

# Comprehensive Curriculum Vitae

Véronique Fischer

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# 1 Personal and Professional Information

Professional address University of Bath, Department of Mathematical Sciences,  
Bath BA2 7AY, UK.  
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Webpage <https://sites.google.com/view/veroniquefischer/home>

Memberships European Women in Mathematics, London Mathematical Society

Personal address Godalming (Surrey), GU7 1BW, UK.

Languages French (native), English (fluent), Italian (advanced), German (basic).

## 1.1 Academic Positions

- *Aug.15 - present*: Permanent position at the University of Bath (UK) hired as Senior Lecturer in Analysis, promoted to Reader in February 2021.
- *Aug.13 - July 15*: Research Associate at Imperial College London (UK), funded by EPSRC grant EP/K039407/1 *Quantization on Lie groups*, co-written with M. Ruzhansky (PI).
- *Jan.12 - July 13*: postdoctoral researcher at Università degli studi di Padova (Italy)
- *Oct.10 - Dec.11*: Grace Chisholm Young LMS Fellow at King's College London (UK)
- *Sept.09-Jan.10*: fixed-term lecturer at King's College London
- *Jan.09-July10*: postdoctoral researcher at the Scuola Normale Superiore, Pisa (Italy)
- *Sept.08-Dec.08*: academic visitor at King's College London
- *Sept.07-Aug.08*: researcher & lecturer, Institut de Mathématiques de l'Université de Neuchâtel (Switzerland)
- *Sept. 05 -Aug. 07*: postdoctoral researcher at the Scuola Normale Superiore, Pisa (Italy) postdoc funded by the European network HARP, "Marie-Curie Actions", RTN FP5 for the first 10 months, and then by the Scuola Normale Superiore.
- *Sept.04-June 05*: postdoctoral researcher at the Mathematics Department of Chalmers and Gothenburg University (Sweden), postdoc funded by the European network HARP, "Marie-Curie Actions", RTN FP5
- *Sept.2000-Aug.04*: PhD in Harmonic Analysis, *Étude de deux classes de groupes nilpotents de pas deux*. Supervised by N.Lohoué, Université Paris-Sud, Orsay (France)

## 1.2 Subjects of research:

- Harmonic and global analysis
- Lie groups and homogeneous domains
- Functional analysis and representation of groups and  $C^*$  algebras
- Spectral theory
- Operator algebras and pseudo-differential theory
- Microlocal and semiclassical analysis
- SubRiemannian geometry
- Analysis of Partial Differential Equations,  
in particular hypoellipticity and analysis of subLaplacians
- Mathematical physics

## 2 Awards

### 2.1 Prize

- Ferran Sunyer i Balaguer 2014 for the monograph *Quantization on nilpotent Lie groups* (includes the publication of the monograph in Progress in Mathematics, Birkhäuser, and 15,000 euros cash prize).

### 2.2 Grants

- March 2020: Research Project Grant awarded by the Leverhulme Trust
  - Title: *Quantum limits for sub-elliptic operators*
  - Duration: 42 months
  - Budget: £318,871  
(PI's Replacement Teaching: £39,395, Research Assistant £164,400, PhD Student £67,676, Travel: £47,400)
  - CoI: Professor Clotilde Fermanian-Kammerer (Université Paris-Est Créteil)
  - Website <https://sites.google.com/view/veroniquefischer/subelliptic-ql>
- February 2020: Research in Pairs awarded by the LMS (minor travel grant, £660).
- LMS Workshop Grant WS-1516-02: £2,500 awarded by the LMS in February 2016. This partially funded the workshop *Analysis on Manifolds with Symmetries and Related Structures*, 28-29 June 2016, University of Bath.
- Departmental budget to participate in the LMS network Harmonic Analysis and PDEs: £550 in the annual budget of the Department of Mathematical Sciences, University of Bath, from 2015. This partially funded the 2 meeting of the LMS network of UK Harmonic Analysis and PDEs, 7 June 2017 and 30 June 2016, University of Bath.
- Start-up Grant (£4,000) awarded in November 2015 by the Faculty of Science, University of Bath, after competition. Beside my travel expenses, it funded the following events:
  - partially the 2 meeting of the LMS network of UK Harmonic Analysis and PDEs, 7 June 2017 and 30 June 2016, University of Bath,
  - Visits of Professors F. Ricci (6-10 June 2016), C. Fermanian-Kammerer (6-7 June 2016) and P. Gérard (26-30 June 2017); they all gave talks at events of the department.
- EPSRC grant EP/K039407/1 *Quantization on Lie groups*, co-written with M. Ruzhansky as PI. I was then employed as a Research Associate on this grant at Imperial College London.

## 3 Research output and publications

### 3.1 Monograph

Véronique Fischer and Michael Ruzhansky.

*Quantization on nilpotent Lie groups* (557 pages).

Progress in Mathematics **314**, Birkhäuser Springer, 2016.

Winner of the Ferran Sunyer I Balaguer prize in 2014.

In open access at <https://link.springer.com/book/10.1007/978-3-319-29558-9>

### 3.2 Papers

1. Veronique Fischer and Søren Mikkelsen.  
Semiclassical functional calculus on nilpotent Lie groups and their compact nilmanifolds.  
Accepted to Analysis and Mathematical Physics.  
<https://arxiv.org/abs/2409.05520>
2. Lino Benedetto, Clotilde Fermanian-Kammerer and Veronique Fischer.  
Quantization on Groups and Gårding inequality.  
Accepted to *Journal of the Mathematical Society of Japan*.  
<https://arxiv.org/abs/2307.15352>
3. Veronique Fischer and Francesca Tripaldi  
An alternative construction of the Rumin complex on homogeneous nilpotent Lie groups.  
*Advances in Mathematics*, **429** (2023), Paper No. 109192 (39 pages).  
<https://arxiv.org/abs/2208.11118>
4. Veronique Fischer, David Rottensteiner and Michael Ruzhansky.  
Heisenberg-Modulation Spaces at the Crossroads of Coorbit Theory and Decomposition Space Theory.  
To appear in *Journal of Lie Theory*.  
<https://arxiv.org/abs/1812.07876>
5. Clotilde Fermanian-Kammerer, Véronique Fischer and Steven Flynn.  
Some remarks on semi-classical analysis on two-step nilmanifolds.  
In *Quantum mathematics I*, volume 57 of Springer INdAM Ser. (Proceedings of Indam Quantum Meetings 2022, Milano, Italy), pages 129-162. Springer, Singapore, 2023.  
<https://arxiv.org/abs/2211.14273>
6. Clotilde Fermanian-Kammerer, Véronique Fischer and Steven Flynn.  
Geometric invariance of the semi-classical calculus on nilpotent graded Lie groups.  
*Journal of Geometric Analysis*, **33** (2023), No 4, Paper No 127 (35 pages).  
<https://arxiv.org/abs/2112.11509>
7. Veronique Fischer.  
Asymptotics and Zeta Functions on Nilmanifolds.  
*Journal des Mathématiques Pures et Appliquées* **160** (2022), pp. 1-28.
8. Clotilde Fermanian-Kammerer and Véronique Fischer.  
Quantum evolution and sub-Laplacian operators on groups of Heisenberg type.  
*Journal of Spectral Theory*, **11** (2021), pp 1313-1367.  
<https://arxiv.org/abs/1910.14486>

9. Veronique Fischer, Michael Ruzhansky and Chiara Taranto.  
Subelliptic Gevrey spaces.  
*Mathematische Nachrichten* **294** (2021), no. 2, 265-285.  
<https://arxiv.org/abs/1805.08667>
10. Véronique Fischer and Michael Ruzhansky.  
Fourier multipliers on graded Lie groups.  
*Colloquium Mathematicum* **165** (2021), no. 1, 1-30.  
<https://arxiv.org/abs/1411.6950>
11. Véronique Fischer.  
Differential structure on the dual of a compact Lie group.  
*Journal of Functional Analysis*, **279** 2020, No 3, (53 pages).  
<https://doi.org/10.1016/j.jfa.2020.108555>
12. Véronique Fischer.  
Real trace expansions.  
*Documenta Mathematica* **24** (2019), 2159-2202.  
<https://www.elibm.org/ft/10011992000>
13. Clotilde Fermanian-Kammerer and Véronique Fischer.  
Defect measures on graded Lie groups.  
*Annali della Scuola Normale Superiore di Pisa, Cl. Sci. (5)*, **XXI** (2020), 207 - 291.  
<https://arxiv.org/abs/1707.04002>
14. Clotilde Fermanian-Kammerer and Véronique Fischer.  
Semi-classical analysis on H-type groups.  
*Science China Mathematics* (2019) **62**, pp 1057-1086  
<https://doi.org/10.1007/s11425-018-9515-6>
15. Véronique Fischer.  
Local and global symbols on compact Lie groups.  
*Journal of Pseudo-differential operators and applications* (2020) **11**, pp 229-265  
<https://doi.org/10.1007/s11868-019-00299-x>
16. Véronique Fischer, Fulvio Ricci, and Oksana Yakimova.  
Nilpotent Gelfand Pairs and Schwartz extensions of spherical transforms via quotient pairs.  
*Journal of Functional Analysis* **274** (2018), No (4), pp 1076-1128.  
<https://arxiv.org/abs/1706.01390>
17. Véronique Fischer and Michael Ruzhansky.  
Sobolev spaces on graded groups.  
*Annales de l'Institut Fourier* (Grenoble), **67** (2017), no. 4, 1671-1723.  
<https://arxiv.org/abs/1311.0192>
18. Véronique Fischer.  
Intrinsic pseudo-differential calculus on compact Lie groups.  
*Journal of Functional Analysis* **268** (2015), No (11), pp 3404-3477.  
<https://arxiv.org/abs/1410.1444>
19. Véronique Fischer and Genkai Zhang.  
Principal representations of  $SO_o(n, n + 1)$ .

- Monatshefte für Mathematik* **176** (2015), No 1, pp 87-105.  
<https://arxiv.org/abs/1108.3338>
20. Véronique Fischer, Fulvio Ricci, and Oksana Yakimova.  
 Nilpotent Gelfand pairs and spherical transforms of Schwartz functions. II. Taylor expansion on singular sets.  
 In *Lie Groups: Structure, Actions, and Representations*, Progr. Math. **306**, pp 81–112, Birkhäuser, 2013.  
<https://arxiv.org/abs/1008.4699>
21. Véronique Fischer.  
 The Heisenberg oscillator.  
*Bulletin of Mathematical Sciences*, **2** (2012), No 1, pp 181-191.  
<https://doi.org/10.1007/s13373-012-0021-z>
22. Véronique Fischer, Fulvio Ricci, and Oksana Yakimova.  
 Nilpotent gelfand pairs and spherical transforms of Schwartz functions. I. Rank-one action on the centre.  
*Mathematische Zeitschrift*, **271** (2012), No 1-2, pp 221-255.  
<https://arxiv.org/abs/1002.3630>
23. Véronique Fischer and Fulvio Ricci.  
 Gelfand transforms of  $SO(3)$ -invariant Schwartz functions on the free group  $N_{3,2}$ .  
*Annales de l'Institut Fourier*, **59** (2009), No 6, pp 2143-2168.  
[https://aif.centre-merseigne.org/item/AIF\\_2009\\_\\_59\\_6\\_2143\\_0/](https://aif.centre-merseigne.org/item/AIF_2009__59_6_2143_0/)
24. Véronique Fischer.  
 The bounded spherical functions on the free two-step nilpotent Lie group.  
*Journal of Lie Theory*, **16** (2006), No 2, pp 351-370.  
<http://www.heldermann-verlag.de/jlt/jlt16/fischla2e.pdf>
25. Véronique Fischer.  
 The spherical maximal function on the free two-step nilpotent Lie group.  
*Mathematica Scandinavica*, **99** (2006), No 1, pp 99-118.  
<https://www.mscaand.dk/article/view/15002>

## Announcements

- Veronique Fischer.  
 Quantum Limit for Sub-Elliptic Operators.  
 In the *Oberwolfach report for Hypoelliptic Operators in Geometry*, 21-26 May 2023.  
<https://publications.mfo.de/handle/mfo/4050>
- Veronique Fischer.  
 Towards semi-classical analysis for sub-elliptic operators.  
*Bruno Pini Mathematical Analysis Seminar* 2021.  
<https://arxiv.org/abs/2111.09854>
- Véronique Fischer and Michael Ruzhansky.  
 Pseudo-differential operators on nilpotent Lie groups.  
 In *Fourier Analysis: Pseudo-differential Operators, Time-Frequency Analysis and Partial Differential Equations*, Trends in Mathematics, Birkhäuser, pp 107-132, 2014.  
<https://arxiv.org/abs/1209.2621>

- Véronique Fischer and Michael Ruzhansky.  
A pseudo-differential calculus on the Heisenberg group.  
*C. R. Math. Acad. Sci. Paris* **352** (2014), No 3, pp 197-204.  
<https://arxiv.org/abs/1209.2621>
- Véronique Fischer and Michael Ruzhansky.  
Lower bounds for operators on graded Lie groups.  
*C. R. Math. Acad. Sci. Paris* **351** (2013), No 1-2, pp 13-18.  
<https://arxiv.org/abs/1301.0642>

## Preprints

- Clotilde Fermanian-Kammerer, Véronique Fischer and Steven Flynn.  
A microlocal calculus on filtered manifolds.  
<https://arxiv.org/abs/2412.17448>
- Veronique Fischer and Francesca Tripaldi.  
Subcomplexes on filtered manifolds.  
<https://arxiv.org/abs/2312.02342>
- Veronique Fischer.  
Semiclassical analysis on compact nilmanifolds.  
<https://arxiv.org/abs/2101.07027>
- Véronique Fischer, Fulvio Ricci and Oksana Yakimova.  
Nilpotent Gelfand pairs and spherical transforms of Schwartz functions III.  
<https://arxiv.org/abs/1812.07876>

## PhD thesis

*Étude de deux classes de groupes nilpotents de pas deux.*

Supervised by N.Lohoué, referees: J-L.Clerc, D.Müller, viva: 5 July 2004.

<https://arxiv.org/abs/0810.4173>

## 4 Academic citizenship

In this section, I present my academic activities outside of teaching and lecturing. My teaching experience will be presented in detail in Section 5. The later section includes the description of my roles as external examiners for the University of Manchester and for three PhD's (see Section 5.6) and of my graduate lectures (see Section 5.4).

### 4.1 Direction and supervision

- Direction of Dr Steven Flynn and Dr Søren Mikkelsen as Postdoctoral Research Assistants on the project funded by my Leverhulme grant.
- Supervision of Dr Sofia Ortega Castillo (CIMAT, Mexico) visiting Bath as a Rutherford fellow (funded by UKRI), September - December 2018.
- PhD: see Section 5.5.
- Undergraduate projects: see in Section 5.3.

## 4.2 Service to the community

### Mentoring

- Mentor for the Elevate Programme in 2023 and 2024 (leadership and development for women of ethnic groups, based in universities of the South West of the UK).

### Advising

- on the international expert panel for the preselection of eminent women scientists for L'Oréal-UNESCO For Women In Science International Awards 2020-23.

### Editorial board

- Editor for Proceedings of the Edinburgh Mathematical Society.

### Committee work

- Good Practice Scheme Steering Group, London Mathematical Society.
- External member of the jury COFUND MathPhDInFrance in May 2024 (to select international students for PhD places in France)
- External member of the hiring committee in May 2023 for the Laboratoire Mathématique d'Orsay, Université d'Orsay Paris-Sud XI (France).
- Exam board meeting at Manchester as external examiner (2019 - 2023).
- I am or have been on many committees in my university: departmental research committee, curriculum transformation committee, Faculty Equality and Diversity committee, various hiring committees etc.

## 4.3 Organisation of scientific events

### Organisation of workshops and conferences

- Meeting of the network Harmonic Analysis and PDEs, 8th May 2024, University of Bath. <https://sites.google.com/view/lms-hanpde-network/bath-summer-2024>
- Meeting of the network Operator Algebra in the South of the UK, 24th November 2023, University of Bath. <https://sites.google.com/view/operatoralgebrasinthesouth/home>
- Conference *High frequency analysis: from operator algebras to PDEs*, 28th August - 1st September 2023, in University of Angers, France, <https://indico.math.cnrs.fr/event/9728/>.
- the two workshops in analysis for the British Mathematical Colloquium 2023, with Monica Musso, 4th and 5th April 2023, University of Bath, <https://sites.google.com/view/bmc-2023/workshops/analysis>
- two meetings of the LMS network of UK Harmonic Analysis and PDEs, 7th June 2017 and 30th June 2016, University of Bath (funding: LMS network, Personal Start-up Grant and departmental budget) <http://people.bath.ac.uk/vcmf20/hapde2017.html>, <http://people.bath.ac.uk/vcmf20/hapde.html>



- Workshop *Analysis on Manifolds with Symmetries and Related Structures*, 28th-29th June 2016, University of Bath (sole organiser, 9 speakers, 27 participants, funding: LMS Workshop Grant WS-1516-02 and Personal Start-up Grant), <http://people.bath.ac.uk/vcmf20/workshop.html>
- Conference *Noncommutative Analysis and PDEs*, 11th-15th April 2016, Imperial College London (funded by EPSRC grant EP/K039407/1).
- Workshop *Microlocal Day 4, Noncommutative Harmonic Analysis and Probability*, 5th March 2014, Imperial College London.
- Workshop *Microlocal Day 3, Noncommutative Harmonic Analysis and Probability*, 12th December 2012, Imperial College London.
- Conference *Convegno di analisi armonica*, 22nd-27th May 2006, Cortona (Italy).

### Seminar and network

- From August 2024, UK-organiser of the Paris-London Analysis Seminar <http://www.london-analysis-seminar.org.uk/Paris-London/>
- From 2022, Bath node for the LMS and Newton network *Operator Algebra in the South of the UK* (I have organised the meeting of 24th November at Bath). <https://sites.google.com/view/operatoralgebrasinthesouth/>
- From 2016, Bath node of the LMS network Harmonic Analysis and PDE (for which I have organised three meetings of the network at Bath as mentioned above). <https://sites.google.com/view/lms-hanpde-network/home>
- Seminar of Pure Analysis and PDEs at Imperial College London, from 2013 to 2015 (I was also in charge of constructing and maintaining the website of the group).

## 4.4 Reviewing activities

- Peer reviewer for EPSRC (British research council), London Mathematical Society prizes, International Centre for Mathematical Sciences workshops (in Edinburgh), NWO Talent Programme (Dutch research council), Fondecyt (Chile).
- Peer reviewer for more than 20 journals: Duke Mathematical Journal, Annales Henri Poincaré, Journal of Functional Analysis, Communications in Mathematical Physics, Journal of Mathematical Physics, International Mathematics Research Notices, Annales de l'Institut Fourier, Journal of the Institute of Mathematics of Jussieu, Transactions of the American Mathematical Society, Journal of Geometric Analysis, Journal of Fourier Analysis and Applications, Monatshefte für Mathematik, Journal of Lie Theory, Bulletin des Sciences Mathématiques, Complex Analysis and Operator Theory, Journal of Approximation Theory, Canadian Journal of Mathematics, Transformation Groups, Illinois Journal of Mathematics, Glasgow Mathematical Journal, Bulletin of the Belgian Mathematical Society, Sigma, Analysis and Geometry in Metric Spaces etc.
- Reviewer for books and memoirs: Mathematical Surveys and Monographs book series of the American Mathematical Society, Memoirs of the American Mathematical Society, Grundlehren der mathematischen Wissenschaften, contributions for the Birkhäuser volume 'Applied Numerical and Harmonic Analysis', World Scientific Publishing.

- Reviewer for Mathscinet and Zentralblatt (until January 2025).

## 4.5 Lectures, talks and research visits

### 4.5.1 Recent talks and lectures

- 26/02/25 Leeds Geometry Seminar (UK)
- 18/12/24 Geometric Structures and Differential Equations (RIMS, Kyoto - on zoom)
- 29/11/24 Frontiers in Sub-Riemannian Geometry, CIRM (France)
- 24/07/24 LMS-Bath Symposium: Advances in Spectral Theory (UK)
- 05/07/24 Newton Institute, Cambridge (UK)
- 27/06/24 Talk at Microlocal Analysis and Quantum Dynamics 2024, Northwestern University (USA)
- 10-14/06/24 Lectures at 13th School on Analysis and Geometry in Metric Spaces in Trento (Italy)
- 04/05/24 Workshop Harmonic Analysis on manifolds, Loughborough
- 24/01/24 Potsdam Colloquium (Germany)
- 17/01/24 online talk at 'This is what I do' series, Representation Theory & Noncommutative Geometry
- 08/01/24 Analysis Seminar, University of Birmingham
- 21/12/23 Mathematics Seminar, Université de Lorraine (Metz-Nancy, France)
- 29/11/23 Sheffield pure maths colloquium
- 2/11/23 Geometry & Symmetry Seminar, Nottingham
- 28/08/23 Conference High frequency analysis: from operator algebras to PDEs, Angers (France)
- 27/07/23 Conference Quantization in Geometry, Cologne (Germany)
- 25/05/23 Oberwolfach (Germany)
- 26/04/23 Scuola Normale Superiore, Pisa (Italy)
- 24/03/23 Workshop Complex Analysis, University of Aveiro (Portugal)
- 31/01/23 Analysis Seminar, University of Milan (Italy)
- 11/10/22 Functional Analysis Seminar, Oxford
- 19-23/9/22 Lecturer at the Summer School Singular Integrals on nilpotent Lie groups and related topics, Mathematical Institute of Göttingen (Germany)
- 25/04/22 Colloquium of Pure mathematics, University of Southampton
- 20/05/21 Zoom talk, Mathematics Department Seminar, University of Bologna
- 11/05/21 Zoom talk, Analysis & Theoretical Physics Seminar, Hannover University
- 02/11/20 Zoom talk at Newcastle Pure Mathematics Seminar
- 30/07/20 Zoom talk at UK Virtual Operator Algebra Seminar
- 30/10/19 Colloquium at Dublin City University (Ireland)
- 06/06/19 Fredholm theory of non-elliptic operators, Conference 3-7/6/19, Leeds
- 09/04/19 British Mathematical Colloquium 2019 in Lancaster
- 18/01/19 Colloquium, University of South Wales
- 19/12/18 Seminar, SNS, Pisa (Italy)
- 06/12/18 Analysis Seminar, Bath
- 13&14/06/18 Analysis Seminar & Colloquium, Göttingen (Germany)

#### 4.5.2 Lectures and talks prior to 2018:

- 13-15/12/17 Algebraic Structures & Quantum Physics Workshop, Cardiff  
 11/10/17 Lancaster colloquium  
 21-27/06/17 Lecturer at School on Modern Mathematics in Theoretical Physics, Mesoamerican  
 Centre for Theoretical Physics, Chiapas (Mexico)  
 29/03/17 Guest speaker at Young Functional Analysts' Workshop, Glasgow  
 04/11/16 Guest speaker at Symposium, ICMS, Edinburgh  
 02/11/16 Analysis Seminar, University of Loughborough  
 18/10/16 Analysis Seminar, University of Leeds  
 26/09/16 Conference Analysis and PDEs, Imperial College London  
 16/09/16 Conference Interactions of Harmonic Analysis and Operator Theory, Birmingham  
 07/06/16 Conference Harmonic Analysis and Approximation Theory, Barcelona (Spain)  
 11/04/16 Conference Noncommutative Analysis and PDEs, Imperial College London  
 08/02/16 Oxford Centre of Nonlinear PDEs Seminar, Oxford  
 04/12/15 LMS-Bath-WIMCS Analysis Day, Bath  
 03/11/15 Geometry Seminar, Bath  
 26/05/15 Convegno Nazionale di Analisi Armonica, Mattera (Italy)  
 24-27/03/15 Intensive course, University of Aveiro (Portugal)  
 09/03/15 Seminaire de Problèmes Spectraux en Physique Mathématique, IHP, Paris (France)  
 02/02/15 Analysis Seminar, University of Birmingham  
 21/11/14 Workshop  $SL(2, \mathbb{R})$  day, Reims (France)  
 17/06/14 LMS regional meeting Scattering Theory and Wave Equations, Loughborough  
 11/06/14 Convegno Nazionale di Analisi Armonica, Pisa (Italy)  
 05/06/14 Plenary talk at Strobl 14 Conference, Modern Time Frequency Analysis (Austria)  
 22/04/14 Centre de Recerca Matemàtica, Barcelona (Spain)  
 10/04/14 LMS meeting Pseudo-differential Operators and Markov Processes, Swansea  
 13/12/13 Paris-London Analysis Seminar, IHP Paris (France)  
 04/10/13 CRM-ISAAC Fourier analysis conference 4-8 November, Barcelona (Spain)  
 09/08/13 9th International ISAAC Congress, Krakow (Poland)  
 02/07/13 Linear and Nonlinear Hyperbolic Equations 1-4 July, Centro De Giorgi, Pisa (Italy)  
 28/05/13 LMS meeting Noncommutative Harmonic Analysis and Probability, Sheffield  
 12/12/12 Microlocal Day 3, Imperial College London  
 25/06/12 Fourier analysis and  $\Psi$ DO's, Aalto (Finland)  
 3-6/4/12 Seminar of the Mathematics Department of University Paris 12 (France)  
 06/03/12 Geometry and Analysis seminar of Queen Mary University, London  
 26/01/12 OxpDE seminar, Oxford  
 12&13/1/12 Analysis and PDE Seminar, Imperial College London  
 06/12/11 Seminar of the Mathematics Department, University of Reims (France)  
 21/11/11 Maxwell Institute Analysis Seminar, Edinburgh  
 25/10/11 Geometry and Analysis Seminar of Queen Mary University, London  
 06/10/11 WIMCS Workshop 6-7 October, Swansea  
 08/09/11 Birmingham Analysis Seminar  
 22/09/11 Loughborough Analysis Seminar  
 25-26/05/11 Intensive lecture course at the London Taught Course Centre  
 26/04/11 Conference RDHA 25-29 April, Marrakech (Morocco)  
 23/02/10 Workshop Harmonic Analysis and PDE, Glasgow  
 16/06/09 Conference Guido Weiss 15-19 June, Bardenocchia (Italy)  
 15/05/09 Conference Harmonic Analysis 12-15 May, Milan (Italy)  
 06/02/09 Imperial College Analysis Seminar  
 17/11/08 King's College London Analysis Seminar  
 2007-08 (date: 25/10, 13/12 & 29/1) working groups, Neuchâtel (Switzerland)  
 05/06/07 Colloquium de l'Institut de Mathématiques, Neuchâtel (Switzerland)  
 24/05/06 Convegno di analisi armonica 22-27 May, Cortona (Italy)  
 14/01/06 Conference 14-21 January, Zakopane (Poland)  
 3&10/11/05 Seminars, Scuola Normale Superiore, Pisa (Italy)  
 30/03/05 Analysis Seminar, Université de Caen (France)  
 26/11/04 Conference 25-27 November, ICMS, Edinburgh  
 14/09/04 Analysis Seminar, Chalmers and Gothenburg University (Sweden)  
 24/06/04 Analysis Seminar, Université Paris-Nord (France)  
 21/06/04 Group Analysis Seminar, Institut de Mathématiques de Jussieu, Paris (France)  
 22/04/02 Conference Harmonic Analysis and PDE 22-26 April, IHP, Paris (France)

### 4.5.3 Research visits (funded by the inviting institution)

- *8-12 April 2024*: Invitation by Laboratoire Jacques Louis Lions, Université Paris-Sorbonne.
- *7-11 September 2020*: conference Sub-Riemannian Geometry and Interactions, Paris  
[https://www.ljll.math.upmc.fr/~trelat/SRGI/SRGI\\_conference.html](https://www.ljll.math.upmc.fr/~trelat/SRGI/SRGI_conference.html)
- *16-19 December 2019*: Research visit to Scuola Normale Superiore di Pisa, invited by Prof. F. Ricci (Italy)
- *9-12 July 2019*: Research visit to Université Paris-Est Créteil, invited by Prof. C. Fermanian-Kammerer (France)
- *17-20 December 2018*: Research visit to Scuola Normale Superiore di Pisa, invited by Prof. F. Ricci (Italy)
- *12-15 June 2018*: Research visit to Göttingen University, invited by Prof. R. Meyer (Germany)
- *23-26 May 2017*: Research in Pairs *Microlocal Analysis on Lie Groups*, with Prof. C. Fermanian-Kammerer, CIRM (Luminy, France) <http://scientific-events.weebly.com/1852.html>
- *29 June - 3 July 2015*: Group Representations in Dynamical Systems and Geometry Workshop, CIRM (Luminy, France).
- *October 2014 & March 2015*: as invited academic at Laboratoire d'Analyse et de Mathématiques Appliquées (LAMA, Department of Mathematics, University Paris-Est, France).
- *30 June - 4 July 2013*: as invited academic at Institut National des Sciences Mathématiques et de leurs Interactions (INSMI, Paris, France).
- *25 February - 22 March 2013*: as invited academic at Peking University (Beijing, China).
- *4-7 February 2013*: Research visit to Professors I. Gallagher, C. Fermanian-Kammerer and H. Bahouri, University Paris 6 (France).
- *3-6 April 2012*: Research visit to Professors C. Fermanian-Kammerer and H. Bahouri, University Paris Est (France).
- *14-17 June 2011*: Noncommutative Harmonic Analysis and Representation Theory Conference, University of Luxembourg (Luxembourg).
- *21-25 March 2011*: Research visit to Prof. F. Ricci and Dr O. Yakimova, Max Planck Institute, Bonn (Germany).
- *29 June - 7 July 2006*: Research visit to Prof. G. Zhang, Chalmers and Gothenburg University (Sweden).
- *September 2006*: Research visit to Prof. D. Müller, Kiel Universität (Germany).
- *10-17 June 2004*: C.I.M.E. Summer school, Venice (Italy).

## 5 Teaching Experience

### 5.1 Undergraduate Lecturing

#### 5.1.1 Since August 2015

As Senior lecturer and then Reader at the Department of Mathematical Sciences of the University of Bath, I am in charge of the following modules:

- *MA40048 Geometric and Analytical Theory of PDE's*: Year 4 course, 3 hours per week during the second semester, preparation of lecture notes, exercise sheets and exam, marking.
- *MA30062/MA40062 ODE's*: Level 3/4 course, 3 hours per week during the second semester, preparation of lecture notes, exercise sheets and exam, marking.
- *MA40249 Year-Long Projects*: I am in charge of the projects for MMath finalists. The projects became mandatory in 2017/18 and I was in charge of setting the unit up, deciding on the allocation processes, writing guidelines etc. The normal run of the unit now consists of overseeing the projects and their marking, of allocating student/project/supervisor/checker, of organising the vivas, and scheduling the training sessions (library, Latex, presentations).

#### 5.1.2 Other experience in undergraduate lecturing

- *Autumn 2009*: Lecturer for the first year course Geometry I King's College London: 100 students, 3 hours lecturing per week, course website construction, preparation of the weekly exercise sheets and lecture notes, organisation of the tutorials, preparation of the four class tests, preparation and marking of the final examinations in May and August 2010.
- *2007-08*: Lecturer (Chargée d'enseignement, in Neuchâtel, Switzerland): Functional Analysis I (56 hours of lectures and tutorials, writing the course from scratch, examination), Functional Analysis II (28 hours of lectures, writing the course from scratch, examination).

### 5.2 Pastoral care and tutoring

- *Since August 2015*, as Senior lecturer and then Reader at the Department of Mathematical Sciences of the University of Bath:
  - personal tutor (pastoral care) of 25 students,
  - drop-in help-desk sessions for first year students 'Workshops',
  - undergraduate tutorials,
  - visits of students in industrial placements (2 visits/year).
- *2007-08*: as Lecturer (Chargée d'enseignement in Neuchâtel, Switzerland), 2 undergraduate tutorials: Vectorial Analysis (28 hours, 25 students), Algebra and Geometry (28 hours, 25 students).
- *2003-04*: as senior teaching assistant (A.T.E.R., Université Paris-Sud XI, France): Mathematics module (65 hours, 30 students) and Scientific Calculus module with Maple (25 hours, 15 students) for 2<sup>nd</sup> year, DEUG Maths.
- *2000-03*: as junior teaching assistant (moniteur, Université Paris-Sud XI, France): Mathematics module for 2<sup>nd</sup> year, DEUG Maths (65 hours/year, ~ 30 students), Mathematics module for 1<sup>st</sup> year, DEUG Physics (65 hours/year, ~ 30 students).

### 5.3 Other undergraduate matters:

- As Senior Lecturer and then Reader at the Department of Mathematical Sciences within the University of Bath:
  - Part of the task force for the Curriculum Transformation,
  - undergraduate supervisions: Olivia Iden (MMAth year-long project 2021/22), Cyrus Yavari (MMath year-long project 2019/20), Piotr Wioznack (MMath year-long project 2017/18), Ryan O’Loughlin (summer project 2016),
  - marking undergraduate projects as supervisor and checker,
  - support marking for first/second year exams (typically, a third of ca.300 scripts),
  - checking exams,
  - peer reviews of colleagues for their teaching,
  - invigilations,
  - nominated for the staff awards 2016/2017.
- Teaching qualifications in France:
  - 1999: Agrégation de Mathématiques (Higher teaching diploma),
  - Other teaching training: 2000-2003 CIES (teaching assistant training of that time in France).

### 5.4 Graduate lecturing

- 10-14 June 2024: guest lecturer (5 hours) at the 13th School on *Analysis and Geometry in Metric Spaces*, University of Trento (Italy) <https://sites.google.com/unitn.it/soagims-2024/home>
- 19-23 September 2022: guest lecturer (5 hours) at the Summer School *Singular Integrals on nilpotent Lie groups and related topics*, Mathematical Institute of Göttingen (Germany), <https://jaeh.cc/SS2022/index.htm>.
- 21 - 27 June 2017: Lecture (4 hours), *Harmonic analysis on Lie groups and quantization*, I Mesoamerican School on Modern Mathematics in Theoretical Physics, Mesoamerican Centre for Theoretical Physics, Chiapas (Mexico).
- Spring and Autumn 2014: two postgraduate lecture courses *Pseudo-differential operators* at the Taught Course Centre, Imperial College London, broadcasted in Bath, Bristol, Oxford, and Warwick. With lecture notes and exams.
- 24 - 27 March 2015: Intensive postgraduate course (12 hours), *Classical and modern aspects of harmonic analysis*, University of Aveiro, Portugal.
- 25 - 26 May 2011: Intensive postgraduate lecture course *Harmonic analysis on nilpotent Lie groups* at the London Taught Course Centre, (12 hours). With lecture notes.

### 5.5 PhD supervision

- Lead supervisor for Oissin O’Donnell (December 2020 - September 2021).
- Lead supervisor for Pablo Vinuesa at the University of Bath (PhD awarded in 2021).
- Co-supervision of Kieran Jarett (successful viva in July 2018).

- As a research associate at Imperial College (2013 - 2015), I mentored the PhD students of my team and I co-supervised very closely three of them: David Rottensteiner (PhD awarded in October 2014 - I gave him his PhD subject before starting at Imperial), Chiara Taranto (PhD awarded in December 2015) and Khoi Nguyen (PhD awarded in November 2016). Chiara spent 9 months at Bath (October 2015 - June 2016) with me to finish her PhD thesis and as a casual teaching and research assistant to write our paper. Khoi visited me at Bath, and we discussed on Skype regularly to finish his PhD thesis.

## 5.6 External examiner

- External examiner for the Department of Mathematics of the University of Manchester. 2019 - 2023.  
Courses: MATH20101 Real Analysis A, MATH20111 Real Analysis B, MATH31001 Linear Analysis, MATH4/61061 Differentiable Manifolds, MATH20122 Metric Spaces, MATH20132 Calculus of Several Variables, MATH20142 Complex Analysis, MATH20222 Introduction to Geometry, MATH31042 Fractal Geometry, MATH31052 Topology, MATH31082 Riemannian Geometry, MATH32052 Hyperbolic Geometry, MATH4/61012 Fourier Analysis & Lebesgue Integration, MATH4/61022 Analytic Number Theory, MATH4/62142 Analysis, Random Walks & Groups.
- Jury member for the PhD viva of Nathan Couchet, under Robert Yuncken, Université de Clermont-Ferrand Auvergne (France). *Une approche groupoïdale au calcul pseudodifférentiel sur les variétés d'Heisenberg et au résidu de Wodzicki*.  
Viva: June 23, 2023.
- External examiner for Léo Morin's PhD under San Vu Ngoc et Nicolas Raymond. University of Rennes (France). *Analyse spectrale semiclassique du Laplacien magnétique: Etude des états semi-excités par formes normales de Birkhoff*  
Viva: July 13, 2021.
- External examiner for Amerah Alameer's PhD thesis under V. Kisil, University of Leeds. *Singularities of Analytic Functions and Group Representations*  
Viva: July 29, 2019.
- External examiner for Adam Horwich's PhD thesis under A. Martini, University of Birmingham. *Almost everywhere convergence of Bochner-Riesz means on Heisenberg-type groups*.  
Viva: March 22, 2019.
- External examiner for Marco Vitturi's PhD thesis under J. Wright, University of Edinburgh. *Double Hilbert transforms along surfaces in the Heisenberg group*.  
Viva: December 5, 2016.

## 6 Academic referees

- Professor Fulvio Ricci
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- Professor Clotilde Fermanian-Kammerer
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- Professor Anthony Dooley
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- Other contacts:
  - Heads of the Department of Mathematical Sciences, University of Bath.
    - \* Professor Paul Milewski as former Head of Department (2017 - 2022) <https://science.psu.edu/news/paul-milewski-named-head-department-mathematics>
    - \* Professor Gunnar Traustason as new Head.
  - Professor Alain Valette (Neuchâtel, Switzerland) <http://www.unine.ch/alain.valette>