Curriculum vitae of Delio Mugnolo

Name:	**Delio Mugnolo**
Born on:	September 11, 1978 in Bari, Italy
Nationality:	Italian
Affiliation:	Institute of Analysis, University of Ulm
Office address:	Helmholtzstraße 18, 89081 Ulm, Germany
Private address:	Maximilianstraße 34, 89231 Neu-Ulm, Germany
E-Mail:	`delio.mugnolo@uni-ulm.de`
Phone number:	+49-731-5023603
Family status:	unmarried, one daughter

Education and employment history

4/2011	Positive mid-term evaluation of the Junior Professorship
1/2011	***Habilitation* in Mathematics at the University of Ulm**
since 10/2008	**Junior Professor at the Institute of Analysis, University of Ulm**
10/2005 – 9/2008	Assistant lecturer at the Institute of Applied Analysis, University of Ulm, Germany
6/2004 – 9/2005	Post-Doc at the Mathematical Institute of the University of Bari, Italy
6/2004	***Promotion* (Ph.D.) in Mathematics at the University of Tübingen, Germany**
10/2002 – 7/2003	Reader at Baden-Württemberg Cooperative State University (BA) Horb, Germany
12/2000	*Laurea* (Master) in Mathematics (University of Bari, Italy)

Acquisition of research funds

2013	Financial support of ZiF – Center for Interdisciplinary Research – for the organisation of a conference in Bielefeld, Germany (€7,500)
since 7/2012	**Research grant of the Land Nordrhein-Westfalen for the organization of a Cooperation Group on "Discrete and continuous models in the theory of networks" (€100,000 for the period 2012-2015; joint with Fatihcan Atay and Pavel Kurasov)**
2011	Financial support of CIEM – International Centre for Mathematical meetings – for the organisation of a conference in Castro Urdiales, Spain (€8,500; joint with Jens Bolte, Olaf Post, Stefan Rotter)
2011	Research grant of DAAD – German academic exchange service – for a project on "Analytical and stochastical methods for partial differential equations on networks" (€10,000 for the period 2012-2013)
since 4/2011	**Research grant of the Land Baden-Württemberg for a project on "Symmetry methods in quantum graphs" in the framework of the *Juniorprofessorenprogramm* (approx. €145,000 for the period 2011-2014)**
9/2005 – 8/2006	Research grant of the University of Bari (€12,000)

Grants and honours

3–4/2009 and 3–4/2011	**Guest professorship at the University of Littoral Côte d'Opale, France**
since 10/2009	**Fellowship of the Young ZiF in Bielefeld, Germany**
3/2003	Grant of the DAAD – German academic exchange service – for a research stay at the ELTE Budapest
9/2001 – 6/2004	Grant of the INDAM – Italian institute for the higher mathematics – to complete doctoral studies in Tübingen, Germany

Research stays

11/2013	Royal Holloway, University of London, UK (invited by Jens Bolte)
5/2013	University of Salerno, Italy (invited by Abdelaziz Rhandi)
4/2013	University of Bari, Italy (invited by Silvia Romanelli)
2–3/2013	Institut Mittag-Leffler, Sweden (invited by Pavel Kurasov)
3/2009 and 3/2012	University of Valenciennes, France (invited by Serge Nicaise and Felix Ali Mehmeti)
11/2011	Isaac Newton Institute for Mathematical Sciences, Cambridge, UK (invited by Malcolm Brown)
5/2011	University of Zaragoza, Spain (invited by Pedro Miana)
3–4/2009 and 3–4/2011	University of Littoral Côte d'Opale, France (invited by Joachim von Below)
4/2010	Doppler Institute for Mathematical Physics and Applied Mathematics, Prague, Czech Republic (invited by Pavel Exner)
10/2005 and 3/2008	University of Trento, Italy (invited by Stefano Bonaccorsi and Mimmo Iannelli)
3–4/2007	Louisiana State University, Baton Rouge, USA (invited by Frank Neubrander)
3/2003	ELTE - Eötvös Loránd University Budapest, Hungary (invited by András Batkai)
3–5/2002	University of Memphis, USA (invited by Jerome A. Goldstein)

Organised meetings and workshops

12/2013	Conference on "Mathematical Technology of Networks"
9/2012	Conference on "Dynamical Systems on Random Graphs" (joint with Jens Bolte, Olaf Post and Stefan Rotter)
7/2010	Session on "Operator Theory on Graphs" in the framework of "IWOTA – 21st International Workshop on Operator Theory and Applications" (joint with Olaf Post)
7/2010	Conference on "Semigroups, Evolution Equations, and Boundary Conditions" (joint with Stefano Cardanobile and Rainer Nagel)
7/2009	"Interdisciplinary Workshop on Structure and Dynamics of Networks" (joint with Stefano Cardanobile, Günther Palm and Stefan Rotter)
1/2008	Interdisciplinary workshop on "Random, Growing, and Infinite Networks" (joint with Hans Kestler and Günther Palm)
10/2006	Conference on "Heat Kernels in Mathematics and Physics" (joint with Wolfgang Arendt and Frank Steiner)
4/2006	Interdisciplinary workshop on "Evolution on Networks" (joint with Wolfgang Arendt, Jens Bolte, Günther Palm and Jacobo Torán)

Selected invited lectures in the last four years

1/2014 (planned)	Talk at the conference "Analysis on Graphs" (Royal Holloway, University of London, UK)
10/2013	Talk at the conference "Semigroups of Operators: Theory and Applications" (Polish Academy of Sciences in Bedlewo, Poland)
9/2013	Talk at the conference "QMATH 12" (Berlin, Germany)
12/2013	Lecture at the University of Augsburg (Germany)
4/2013	Lecture at the University of Bari (Italy)
3/2013	Lecture at the University of Bergen (Norway)
3/2013	Lecture at the University of Stockholm (Sweden)
11/2012	Lecture at the University of Tübingen (Germany)
10/2012	Lecture at the Karlsruhe Institute of Technology (Germany)
9/2012	Talk at the conference "Asymptotic analysis and spectral theory on non-compact structures" (Mainz, Germany)
7/2012	Lecture at the Technical University of Dresden (Germany)
5/2012	Lecture at the University of Mainz (Germany)
3/2012	Lecture at the Max-Planck Institute for Mathematics in the Natural Sciences (Leipzig, Germany)
12/2011	Talk at the conference "Quantum graphs in Mathematics, Physics and Applications" (Stockholm, Sweden)
11/2011	Lecture at the Isaac Newton Institute for Mathematical Sciences (Cambridge, UK)
10/2011	Talk at the "8^{e} Journées Equations aux dérivées partielles" (Calais, France)
7/2011	Talk at the conference on "Evolution Equations and Operator Semigroups" (Bari, Italy)
5/2011	Talk at the conference on "Operator Theory and Boundary Value Problems" (Orsay, France)
4/2011	Lecture at the University of Jena (Germany)
3/2011	Lecture at the University of Valenciennes (France)
7/2010	Speaker at the "IWOTA – 21^{st} International Workshop on Operator Theory and Applications" (Berlin, Germany)
6/2010	Lecture at the University of Lille 1 (France)
5/2010	Talk at the "8^{th} AIMS International Conference on Dynamical Systems, Differential Equations and Applications" (Dresden, Germany)
4/2010	Lecture at the Charles University in Prague (Czech Republic)
4/2010	Colloquium at the Nuclear Physics Institute, The Academy of Sciences of the Czech Republic (Rež, Czech Republic)
3/2010	Colloquium at the Physikalisch–Technische Bundesanstalt, Braunschweig (Germany)

Scientific reviewing activity for

Mathematical Reviews, Zentralblatt der Mathematik Journal of Differential Equations, Journal of Evolution Equations, Annales Henri Poincaré, Discrete and Continuous Dynamical Systems, SIAM Journal on Discrete Mathematics, SIAM Journal on Control and Optimization, Journal of Mathematical Analysis and Applications, Nonlinear Analysis A: Theory, Methods & Applications, Semigroup Forum, Network and Heterogeneous Media, Applied Mathematics and Optimization, Neurocomputing, Journal of Spectral Theory, Applicationes Mathematicae, Operators and Matrices, Revista Matemática Complutense, Rendiconti dell'Istituto di Matematica dell'Università di Trieste, Results in Mathematics, Electronic Journal of Differential Equations, Nanosystyems: Physics, Chemistry, Mathematics, Jaén Journal on Approximations, Boundary Value Problems, Analysis, Mathematical Problems in Engineering, Acta Applicanda Mathematicae, Applied Mathematics Letters, International Journal of Mathematics and Mathematical Sciences and several proceedings

Publications by Delio Mugnolo

Books

(B2) *Mathematical Technology of Networks (Proc. Bielefeld 2013)* (editor), Springer Proceedings in Mathematics & Statistics, Springer-Verlag, New York (in preparation)

(B1) *Semigroup methods for evolution equations on networks*, Understanding Complex Systems, Springer-Verlag, Berlin (to appear; a preliminary version can be downloaded from my homepage)

Journals

(J27) *On moments-preserving cosine families and semigroups in $C[0,1]$*, J. Evol. Equations **4** (2013), 715–735 (joint with A. Bobrowski)

(J26) *The spectrum of the Hilbert space valued second derivative with general self-adjoint boundary conditions*, Lin. Alg. Appl. **439** (2013), 1792–1814 (joint with J. von Below)

(J25) *Diffusion processes on an interval under linear moment conditions*, Semigroup Forum (2013), DOI 10.1007/s00233-013-9552-1 (joint with S. Nicaise)

(J24) *Quantum graphs with mixed dynamics: the transport/diffusion case*, J. Phys. A **46** (2013), 235202 (joint with A. Hussein)

(J23) *Parabolic theory of the discrete p-Laplace operator*, Nonlinear Analysis: Theory, Methods and Appl. **87** (2013), 33–60

(J22) *Convergence of sectorial operators on varying Hilbert spaces*, Oper. and Matrices (joint with R. Nittka, O. Post; in press; as a preprint on `arXiv:1007.3932`)

(J21) *Convergence of operator semigroups associated with generalised elliptic forms*, J. Evol. Equations **12** (2012), 593–619 (joint with R. Nittka)

(J20) *Gradient systems on networks*, Disc. Cont. Dyn. Syst. S (2011), 1078–1090 (joint with R. Pröpper)

(J19) *On the domain of a Fleming–Viot type operator on an L^p-space with invariant measure*, Note di Mat. **31** (2011), 139–148 (joint with A. Rhandi)

(J18) *Damped wave equations with dynamical boundary conditions*, J. Appl. Analysis **17** (2011), 241–275

(J17) *Properties of representations of operators acting between spaces of vector-valued functions*, Positivity **15** (2011), 135–154 (joint with R. Nittka)

(J16) *Vector-valued heat equations and networks with coupled dynamic boundary conditions*, Adv. Diff. Equations **15** (2010), 1125–1160

(J15) *Existence of strong solutions for neuronal network dynamics driven by fractional Brownian motions*, Stoch. Dyn. **10** (2010), 441–464 (joint with S. Bonaccorsi)

(J14) *Towards a gauge theory for evolution equations on vector-valued spaces*, J. Math. Phys. **50** (2009), 103520 (joint with S. Cardanobile)

(J13) *Parabolic systems with coupled boundary conditions*, J. Differ. Equ. **247** (2009), 1229–1248 (joint with S. Cardanobile)

(J12) *Well-posedness and symmetries of strongly coupled network equations*, J. Phys. A **41** (2008) 055102 (joint with S. Cardanobile, R. Nittka)

(J11) *Qualitative properties of parabolic systems of evolution equations*, Ann. Sc. Norm. Super. Pisa, Cl. Sci., V. Ser. **VII** (2008), 287–312 (joint with S. Cardanobile)

(J10) *Analysis of a FitzHugh-Nagumo-Rall model of a neuronal network*, Math. Meth. Appl. Sci. **30** (2007), 2281–2308 (joint with S. Cardanobile)

(J9) *Dynamic and generalized Wentzell node conditions for network equations*, Math. Meth. Appli. Sci. **30** (2007), 681–706 (joint with S. Romanelli)

(J8) *Gaussian estimates for a heat equation on a network*, Netw. Heter. Media **2** (2007), 55–79

(J7) *Variational and semigroup methods for waves and diffusion in networks*, Appl. Math. Optim. **55** (2007), 219–240 (joint with M. Kramar Fijavž, E. Sikolya)

(J6) *Dirichlet forms for general Wentzell boundary conditions, analytic semigroups, and cosine operator functions*, Electr. J. Diff. Eq. **118** (2006), 1–20 (joint with S. Romanelli)

(J5) *Matrix methods for wave equations*, Math. Z. **253** (2006), 667–680

(J4) *Operator matrices as generators of cosine operator functions*, Int. Eq. Oper. Theory **54** (2006), 441–464

(J3) *Abstract wave equations with acoustic boundary conditions*, Math. Nachr. **279** (2006), 299–318

(J2) *A semigroup analogue of the Fonf–Lin–Wojtaszczyk ergodic characterization of reflexive Banach spaces with a basis*, Studia Math. **164** (2004), 243–251

(J1) *Theory and applications of one-sided coupled operator matrices*, Conf. Semin. Matem. Univ. Bari **283** (2003), 1–29 (joint with M. Kramar, R. Nagel)

Refereed proceedings

(R3) *A Frucht's theorem for quantum graphs*, in: W. Arendt et al. (eds.): Spectral Theory, Mathematical System Theory, Evolution Equations, Differential and Difference Equations, Birkhäuser, Basel, 2012, 499–508

(R2) *A variational approach to damped wave equations*, in H. Amann et al. (eds.): Functional Analysis and Evolution Equations, Birkhäuser, Basel, 2008, 503–514

(R1) *Semigroups for initial boundary value problems*, in: M. Iannelli, G. Lumer (eds.): Evolution Equations 2000: Applications to Physics, Industry, Life Sciences and Economics (Proceedings Levico Terme 2000), Progress in Nonlinear Differential Equations **55**, Birkhäuser, Basel, 2003, 276–292 (joint with M. Kramar, R. Nagel)

Book contributions

(C4) *Symmetries in quantum graphs*, in W. Arendt, W. Schleich (eds.): Mathematical Analysis of Evolution, Information and Complexity, Wiley-VCH, Weinheim, 2009, 181–196 (joint with J. Bolte, S. Cardanobile, R. Nittka)

(C3) *Relating simulation and modelling of neural networks*, in W. Arendt, W. Schleich (eds.): Mathematical Analysis of Evolution, Information and Complexity, Wiley-VCH, Weinheim, 2009, 137–155 (joint with S. Cardanobile, H. Markert, G. Palm, F. Schwenkert)

(C2) *Investigation of input-output gain in dynamical systems for neural information processing*, in W. Arendt, W. Schleich (eds.): Mathematical Analysis of Evolution, Information and Complexity, Wiley-VCH, Weinheim, 2009, 379–393 (joint with S. Cardanobile, M. Cohen, S. Corchs, H. Neumann)

(C1) *Milestones of evolution, information and complexity*, in W. Arendt, W. Schleich (eds.): Mathematical Analysis of Evolution, Information and Complexity, Wiley-VCH, Weinheim, 2009, XXIII–XXIX (joint with W. Arendt, W. Schleich)

Submitted

(S4) *Construction of exact travelling waves for the Benjamin–Bona–Mahony equation on networks* (joint with J.-F. Rault; submitted; `arXiv:1302.2104`)

(S3) *The heat equation under linear conditions on the moments in higher dimensions* (joint with S. Nicaise; submitted; `arXiv:1302.5529`)

(S2) *Well-posedness and spectral properties of heat and wave equations with non-local conditions*, J. Differ. Equ. (joint with S. Nicaise; submitted; `arXiv:1112.0415`)

(S1) *Asymptotics of semigroups generated by operator matrices* (arXiv:0801.1963)

Master's, doctoral and habilitation theses

(T3) *Parabolic Systems and Evolution Equations on Networks*, Habilitation thesis at the University of Ulm, Germany, 2010

(T2) *Second Order Abstract Initial-Boundary Value Problems*, Ph.D. thesis at the University of Tübingen, Germany, 2004

(T1) *Semigruppi di Operatori Non Lineari e Problemi di Cauchy Astratti*, Master's thesis at the University of Bari, Italy, 2000

Teaching activities of Delio Mugnolo

Universität Ulm	Master's lectures *Differenzialgleichungen auf verzweigten Strukturen* (2013/14) *Funktionalanalysis* (2011/12) *Lineare Evolutionsgleichungen* (2011) *Partielle Differenzialgleichungen* (2010/11) *Dynamische Systeme* (2010, with Wolfgang Arendt and Günther Palm) *Graphentheorie* (2008/09) Bachelor's lectures *Elemente der Funktionentheorie* (2013) *Analysis 2* (2012/13) *Analysis 1* (2012) *Lineare Optimierung und Differenzialgleichungen für Ökonomen* (2009/10) *Elemente der Funktionalanalysis* (2009) *Analysis für Informatiker* (2008) Seminars *Spektraltheorie* (2013/14, with Anna Dall'Acqua) *Analytische Theorie der Kurven and Flächen* (2013) *Elementare Topologie* (2012/13) *Funktionalanalysis auf Graphen* (2011/12) *Mathematische Modellierung in den Naturwissenschaften* (2011/12) *Positive Matrizen* (2011) *Zufällige Netzwerke* (2010/11, with Zakhar Kabluchko, Volker Schmidt and Evgeny Spodarev) *Dynamische Systeme* (2009) *Evolutionsgleichungen auf Graphen* (2009/10, with Wolfgang Arendt) *Fixpunktsätze* (2009, with Friedmar Schulz) *Funktionalanalysis* (2006, with Wolfgang Arendt) *Wärmekerne* (2005/06, with Wolfgang Arendt)
Karlsruhe Institute of Technology	Short lecture series *Differential operators on graphs* (November 2013)
Università degli Studi di Bari	Short lecture series *Teorema spettrale e applicazioni* (April 2013)
Louisiana State University	Lehrbeauftragter für die Kompaktvorlesung *Evolution on Networks* (March 2007)
TULKA Internet Seminar	Student projects *Further semigroup methods for control systems* (2011) *Gradient Systems on Networks* (2010) *The Szemerédi Regularity Lemma* (2009) *Parabolic Equations on Networks* (2006) *Wave Equations with Acoustic Boundary Conditions* (2003)
Berufsakademie Stuttgart (Branch in Horb)	Bachelor's lectures *Analysis 2* (2003) *Analysis 1* (2002/03)

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BADEN-WÜRTTEMBERG

URKUNDE

Ich ernenne

Herrn Dr. Delio Mugnolo

mit Wirkung vom 1. Oktober 2011

unter Berufung in das Beamtenverhältnis
auf Zeit

bis 30. September 2014

zum

Professor als Juniorprofessor.

Ulm, 18. April 2011

UNIVERSITÄT ULM

Professor Dr. K.-J. Ebeling
Präsident

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UNIVERSITÄT ULM

DIE FAKULTÄT FÜR MATHEMATIK UND WIRTSCHAFTSWISSENSCHAFTEN

verleiht
unter der Präsidentschaft
des Universitätsprofessors für Optoelektronik
Dr. rer. nat. Karl-Joachim Ebeling
und
unter dem Dekanat
des Universitätsprofessors für Mathematik
Dr. rer. nat. Werner Kratz

Herrn Dr. rer. nat. Delio Mugnolo
geboren am 11. September 1978 in Bari/Italien

aufgrund

seiner wissenschaftlichen Publikationen, zusammengefasst unter dem Titel „Parabolic systems and evolution equations on networks“

und einer studiengangbezogenen Lehrveranstaltung

„Partielle Differenzialgleichungen“

zum Nachweis der pädagogisch-didaktischen Eignung

sowie

eines Habilitationsvortrages vor der Fakultät für Mathematik und Wirtschaftswissenschaften mit dem Thema

„Färbungstheorie“

die

LEHRBEFUGNIS FÜR DAS FACH MATHEMATIK.

Er ist berechtigt, die Bezeichnung

Privatdozent

zu führen.

Ulm, den 12. Januar 2011

DER PRÄSIDENT

UNIVERSITÄT ULM 115

DER DEKAN

EBERHARD KARLS
UNIVERSITÄT
TÜBINGEN

Die Fakultät für Mathematik und Physik

verleiht durch diese mit dem Siegel der Universität versehene
von Rektor und Dekan unterschriebene Urkunde

Herrn Delio Mugnolo

geboren am 11. September 1978 in Bari

den akademischen Grad

Doktor der Naturwissenschaften

Herr Mugnolo hat durch die mit „sehr gut" beurteilte Dissertation

„Second order abstract initial-boundary value problems"

sowie durch die mündlichen Prüfungen mit dem Hauptfach
Mathematik am 24. Juni 2004 seine wissenschaftliche
Befähigung erwiesen und dabei das

Gesamturteil „sehr gut" (magna cum laude)

erhalten.

Tübingen, den 25. Juni 2004

Der Rektor

Der Dekan

Cat. 31

UNIVERSITÀ DEGLI STUDI DI BARI

AREA SEGRETERIE STUDENTI
SEGRETERIA DELLA FACOLTA' DI
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SI ATTESTA CHE DAGLI ATTI ESISTENTI PRESSO QUESTA SEGRETERIA, RISULTA CHE IL SIG.

MUGNOLO DELIO
NATO IL 11/09/1978 A BARI (BA)

HA SUPERATO PRESSO QUESTA UNIVERSITA' IN DATA 15/12/2000
L'ESAME DI LAUREA IN
MATEMATICA (N.O).
INDIRIZZO: GENERALE
CON VOTI 110 / 110 E LODE (CENTODIECI SU CENTODIECI E LODE).

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BARI 30/04/2001

F.TO IL CAPO SETTORE
SIG.RA L. ANGELILLO

F.TO DR. F. DI TERLIZZI
IL DIRETTORE DELL' AREA

CERTIFICATO SENZA FIRMA AUTOGRAFA, SOSTITUITA DALL'INDICAZIONE DEL NOMINATIVO DEL RESPONSABILE, AI SENSI DELL'ART. 3 DEL DECRETO LEGISLATIVO 12-2-93, N.39.

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