied Stochastics and Optimization, 355-359.
8. M. Falcone, P. Lanucara, F. Massaioli, M. Rosati, C. Truini

The flame front propagation problem on the SIMD architecture QUADRICS
E. Hollander, G.R. Joubert, F.J. Peters and D. Trystram (Eds.),
“Parallel Computing: State-of-the-Art and Perspectives “,
Elsevier, 1996, 85-92.

9. F. Camilli, M. Falcone
An approximation scheme for the maximal solution of the shape-from-shading model,
Proceedings ICIP 96 “International Conference on Image Processing”
10. M. Falcone, M. Sagona
An algorithm for the global solution of the Shape-from-Shading model,
in A. Del Bimbo (ed.), Image Analysis and Processing, Lecture Notes in
Computer Science n. 1310, 1997, 596-603
11. M. Falcone, L. Grüne, F. Wirth
A maximum time approach to the computation of robust
domains of attraction,
in B. Fiedler, K. Groger, J. Sprekels, eds., "EQUADIFF 99, Berlin (1999)",
World Scientific, Singapore (2000), 844-849
12. M. Falcone, R. Ferretti
A-priori estimates for a semi-Lagrangian approximation scheme
for the wave equation,
in E.F. Toro "Godunov Methods: Theory and Applications (Oxford 1999)",
Kluwer/Plenum Academic Publishers, 2001, 293-300.
13. M. Falcone
An Introduction to Viscosity Solutions in Image Processing
Proceedings Conference ORASIS, Cahors, 2000
14. M. Falcone
An introduction to semi-Lagrangian schemes for second order
Hamilton-Jacobi equations,
Proceedings of the RIMS Conference on “Viscosity solutions
and Applications”, Kyoto, September 2002
15. E. Cristiani, M. Falcone, A. Seghini
Numerical Solution of the Shape-from-Shading problem
Proceedings of Science POS (CSTNA2005) 008,1-17,
Electronic journal <http://pos.sissa.it/>

16. E. Cristiani, M. Falcone
Fast Marching Semi-Lagrangian Methods for the Eikonal Equation,
Proceedings SIMAI 2004, Venezia – Isola di San Servolo (Italy),
September 20-24, 2004.
17. M. Falcone, S. Finzi Vita
A numerical study for growing sandpiles on flat tables with walls,
F. Ceragioli et alia (eds), Proceedings of the 22th IFIP-TC7
Conference on System Modelling and Optimization, Torino 2005,
IFIP Series, vol. 202, Springer, 2006, 127-137
18. E. Carlini, M. Falcone e R. Ferretti
A time-adaptive semi-Lagrangian approximation to mean curvature motion,
in Alfredo Bermudez de Castro, Dolores Gomez, Peregrina Quintela,
Pilar Salgado (eds), "Numerical Mathematics and Advanced Applications -
ENUMATH 2005", Springer 2006, 732-739.
19. E. Cristiani, M. Falcone
A Fast Marching Method for Pursuit-Evasion Games,
Proceedings SIMAI 2006, Baia Samuele, Ragusa (Italy), Maggio 22-26, 2006
20. E. Cristiani, M. Falcone, A. Seghini
Some Remarks on Perspective Shape-from-Shading models,
in F. Sgallari, A. Murli, N. Paragios (eds), Scale Space and Variational
Methods in Computer Vision, Lecture Notes in Computer Science, n. 4485,
2007, 276-287
ISBN 978-3-540-72822-1, DOI 10.1007/978-3-540-72823-8_24
21. E. Cristiani, M. Falcone
Numerical solution of the Isaacs equation for differential games
with state constraints, Proceedings of IFAC 2008, vol. 17, n. 1, Seul, 2008,
11352-11356
DOI 10.3182/20080706-5-KR-1001.01923
22. E. Cristiani, M. Falcone
Two fast marching methods for Hamilton-Jacobi equations, to appear on
in R. Jeltsch, G. Wanner (eds.) Proceedings of ICIAM 2007, 6th
International Congress on Industrial and Applied Mathematics, Zurich,
July, 2007
23. A. Alla, M. Falcone, D. Kalise
An accelerated value/policy iteration scheme for the solution of DP equations,
in A. Abdulle, S. Deparis, D. Kressner, F. Nobile, M. Picasso (eds.),
Numerical Mathematics and Advanced Applications, Proceedings of

24. M. Falcone, D. Kalise
A high-order semi-Lagrangian/finite volume scheme for Hamilton-Jacobi-Isaacs equations,
in C. Pötzsche, C., Heuberger, C., Kaltenbacher, B., Rendl, F. (eds.),
System Modeling and Optimization, CSMO 2013
IFIP Advances in Information and Communication Technology, vol. 443,
2014, pp. 105–117
DOI: 10.1007/978-3-662-45504-3_7
25. S. Cacace, E. Cristiani, M. Falcone
Two Semi-Lagrangian Fast Methods for Hamilton-Jacobi-Bellman Equations
in C. Pötzsche, C., Heuberger, C., Kaltenbacher, B., Rendl, F. (eds.),
System Modeling and Optimization, CSMO 2013
IFIP Advances in Information and Communication Technology, vol. 443,
2014, pp. 74–84.
DOI: 10.1007/978-3-662-45504-3_7
26. S. Tozza, M. Falcone
A semi-Lagrangian approximation of the Oren-Nayar PDE for the
orthographic Shape-from-Shading problem
VISAPP 2014 - Proceedings of the 9th International Conference on
Computer Vision Theory and Applications, 3, 2014, pp. 711-716
available on <http://www.scitepress.org> (electronic)
27. S. Bhattacharya, T. Basar, M. Falcone
Numerical approximation for a visibility based pursuit-evasion game,
in Proceedings of the IEEE Conference "Intelligent Robots and Systems
(IROS 2014)", IEEE, 2014, pp.68-75
WEB: ieeexplore.ieee.org
DOI [10.1109/IROS.2014.6942542](https://doi.org/10.1109/IROS.2014.6942542)
28. M. Falcone, D. Kalise, A. Kröner
A semi-Lagrangian scheme for L^p -penalized minimum time problems, in
Proceedings of the 21st International Symposium on Mathematical Theory of
Networks and Systems MTNS14, pp. 1798-1803.
29. M. Falcone, A. Seghini, Photos, objects and computer vision, *Imagine Math.*
3, 271-28, 2 Springer, 2015

30. A. Alla, M. Falcone, D. Kalise
A HJB-POD feedback synthesis approach for the wave equation, *Bull. Braz. Math. Soc.* 47 (1), 2016, 51-64

Edited Volumes and Journals Special Issues

1. M. Falcone, Ch. Makridakis (eds), "Numerical Methods for Viscosity Solutions and Applications", World Scientific, Singapore, 2002.
2. M. Falcone, R. Ferretti (eds), "Numerical methods for viscosity solutions and applications", Special issue of *Appl. Numer. Math.*, vol. 56 (2006).
3. M. Falcone, R. Ferretti, I.M. Mitchell, H. Zhao (eds), "Numerical methods for viscosity solutions and applications", Special issue of *Appl. Numer. Math.*, vol. 73 (2013).
4. L. Bonaventura, M. Falcone, R. Ferretti, Special issue on new trends in semi-Lagrangian methods, *Comm. Appl. Ind. Math*, 7 (2016), n. 3