Curriculum Vitae of Anton Thalmaier

Professional Address

University of Luxembourg
Department of Mathematics
L–4364 Esch-sur-Alzette
Luxembourg

Phone: (+352) 46 66 44 6238
Fax: (+352) 46 66 44 3 6238
anton.thalmaier@uni.lu
http://math.uni.lu/thalmaier

Personal Address

141, rue de Hamm
L–1713 Luxembourg

Mobile: (+352) 691 130 043

Nationality German
Family status married, one child

Degrees

Ph.D. in Mathematics, University of Regensburg, 1989

Habilitation and "Venia legendi" in Mathematics, University of Bonn, 1999

Qualification aux fonctions de professeur d'Université (section 25 mathématiques, section 26 mathématiques appliquées, janvier 2001, Conseil National des Universités, Ministère de l'Education Nationale et de la Recherche, France)

Work Experience

1989 – 1993	Instructor, R.H. Bing Fellow, University of Texas at Austin, USA
1993 – 1996	Wissenschaftlicher Assistent, University of Regensburg
1997	Wissenschaftlicher Angestellter, University of Erlangen-Nürnberg
1997 – 2000	Wissenschaftlicher Mitarbeiter (DFG), University of Bonn
2000 – 2001	Lehrstuhlvertretung (C4), University of Regensburg
2001 – 2002	Wissenschaftlicher Angestellter (SFB), University of Bonn
2002 – 2003	Enseignant Associé, Université d'Evry
2003 – 2006	Maître de Conférence, Université de Poitiers
2006 – 2021	Full professor, Université du Luxembourg
2021 – 2024	Senior professor, Université du Luxembourg
since 10/2024	Professor Emeritus, Université du Luxembourg

Research Profile

Stochastic Analysis on manifolds, Stochastic Differential Geometry, Geometry of Stochastic Differential Equations, Stochastic Riemannian Geometry (also in infinite dimensions), Mathematical Finance

An essential part of my research is related to the fact that Brownian motion and martingales on manifolds or vector bundles connect local and global geometry in an intrinsic way, and that many questions related to the geometry of Laplace operators have a direct probabilistic counterpart. Probabilistic methods often extend naturally to areas, like singular spaces or infinite dimensional spaces, where standard tools of differential analysis or PDE methods fall short.

International collaborations

Hélène Airault, Professeur à l'Université de Picardie, France;
Marc Arnaudon, Professeur à l'Université de Bordeaux, France;
Fabrice Baudoin, Professor at Aarhus University, Denmark;
Li-Juan Cheng, Associate Professor at Hangzhou Normal University, China;
Ana Bela Cruzeiro, Professeur à l'Université de Lisboa, Portugal;
Bruce Driver, Professor at the University of California at San Diego, USA;
Shizan Fang, Professeur à l'Université de Bourgogne, France;
Erlend Grong, Associate Professor at the University of Bergen, Norway;
Batu Güneysu, Professor at Chemnitz University, Germany;
Hongxin Guo, Professor at Wenzhou University, Zhejiang, China;
Elton P. Hsu, Professor at Northwestern University, USA;
Xue-Mei Li, Professor at EPF Lausanne, Switzerland;
Robert Neel, Associate Professor at Lehigh University, USA;
Feng-Yu Wang, Professor at Tianjin University, China;
Qi S. Zhang, Professor at University of California Riverside, USA

Research Stays (since 2001)

Sept 2001	Mathematics Department, Beijing Normal University (1 month)
March 2002	Université de Poitiers, Professeur invité (1 month)
May 2002	University of California at San Diego (2 weeks)
June 2002	Université de Picardie, Professeur invité (1 month)
May 2005	Beijing Normal University (3 weeks)
June 2006	Nagu/Nauvo and University of Jyväskylä (2 weeks)
March 2007	Beijing Normal University (2 weeks)
May/June 09	Bangalore, India (3 weeks)
June 2010	Université de Bourgogne, Professeur invité (1 month)
June/Sept 2018	South Central University, Wuhan, China (1 month)

Funding

- GEOMREV - Geometry of random evolutions (Open FNR, 2015-2019), € 500.000
- GEOM-SDE - Geometry of Stochastic Differential Equations (PUL, 2008-2011), € 328.238
- GEOM-SDE12 - Geometry of Stochastic Differential Equations (PUL, 2012-2015), € 368.538
- AGSDE - Analysis and Geometry of Stochastic Differential Equations (PUL, 2015-2018), € 269.500

PhD students

Holger Plank *Stochastic Representation of the Gradient and Hessian of Diffusion Semigroups on Riemannian Manifolds*, University of Regensburg (Dec 2002)

Stephanie Ulsamer, *Non-trivial Bounded Harmonic Functions on Cartan-Hadamard Manifolds of Unbounded Curvature*, University of Regensburg (Dec 2003)

Abdoulaye Coulibaly, *Etude d'équations d'évolution non linéaires en géométrie globale avec des méthodes de calcul stochastique*, Université de Poitiers (June 2009)

Christian Selinger, *Geometry and Stochastic Calculus on Wasserstein spaces*, Université du Luxembourg (Nov 2010)

Sami El Rahouli, *Financial modeling with Volterra Lévy processes and application to option pricing, interest rates and credit risk modeling*, Université du Luxembourg (Febr 2014)

Antoine Ledent, *Kusuoka-Stroock type bounds for densities of solutions to SDE projected on a low dimensional space*, Université du Luxembourg (Sept 2017)

Christian Krein, *Contributions to the statistics of random processes using Malliavin Calculus*, joint supervision with G. Peccati, Université du Luxembourg (Nov 2017)

Bob Pepin, *Time averages of diffusion processes and applications to two-time-scale problems*, Université du Luxembourg (April 2018)

Robert Baumgarth, *Scattering theory for the Hodge-Laplacian*, Université du Luxembourg (Jan 2021)

Administrative activities

Membre de la Commission de Spécialistes 25/26ème sections de l'Université de Poitiers (2004-06) ; Membre extérieur de la Commission de Spécialistes 25/26ème sections de l'Université d'Angers (2005-06)

Member of the Faculty Council (FSTC), University of Luxembourg (2014-24)

Directeur-Adjoint des Études du "Master en Mathématiques (académique)", filière "Mathématiques financières", Université du Luxembourg (2009-21)

Study Director of the program "Master in Mathematics", Université du Luxembourg (2020-21)

Awards

Grand Prix 2021 en Sciences mathématiques de l'Institut Grand-Ducal – Prix de la Bourse de Luxembourg

Member honoraire de la "Section des Sciences naturelles, physiques et mathématiques de l'Institut Grand-Ducal"

Scholarship of the Studienstiftung des Deutschen Volks

"Kulturpreis Ostbayern" for outstanding dissertation

Organisation of Conferences

Organisation of a Mini-Symposium (with Shizan Fang and A. Grigor'yan): *Geometry and Probability* (DMV-Jahrestagung Bonn, Sept 17–23, 2006)

Organisation of a Special Session on "Stochastic Analysis" at the 1st Joint Conference of the Belgian, Royal Spanish and Luxembourg Mathematical Societies (June 6-8, 2012), Liège, Belgium

Organisation of a Conference on the Occasion of Martin Schlichenmaier's 60th Birthday (December 10–12, 2012), University of Luxembourg.

Organisation of the International Conference "ANR ProbaGeo 2013" in Luxembourg (Oct 28–31, 2013), University of Luxembourg

Organisation of a Thematic Session on *Stochastic Calculus in Mathematical Finance* at the XIII Latin American Congress of Probability and Mathematical Statistics (Cartagena, Colombia 2014)

Organisation of the International Conference "GeoProb 2017" in Luxembourg (July 10–14, 2017), University of Luxembourg

Organisation of a Mini-Workshop (with Batu Güneysu, Matthias Keller and Kazumasa Kuwada): *Recent Progress in Path Integration on Graphs and Manifolds* (Mathematisches Forschungsinstitut Oberwolfach, April 7–13, 2019)

Selected invited Lectures

1988 Geyer-Harder Arbeitsgemeinschaft Oberwolfach (2–8 Oct 1988), Brownsche Bewegung auf Riemannschen Mannigfaltigkeiten (Organizers: C. Deninger, A. Thalmaier)

1989 Kolloquium (10 Jan 1989), Arbeitsgruppe Stochastische Analysis, Universität Erlangen-Nürnberg, Germany

1989 Colloquium (12 Oct 1989), University of Texas at Austin, USA

1990 AMS Meeting (16–17 March 1990), Kansas State University, Missouri, USA

1990 Colloquium (22 Nov 1990), Département de Mathématiques, Université Louis Pasteur, Strasbourg, France

1992 Workshop on Stochastic Analysis and Geometry (6–10 April 1992), Bonn, Germany

1993 Six International Vilnius Conference on Probability Theory and Mathematical Statistics (28 June – 3 July 1993), Vilnius, Lithuania

1994 Workshop on Stochastic Analysis (4–5 Febr 1994), Mathematisches Institut, Universität Erlangen-Nürnberg, Germany

1995 European/Gregynog Stochastic Analysis Symposium (9–14 July 1995), Gregynog, Wales, U.K.

1995 Conference on Stochastic Differential Geometry and Stochastic Analysis (24 July – 5 August 1995), Mathematics Research Centre, University of Warwick, U.K.

1996 International Conference on Stochastic Differential Geometry and Infinite Dimensional Analysis (8–12 April 1996), Zhejiang University, Hangzhou, China

1996 Workshop on Dirichlet Forms and Stochastic Differential Geometry (8–10 May 1996), Universität Bonn, Germany

1996 Bayerisches Mathematisches Kolloquium (16–18 May 1996), Passau, Germany

1996 Colloquium (31 May 1996), Département de Mathématiques, Université de Provence, Marseille, France

1996 Symposium on "Equationes Différentielles Stochastiques Rétrogrades et applications" (3–4 June 1996), Université du Maine, Le Mans, France

1996 Stochastic Analysis, Random Fields and Applications (16–21 Sept 1996), Centro Stefano Franscini, Ascona, Switzerland

1997 International Conference on Stochastic and Global Analysis (13–19 Jan 1997), Voronezh State University, Russia

1997 Séminaire Calcul stochastique (28 April 1997), Institut de Recherche Mathématique Avancée, Université Louis Pasteur et CNRS, Strasbourg, France

1997 Euroconference on "Dirichlet Forms and Their Applications in Geometry and Stochastics" (22–28 June 1997), Anogia, Crete, Greece

1998 DFG-Schwerpunktskolloquium "Interagierende stochastische Systeme von hoher Komplexität" (8–11 Febr 1998), Weierstrass-Institut (WIAS), Berlin, Germany

1998 Geometric Stochastic Analysis and Fine Properties of Stochastic Processes (23–27 March 1998), Mathematical Sciences Research Institute, Berkeley, USA

1998 Colloquium (30 April 1998), Mathématiques Appliquées, Université de Blaise Pascal, Clermont-Ferrand, France

1998 Mathematisches Kolloquium (19 June 1998), Mathematische Fakultät, Universität Freiburg, Germany

1998 7th Vilnius Conference on Probability Theory and Mathematical Statistics (12–18 Aug, 1998), Vilnius, Lithuania

1998 Workshop on "Infinite-dimensional Stochastic Dynamics" (21–24 Sept 1998), Jena, Germany

1999 NRW-Kolloquium über Mathematische Statistik (Stochastik) (17–18 Febr 1999), Mathematisches Institut, Universität Düsseldorf, Germany

1999 DMV Jahrestagung (5–11 Sept 1999), Johannes Gutenberg-Universität in Mainz, Germany

1999 Conference on "Probability and Geometry" (20–25 Sept 1999), Institut Elie Cartan — Université Henri Poincaré, Nancy, France

2000 Oberwolfach-Tagung "Geometric Stochastic Analysis" (13–19 Febr 2000), Germany

2000 12th Winter School on Stochastic Processes (27 Febr – 4 March 2000) Siegmundsburg, Germany

2000 SFB Kolloquium (18 April, 2000), Fakultät für Mathematik, Ruhr-Universität Bochum, Germany

2001 Stochastic Analysis: Geometric Aspects and Applications (8 – 11 Jan 2001), EURANDOM, Eindhoven, The Netherlands

2001 Mathematisches Kolloquium (2 Febr 2001), Mathematische Fakultät, Universität Regensburg, Germany

2001 Laboratoire de Probabilités et Modèles Aléatoires (5 April 2001), Université Paris 6, Pierre et Marie Curie, France

2001 International Conference "Probability and Geometry" (10 – 15 Sept 2001), Université de Bourgogne, Dijon, France

2001 Colloquium (26 Sept 2001), Department of Mathematics, Beijing Normal University, Beijing, China

2001 Colloquium (27 Sept 2001), Institute of Mathematics, Chinese Academy of Sciences, Beijing, China

2001 International Conference "Analyse en dimension infinie" (8 – 12 Oct 2001), C.I.R.M. Luminy, France

2002 Séminaire tournant "Martingales et leurs applications récentes" (11 March 2002), Université d'Angers, France

2002 Colloquium (14 March 2002), Laboratoire de Mathématiques, Université de Poitiers, France

2002 Séminaire (14 May 2002), Trimester programme: *Noyaux de la chaleur, marches aléatoires, analyse sur les variétés et les graphes*, Institut Henry Poincaré, Paris, France

2002 Colloquium (23 May 2002), Department of Mathematics, University of California at San Diego, USA

2002 Berliner Kolloquium Wahrscheinlichkeitstheorie (3 July 2002) Humboldt University, Berlin, Germany

2002 International Conference on Stochastic Analysis – Satellite Conference of ICM 2002 (Aug 29 – Sept 3, 2002), Beijing, China

2002 Colloque (14 Nov 2002), Département de Mathématiques, Université d'Evry, France

2002 Rencontres Evry-Nancy-Strasbourg de Probabilités, (12–13 Dec 2002), Institut Elie Cartan — Université Henri Poincaré, Nancy, France

2003 Session de Printemps du G.D.R "Inégalités géometriques : Approches stochastiques et géometriques" (13–15 Mars 2003), Université de Blaise Pascal, Clermont-Ferrand, France

2003 Colloque tournant des Probabilités (17 Nov 2003), Université d'Angers, France

2004 Séminaire "Equations aux Dérivées Partielles" (25 Nov 2004), Séminaire "Analyse, Géométrie et Algèbre" (26 Nov 2004), Laboratoire de Mathématiques, Université de Metz, France

2005 International Conference "Flots aléatoires" (18 – 22 Apr 2005), C.I.R.M. Luminy, France

2005 Colloquium (27 May 2005), Department of Mathematics, Beijing Normal University, Beijing, China

2005 Colloquium (1 June 2005), Institute of Mathematics, Chinese Academy of Sciences, Beijing, China

2005 2nd Joint Meeting of AMS, DMV and ÖMG 2005 Session "Stochastic Analysis on Metric Spaces" (16 – 19 June 2005) Mainz, Germany

2005 Journées de Probabilités (4 – 9 Sept 2005) Institut Elie Cartan — Université Henri Poincaré, Nancy, France

2005 Workshop on Stochastic Analysis and Computational Finance (10 – 12 Nov 2005), Imperial College London, U.K.

2005 Oberwolfach-Tagung " Heat Kernels, Stochastic Processes and Functional Inequalities" (27 Nov – 3 Dec 2005), Germany

2006 Berliner Kolloquium Wahrscheinlichkeitstheorie (1 Febr 2006), Technische Universität Berlin, Germany

2006 Colloquium (6 March 2006), Institut Camille Jordan, Université Claude Bernard Lyon 1, France

2006 The 28th Finnish Summer School on Probability Theory (June 5 – June 9, 2006), Nagu/Nauvo, Finland

2006 Colloquium (13 June 2006), Department of Mathematics and Statistics, University of Jyväskylä, Finland

2006 Colloquium (22 June 2006), Statistical Laboratory, Centre for Mathematical Sciences, University of Cambridge, UK

2006 31st Conference on Stochastic Processes and their Applications (July 17 – 21, 2006), University Paris 5, France

2006 8th Collogue interregional de mathématiques (Oct 12 – 13, 2006), Universität Trier, Germany

2007 Séminaire de Probabilités (Febr 1, 2007), Laboratoire de Mathématiques, Université de Poitiers, France

2007 Séminaire Calcul stochastique (Febr 5, 2007), Institut de Recherche Mathématique Avancée, Université Louis Pasteur, Strasbourg, France

2007 Colloquium (17 April 2007), Department of Mathematics, Beijing Normal University, Beijing, China

2007 Kolloquium (22 Juni 2007), Mathematische Fakultät der Universität Saarbrücken, Germany

2007 Conference on "Innovations in Mathematical Finance" (25 June – 1 July) Loen, Norway

2007 East Midlands Stochastic Analysis Seminars (31 Aug 2007), Warwick Mathematics Institute, University of Warwick, Great Britain

2007 International Workshop "Stochastic calculus on manifolds, graphs, and random structures" (Oct 8 – 12, 2007), Hausdorff Research Institute for Mathematics, University of Bonn, Germany

2007 International Conference on Stochastic Analysis and Applications (Nov 5-10, 2007), Hammamet, Tunisia

2007 Séminaire de Probabilités (Nov 15, 2007) Institut Élie Cartan Nancy, Université Henri Poincaré Nancy, France

2007 Infinite Dimensional Analysis and Representation Theory (Dec 10 – 14, 2007) Fakultät für Mathematik, Universität Bielefeld, Germany

2008 Colloquium (7 March 2008), Warwick Mathematics Institute, University of Warwick, UK

2008 60th British Mathematical Colloquium (March 25 – 28, 2008), University of York, UK

2008 International conference "Glimpses of Geometry" (May 15 – 17, 2008) ENS Lyon, France

2008 First MSJ-SI (Mathematical Society of Japan, Seasonal Institute) "Probabilistic Approach to Geometry" (July 28 – Aug 8, 2008) Kyoto University, Kyoto, Japan

2008 International Conference on Complex Analysis and Related Topics "The 11th Romanian – Finnish Seminar" (Aug 14 – 19, 2008) Alba Iulia, Romania

2008 Rencontres Franco-Chinoises en probabilités et analyse (Sept 8 – 12, 2008) C.I.R.M. Luminy, France

2009 Probability Colloquium (Apr 24, 2009), Department of Mathematics, University of Swansea, UK

2009 Conference in Analysis and its Applications, IISc Bangalore (May 25 – 27, 2009), India

2009 Workshop on "Boundaries" (June 28 – July 3, 2009), Graz University of Technology, Austria

2009 Interregional Colloquium in Mathematics (Oct 23 – 24, 2009), Universität des Saarlands, Saarbrücken, Germany

2010 Oberseminar Stochastik (March 4, 2010), Institute of Applied Mathematics, University of Bonn, Germany

2010 Chinese-German Meeting on Stochastic Analysis and Related Fields (May 3 – 7, 2010), Academy of Mathematics and Systems Science, Beijing, China

2010 Stochastic Partial Differential Equations (31 May – 4 June, 2010). Isaac Newton Institute for Mathematical Sciences, Satellite Meeting at the University of York, UK

2010 Journées de Probabilités 2010 (21 – 25 juin, 2010), Institut de Mathématiques, Université de Bourgogne, Dijon, France

2010 Workshop on Advanced Mathematical Methods for Finance (Sept 27 – 30, 2010), Berlin, Germany

2010 Conference in Memory of Paul Malliavin (Oct 4 – 6, 2010), Institut de Mathématiques, Université de Bourgogne, Dijon, France

2010 International Conference on Applied Mathematics and Informatics (Nov 28 – Dec 3, 2010), San Andres Island, Colombia

2011 Mathematical Seminar (April 29, 2011), Beijing Normal University, China

2011 Geometric Stochastic Partial Differential Equations (May 5-7, 2011), School of Mathematics and Statistics, University of New South Wales, Sydney, Australia

2011 Malliavin Calculus and Computational Finance (26-28 July, 2011), Universidad de los Andes, Bogotá, Colombia

2011 Conference "Taller de Matemáticas Financieras y Finanzas Computacionales" (July 26–28, 2011), Universidad de los Andes, Bogotá, Colombia

2011 Mathematical Seminar (Aug 3, 2011), Facultad de Ciencias, Universidad Nacional de Colombia, Bogotá, Colombia

2011 Mathematical Colloquium (Aug 4, 2011), Universidad de los Andes, Bogotá, Colombia

2011 5th International Conference on Stochastic Analysis and its Applications (Sept 5–9, 2011), Hausdorff Center of Mathematics, University of Bonn, Germany

2011 Mathematical Seminar (Nov 7, 2011), Department of Mathematics and Oxford-Man Institute, University of Oxford, UK

2012 Harmonic and Complex Analysis and its Applications HCAA 2012 (March 5–9, 2012), Puerto de la Cruz, Tenerife, Canary Islands.

2012 Mathematical Analysis Seminar (April 3, 2012), University of Bergen, Norway.

2012 EPSRC Symposium Workshop – Stochastic Analysis and Stochastic PDEs (April 16–20, 2012) Mathematics Institute, University of Warwick, UK.

2012 Mathematics Seminar (June 15, 2012), Université Paris-Sud/Orsay, France

2012 Conférence en l'honneur d'Yves Le Jan (Sept 6–7, 2012), ENS de Paris, France

2013 Workshop: Heat Kernels, Stochastic Processes and Functional Inequalities (5–11 May, 2013), Mathematisches Forschungsinstitut Oberwolfach, Germany

2013 Workshop: Stochastic Differential Geometry (29–31 May 2013), Lebesgue Center of Mathematics, Rennes, France

2013 Dirichlet Forms and Applications – German-Japanese Meeting on Stochastic Analysis (9–13 Sept 2013), Mathematisches Institut der Universität Leipzig, Germany

2013 Workshop on Geometric aspects in probability and analysis (Sept 14, 2013), Mathematisches Institut, Friedrich-Schiller-Universität Jena, Germany

2014 AMSI/AustMS Conference on Geometric Analysis and Stochastic Methods in Geometry (July 21–25, 2014), The University of Queensland, Brisbane, QLD, Australia

2014 Maths Colloquium (July 28, 2014), The University of Queensland, Brisbane, QLD, Australia

2015 New Trends in Optimal Transport (March 2–6, 2015), Hausdorff Center for Mathematics, University of Bonn, Germany

2015 Mathematics Seminar (April 21, 2015), Beijing Normal University, China

2015 Probability Seminar (April 23, 2015), Academy of Mathematics and Systems Science, Chinese Academy of Sciences, Beijing, China

2015 IMS-China International Conference on Statistics and Probability (July 1-4, 2015), Kunming, China

2015 Colloque Franco-Roumain en Théorie des Probabilités, Institut de Mathématiques "*Simion Stoilow*" de l'Académie Roumaine (Oct 30 – Nov 1, 2015) Bucarest, Roumanie

2015 Workshop on Stochastic Analysis and Related Topics (Nov 30 – Dec 2, 2015) Academy of Mathematics and Systems Science, Chinese Academy of Sciences, Beijing, China

2016 BeNeLux Mathematical Congress 2016 (22–23 March 2016), Amsterdam, Netherlands

2016 Séminaire de Probabilités, Laboratoire de Probabilités et Modèles Aléatoires des Universités Pierre et Marie Curie et Denis Diderot (March 29, 2016), Paris, France

2016 Second joint Conference of the Belgian, Royal Spanish and Luxembourg Mathematical Societies (June 6–8, 2016), Logroño (La Rioja), Spain

2016 School on Algebraic, Geometric and Probabilistic Aspects of Dynamical Systems and Control Theory (July, 4–15, 2016), ICTP, Trieste, Italy

2017 Probability Seminar (May 5, 2017), Tianjin University, China

2017 Max-Planck Institute for Mathematics (Sept 11-15, 2017), Activity: "Metric Measure Spaces and Ricci Curvature", Lecture course, Bonn, Germany

2017 International Conference on Applied Mathematics and Informatics, ICAMI (Nov 26 – Dec 1, 2017), San Andres Island, Colombia

2018 "Geometry and Probability" (Jan 13 – 16, 2018), Tohoku University, Sendai, Japan

2018 "Mark Kac Seminar" (March 2, May 4, June 8, 2018), University of Utrecht, The Netherlands

2018 "Conférence de Lancement" (June 18 – 20, 2018), Laboratoire de Probabilités, Statistique et Modélisation (LPSM), Sorbonne Université, Paris, France

2018 "Workshop on Stochastic Systems: their Analysis, Geometry and Perturbation" (July 10 – 14, 2018), Chinese Academy of Sciences, Beijing, China

2018 "Atelier de travail en stochastique et EDP" (Sept 14 – 15, 2018), Simion Stoilow Institute of Mathematics of the Romanian Academy, Bucharest, Romania

2018 "Analysis of Differential Operators on Manifolds" (Sept 24 – 26, 2018), Universität Freiburg, Germany

2018 "Journées Analyse et Physique Mathématique" (Oct 4 – 5, 2018), Université de Lorraine, Metz, France

2018 "Stability Phenomena in Geometry and Mathematical Physics" (Oct 9 – 12, 2018), Humboldt University, Berlin, Germany

2018 "Workshop on Stochastic Differential Equations and Applications" (Nov 2 – 4, 2018), SCUN Wuhan, China

2018 "Probability seminar" (Nov 7, 2018), Wuhan University, China

2018 "Séminaire Calcul stochastique" (Dec 6, 2018), IRMA, Strasbourg, France

2019 "Analyse stochastique et thèmes connexes" (May 6 – 9, 2019), Faculty of Mathematics and Informatics, University of Bucharest, Romania

2019 "Oberseminar Global Analysis and Operator Algebras" (June 11th, 2019), University of Bonn, Germany

2019 "Eleventh School on Analysis and Geometry in Metric Spaces" (June 24 – 28, 2019), Levico Terme (Trento), Italy

2019 "Japanese-German Open Conference on Stochastic Analysis 2019" (Sept 02 – 06, 2019), Fukuoka University, Japan

2019 "Self-adjoint Extensions in New Settings" (Oct 6 – 12, 2019), Oberwolfach Research Institute for Mathematics (MFO), Germany

2019 "Heat Kernels, Stochastic Processes and Functional Inequalities" (Nov 17 – 23, 2019), Oberwolfach Research Institute for Mathematics (MFO), Germany

2019 "Journée Analyse et Probabilité" (Nov 28, 2019), Institut de Mathématiques, Université de Bordeaux, France

2019 "Problems of roughness, geometry and random fluctuations" (Dec 09 – 12, 2019), Hausdorff Research Institute for Mathematics (HIM), Bonn, Germany

2020 "Workshop on Manifold and Shape Stochastics" (Febr. 23-27, 2020), Sandbjerg Estate, Denmark

2020 SRGI conference "Sub-Riemannian Geometry and Interactions" (Sept. 7–11, 2020), Sorbonne Université, Paris, France

2021 Conference "Stochastics and Geometry" (online) (March 7–12, 2021), Banff International Research Station, Canada

2021 Conference "Stochastic differential geometry and mathematical physics" (online) (June 7–11, 2021), Henri Lebesgue Center, Rennes, France

2021 Colloquium (online) (Nov 13, 2021), Department of Mathematics, UC Riverside, USA

2021 "Variable Curvature Bounds, Analysis and Topology on Dirichlet Spaces" (Dec 5 – 11, 2021), Oberwolfach Research Institute for Mathematics (MFO), Germany

2022 42nd Conference on Stochastic Processes and their Applications (SPA) (online) (June 27 – July 1, 2022), Wuhan, China

2022 "New Trends in Dirichlet Forms and Optimal Transport" (Aug 29 – Sept 2, 2022), Hausdorff Research Institute for Mathematics (HIM), Bonn, Germany

2022 "Heat Kernels, Stochastic Processes and Functional Inequalities" (Oct 30 – Nov 05, 2022), Oberwolfach Research Institute for Mathematics (MFO), Germany

2023 "Hypoelliptic Operators in Geometry" (May 21 – 26, 2021), Oberwolfach Research Institute for Mathematics (MFO), Germany

2023 *North-East Midlands Stochastic Analysis Seminar* (5-7 June, 2023), University of Warwick, UK

2023 *Stochastics, dynamics and geometry: a workshop in honour of Peter Baxendale* (June 8-9, 2023), University of Warwick, UK

2024 Conference on *"Stochastic Analysis and Related Topics"* (May 11-18, 2024), Hangzhou Normal University, China

2024 Research Stay (May 18-21, 2024), New York University Shanghai, China

2024 International Conference "Stochastics and Geometry" (Sept 8–13, 2024), Banff International Research Station, Canada

2024 International Conference "Frontiers in Sub-Riemannian Geometry" (Nov 25 – 29, 2024), CIRM (Centre International de Rencontres Mathématiques), Marseille, France

2025 "Recent Results on Loop Spaces" (March 2 – 7, 2025), Oberwolfach Research Institute for Mathematics (MFO), Germany

2025 Colloquium, Institut Élie Cartan de Lorraine (Apr 29, 2025), Nancy, France

2025 12th International Conference on Stochastic Analysis and its Applications (Sept 8–12, 2025), Bucharest, Romania

2025 "Functional Inequalities: Geometric Calculus meets Stochastic Analysis" (Nov 30 – Dec 5, 2025), Oberwolfach Research Institute for Mathematics (MFO), Germany

2026 18th MSJ-SI: "Analysis, Geometry and Probability on Metric Measure Spaces" (Febr 9–20, 2026), Fukuoka, Japan

2026 "GeoStoch 2026" (March 16–19, 2026), EURANDOM, Eindhoven University of Technology, the Netherlands

Publications

[1] Anton Thalmaier, Asymptotik Brownscher Bewegungen. *Regensburger Mathematische Schriften* **22** (1989).

[2] Wolfgang Hackenbroch and A. Thalmaier, *Stochastische Analysis. Eine Einführung in die Theorie der stetigen Semimartingale.* (560 pages). Stuttgart: Teubner, 1994.

[3] Anton Thalmaier, Brownian motion and the formation of singularities in the heat flow for harmonic maps. *Probab. Theory Relat. Fields* **105** (1996) 335–367.

[4] Anton Thalmaier, Martingales on Riemannian manifolds and the nonlinear heat equation. *Stochastic analysis and applications* (Powys, 1995), World Sci. Publ., River Edge, NJ, 1996, 429–440.

[5] Anton Thalmaier, On the differentiation of heat semigroups and Poisson integrals. *Stochastics and Stochastics Reports* **61** (1997) 297–321.

[6] Anton Thalmaier and Feng-Yu Wang, Gradient estimates for harmonic functions on regular domains in Riemannian manifolds. *J. Funct. Anal.* **155** (1998) 109–124.

[7] Marc Arnaudon and Anton Thalmaier, Stability of stochastic differential equations in manifolds. *Séminaire de Probabilités*, XXXII, 188–214. Lecture Notes in Math. **1686**. Berlin: Springer, 1998.

[8] Marc Arnaudon and Anton Thalmaier, Complete lifts of connections and stochastic Jacobi fields. *J. Math. Pures Appl.* **77** (1998) 283–315.

[9] Anton Thalmaier, Some remarks on the heat flow for functions and forms. *Electron. Comm. Probab.* **3** (1998) 43–49.

[10] Marc Arnaudon, Xue-Mei Li and A. Thalmaier, Manifold-valued martingales, changes of probabilities, and smoothness of finely harmonic maps. *Ann. Inst. H. Poincaré Probab. Statist.* **35** (1999) 765–792.

[11] Marc Arnaudon and Anton Thalmaier, Bismut type differentiation of semigroups. *Prob. Theory and Math. Stat. (Vilnius, 1998)*, 23–32, VSP/TEV, Utrecht and Vilnius, 1999.

[12] Bruce K. Driver and Anton Thalmaier, Heat equation derivative formulas for vector bundles. *J. Funct. Anal.* **183** (2001) 42–108.

[13] Marc Arnaudon, Robert O. Bauer and Anton Thalmaier, A probabilistic approach to the Yang-Mills heat equation. *J. Math. Pures Appl.* **81** (2002) 143–166.

[14] Hélène Airault, Paul Malliavin and Anton Thalmaier, Support of Virasoro unitarizing measures. *C. R. Acad. Sci. Paris, Ser. I,* **335** (2002) 621–626.

[15] Marc Arnaudon and Anton Thalmaier, Horizontal martingales in vector bundles. *Séminaire de Probabilités*, XXXVI, 419–456. Lecture Notes in Math. **1801**. Berlin: Springer, 2003.

[16] Marc Arnaudon and Anton Thalmaier, Yang-Mills fields and random holonomy along Brownian bridges. *Ann. Probab.* **31** (2003) 769–790.

[17] Emilio Barrucci, Paul Malliavin, Maria Elvira Mancino, Roberto Renò and Anton Thalmaier, The price-volatility feedback rate: an implementable mathematical indicator of market stability. *Mathematical Finance* **13** (2003) 17–35.

[18] Marc Arnaudon, Holger Plank and Anton Thalmaier, A Bismut type formula for the Hessian of a heat semigroup. *C. R. Acad. Sci. Paris, Ser. I,* **336** (2003) 661–666.

[19] Paul Malliavin and Anton Thalmaier, Numerical error for SDE: Asymptotic expansion and hyperdistributions. *C. R. Acad. Sci. Paris, Ser. I,* **336** (2003) 851–856.

[20] Anton Thalmaier and Feng-Yu Wang, Derivative estimates of semigroups and Riesz transforms on vector bundles. *Potential Anal.* **20** (2004) 105–123.

[21] Ana Bela Cruzeiro, Paul Malliavin and Anton Thalmaier, Geometrization of Monte-Carlo numerical analysis of an elliptic operator: strong approximation. *C. R. Acad. Sci. Paris, Ser. I,* **338** (2004) 481–486.

[22] Hélène Airault, Paul Malliavin and Anton Thalmaier, Canonical Brownian motion on the space of Jordan curves and resolution of Beltrami equations by a continuity method along stochastic flows. *J. Math. Pures Appl.* **83** (2004) 955–1018.

[23] Paul Malliavin and Anton Thalmaier, *Stochastic Calculus of Variations in Financial Mathematics*. Springer Finance. Springer-Verlag, Berlin, 2005.

[24] Marc Arnaudon, Anton Thalmaier and Feng-Yu Wang, Harnack inequality and heat kernel estimates on manifolds with curvature unbounded below. *Bull. Sci. Math.* **130** (2006) 223–233.

[25] Marc Arnaudon, Bruce K. Driver and Anton Thalmaier, Gradient estimates for positive harmonic functions by Stochastic Analysis. *Stochastic Processes Appl.* **117** (2007) 202–220.

[26] Marc Arnaudon, Kohélè A. Coulibaly and Anton Thalmaier, Brownian motion with respect to a metric depending on time; definition, existence and applications to Ricci flow. *C. R. Acad. Sci. Paris, Ser. I,* **346** (2008) 773–778.

[27] Marc Arnaudon, Anton Thalmaier and Stefanie Ulsamer, Existence of non-trivial harmonic functions on Cartan-Hadamard manifolds of unbounded curvature. *Math. Zeitschrift* **263** (2009) 369–409.

[28] Marc Arnaudon, Anton Thalmaier and Feng-Yu Wang, Gradient estimate and Harnack inequality on non-compact Riemannian manifolds. *Stochastic Processes Appl.* **119** (2009) 3653–3670.

[29] Shizan Fang, Dejun Luo and A. Thalmaier, Stochastic differential equations with coefficients in Sobolev spaces. *J. Funct. Anal.* **259** (2010) 1129–1168.

[30] Marc Arnaudon and Anton Thalmaier, Li-Yau type gradient estimates and Harnack inequalities by Stochastic Analysis. *Advanced Studies in Pure Mathematics* **57** (2010) 29–48.

[31] Hélène Airault, Paul Malliavin and Anton Thalmaier, Brownian measures on Jordan-Virasoro curves associated to the Weil-Petersson metric. *J. Funct. Anal.* **259** (2010) 3037–3079.

[32] Marc Arnaudon and Anton Thalmaier, The differentiation of hypoelliptic diffusion semigroups. *Illinois J. Math.* **54** (2010) 1285–1311.

[33] Marc Arnaudon, Kohélè A. Coulibaly and Anton Thalmaier, Horizontal diffusion in C^1 path space. *Séminaire de Probabilités*, XLIII, 73–94, Lecture Notes in Math. **2006**. Berlin: Springer, 2011.

[34] Anton Thalmaier, Paul Malliavin (10 September 1925 – 3 June 2010). *Eur. Math. Soc. Newsl.* **81** (2011) 17–20.

[35] Anton Thalmaier and Feng-Yu Wang, A stochastic approach to a priori estimates and Liouville theorems for harmonic maps. *Bull. Sci. Math.* **135** (2011) 816–843.

[36] Marc Arnaudon and Anton Thalmaier, Brownian motion and negative curvature. *Random Walks, Boundaries and Spectra*, Progress in Probability, Vol. 64, 145–163. Springer Basel, 2011.

[37] Hongxin Guo, Robert Philipowski and Anton Thalmaier, Entropy and lowest eigenvalue on evolving manifolds. *Pacific J. Math.* **264** (2013) 61–82.

[38] Hongxin Guo, Robert Philipowski and Anton Thalmaier, A note on Chow's entropy functional for the Gauss curvature flow. *C. R. Math. Acad. Sci. Paris* **351** (2013) 833–835.

[39] Marc Arnaudon, Anton Thalmaier and Feng-Yu Wang, Equivalent Harnack and gradient inequalities for pointwise curvature lower bound. *Bull. Sci. Math.* **138** (2014) 643–655.

[40] Hongxin Guo, Robert Philipowski and Anton Thalmaier, A stochastic approach to the harmonic map heat flow on manifolds with time-dependent Riemannian metric. *Stochastic Processes Appl.* **124** (2014) 3535–3552.

[41] Hongxin Guo, Robert Philipowski and Anton Thalmaier, An entropy formula for the heat equation on manifolds with time-dependent metric, application to ancient solutions. *Potential Analysis* **42** (2015) 483–497.

[42] Hongxin Guo, Robert Philipowski and Anton Thalmaier, Martingales on manifolds with time-dependent connection. *J. Theoret. Probab.* **28** (2015) 1038–1062.

[43] Robert Philipowski and Anton Thalmaier, Heat equation in vector bundles with time-dependent metric. *J. Math. Soc. Japan* **67** (2015) 1759–1769.

[44] Hongxin Guo, Robert Philipowski and Anton Thalmaier, On gradient solitons of the Ricci-Harmonic flow. *Acta Math. Sinica, English Series* **31** (2015) 1798–1804.

[45] Erlend Grong and Anton Thalmaier, Curvature-dimension inequalities on sub-Riemannian manifolds obtained from Riemannian foliations: Part I. *Math. Zeitschrift* **282** (2016) 99–130.

[46] Erlend Grong and Anton Thalmaier, Curvature-dimension inequalities on sub-Riemannian manifolds obtained from Riemannian foliations: Part II. *Math. Zeitschrift* **282** (2016) 131–164.

[47] Anton Thalmaier, Geometry of subelliptic diffusions. In: *Dynamics, geometry and analysis on sub-Riemannian manifolds*, Vol. II. (D. Barilari, U. Boscain, M. Sigalotti, eds.) EMS Series of Lectures in Mathematics (ELM), Zürich: European Mathematical Society, 2016, pp. 85–169.

[48] Li-Juan Cheng and Anton Thalmaier, Characterization of pinched Ricci curvature by functional inequalities. *J. Geom. Anal.* **28** (2018) no. 3, 2312–2345.

[49] Li-Juan Cheng and Anton Thalmaier, Spectral gap on Riemannian path space over static and evolving manifolds. *J. Funct. Anal.* **274** (2018) 659–684.

[50] Li-Juan Cheng and Anton Thalmaier, Evolution systems of measures and semigroups properties on evolving manifolds. *Electron. J. Probab.* **23** (2018), paper no. 20, 27 pp.

[51] Li-Juan Cheng, Anton Thalmaier and James Thompson, Quantitative C^1-estimates by Bismut formulae. *J. Math. Anal. Appl.* **465** (2018) no. 2, 803–813.

[52] Li-Juan Cheng, Anton Thalmaier and James Thompson, Uniform gradient estimates on manifolds with a boundary and applications. *Analysis and Mathematical Physics* **8** (2018), no. 4, 571–588.

[53] Li-Juan Cheng, Anton Thalmaier and James Thompson, Functional inequalities on manifolds with non-convex boundary. *Sci. China Math.* **61** (2018), no. 8, 1421–1436.

[54] Erlend Grong and Anton Thalmaier, Stochastic completeness and gradient representations for sub-Riemannian manifolds. *Potential Analysis* **51** (2019), no. 2, 219–254.

[55] Anton Thalmaier and James Thompson, Derivative and divergence formulae for diffusion semigroups. *Ann. Probab.* **47** (2019), no. 2, 743–773.

[56] Fabrice Baudoin, Erlend Grong, Kazumasa Kuwada and Anton Thalmaier, Sub-Laplacian comparison theorems on totally geodesic Riemannian foliations. *Calc. Var. Partial Differential Equations* **58** (2019), no. 4, Art. 130, 38 pp.

[57] Anton Thalmaier and James Thompson, Exponential integrability and exit times of diffusions on sub-Riemannian and metric measure spaces. *Bernoulli* **26** (2020), no. 3, 2202–2225.

[58] Batu Güneysu and Anton Thalmaier, Scattering theory without injectivity radius assumptions, and spectral stability for the Ricci flow. *Ann. Inst. Fourier (Grenoble)* **70** (2020), no. 1, 437–456.

[59] Fabrice Baudoin, Erlend Grong, Kazumasa Kuwada, Robert Neel and Anton Thalmaier, Radial processes for sub-Riemannian Brownian motions and applications. *Electron. J. Probab.* **25** (2020), paper no. 97, 1–17.

[60] Marc Arnaudon, Anton Thalmaier and Feng-Yu Wang, Gradient estimates on Dirichlet and Neumann eigenfunctions. *Int. Math. Res. Not. IMRN* **2020** (2020), no. 20, 7279–7305.

[61] Li-Juan Cheng, Anton Thalmaier and Shao-Qin Zhang, Exponential contraction in Wasserstein distance on static and evolving manifolds. *Rev. Roumaine Math. Pures Appl.* **66** (2021), no. 1, 107–129.

[62] Li-Juan Cheng, Erlend Grong and Anton Thalmaier, Functional inequalities on path space of sub-Riemannian manifolds and applications. *Nonlinear Analysis* **210** (2021), 112387, 30 pp.

[63] Qin-Qian Chen, Li-Juan Cheng and Anton Thalmaier, Bismut-Stroock Hessian formulas and local Hessian estimates for heat semigroups and harmonic functions on Riemannian manifolds. *Stochastics and Partial Differential Equations: Analysis and Computations* **11** (2023), no. 2, 685–713.

[64] Li-Juan Cheng and Anton Thalmaier, Dimension-free Harnack inequalities for conjugate heat equations and their applications to geometric flows. *Analysis & PDE* **16** (2023), no. 7, 1589–1620.

[65] Li-Juan Cheng, Anton Thalmaier and Feng-Yu Wang, Some inequalities on Riemannian manifolds linking Entropy, Fisher information, Stein discrepancy and Wasserstein distance. *Journal of Functional Analysis* **285** (2023), no. 5, 109997, 35 pp.

[66] Jun Cao, Li-Juan Cheng and Anton Thalmaier, Hessian heat kernel estimates and Calderón-Zygmund inequalities on complete Riemannian manifolds. arXiv:2108.13058 (2023) 35 pp.

[67] Li-Juan Cheng, Anton Thalmaier and Feng-Yu Wang, Covariant Riesz transform on differential forms for $1 < p \leq 2$. *Calc. Var. Partial Differential Equations* **62** (2023), no. 9, Art. 245.

[68] Li-Juan Cheng and Anton Thalmaier, Hessian estimates for Dirichlet and Neumann eigenfunctions of Laplacian. *Int. Math. Res. Not. IMRN* **2024** (2024), no. 21, 13563–13585.

[69] Fabrice Baudoin, Erlend Grong, Robert Neel and Anton Thalmaier, Variations of the sub-Riemannian distance on Sasakian manifolds with applications to coupling. arXiv:2212.07715 (2023), 15 pp.

[70] Li-Juan Cheng, Anton Thalmaier and Feng-Yu Wang, Second Order Bismut formulae and applications to Neumann semigroups on manifolds. *Pure and Applied Functional Analysis*, **11** (2026), no. 3, 549–592.

[71] Li-Juan Cheng, Anton Thalmaier and Feng-Yu Wang, L^p-Boundedness of the covariant Riesz transform on differential forms for $p > 2$, arXiv: 2511.10922 (2025), 25 pp.