Curriculum Vitae et Studiorum

Maria Infusino

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Part I

General Information

1 Personal information

Name and surname: Maria Infusino
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2 Education and academic achievements

- 8/07/2020 – *Habilitation in Mathematics* from University of Konstanz, Germany.
- 18/02/2011 – *PhD in Mathematics* from University of Calabria, Italy.
  Evaluation degree: Excellent (highest possible award).
  PhD thesis: "Uniform distribution of sequences of points and partitions".
  Supervisor: Prof Aljosa Volčič. PhD duration: 3 years.
- 02/10/2007 – *Master degree in Mathematics* from University of Calabria, Italy.
  Evaluation degree: 110 out of 110 cum laude.
  Master thesis: "Uniformly distributed sequences on fractal sets".
  Supervisor: Prof Aljosa Volčič. Master course duration: 2 years.
- 05/10/2005–*Bachelor degree in Mathematics* from University of Calabria, Italy.
  Evaluation degree: 110 out of 110 cum laude.
  Bachelor thesis: "Newton-Kantorovich method for non-linear operators in Banach spaces".
  Supervisor: Prof Espedito De Pascale. Bachelor course duration: 3 years.
- 07/2002 – *Scientific Matura* (pre-university qualfication) from "Liceo Scientifico Pitagora", Rende, Italy. Evaluation degree: 100 out of 100. High-school course duration: 5 years.

3 Employment history

- since 31/10/2020 *Assistant Professor (Ricercatore T.D. di tipo B) at University of Cagliari,* Italy.
- 16/10/2014–30/10/2020: *Academic assistant (akademische Mitarbeiterin) at University of Konstanz,* Germany.
- 05/11/2012–15/10/2014: *Marie Curie Fellow of INdAM* (Italian National institute of Higher Maths) working on my own project: "Realizability and quantum representability problem":
  -at University of Reading, UK, from 05/11/2012 to 04/05/2014
  -at La Sapienza, University of Rome I, Italy, from 05/05/2014 to 15/10/2014.
- 01/08/2012–04/11/2012: *Research fellow at University of Reading, UK.*
- 21/06/2011–31/07/2012: *Postdoctoral Researcher at University of Reading* working as associated postdoctoral researcher in the EPSRC (Engineering and Physical Sciences Research Council) project "Truncated moment problems in statistical physics and quantum chemistry".

Part II

Research

4 Main research interests

Infinite dimensional analysis, probability theory, real algebraic geometry, and their applications to mathematical physics. In particular:

- Moment problem and its applications.
- Realizability problem for correlation functions (infinite dimensional moment problem)
- Uniform distribution theory:
  - Uniformly distributed sequences of points and partitions on fractal sets.
  - Kakutani's sequences of partitions in $[0, 1]$ and their generalizations.

5 Publications and preprints

Peer-reviewed publications

I. M. Infusino, T. Kuna, *The full moment problem on subsets of probabilities and point configurations*, **Journal of Mathematical Analysis and Applications** 483 (1): 123551, 2020.

II. M. Ghasemi, M. Infusino, S. Kuhlmann, M. Marshall, *Moment problem for symmetric algebras of locally convex spaces*, **Integral Equations and Operator Theory** 90 (3): Art.29, 19 pp., 2018.

III. M. Infusino, S. Kuhlmann, M. Marshall, *On the determinacy of the moment problem for symmetric algebras of a locally convex space*, in *Operator Theory in Different Settings and Related Applications*, **Operator Theory Advances Applications** 262: 243–250, Springer, 2018.

IV. M. Infusino, S. Kuhlmann, Infinite dimensional moment problem: Open questions and applications, in *Ordered Algebraic Structures and Related Topics*, **Contemporary Mathematics** 697: 187–201, Amer. Math. Soc., Providence, RI, 2017.

V. M. Infusino, T. Kuna, J. L. Lebowitz, E. R. Speer, *The truncated moment problem on* $\mathbb{N}_0$, **Journal of Mathematical Analysis and Applications** 452 (1): 443–468, 2017.

VI. E. Caglioti, M. Infusino, T. Kuna, *Translation invariant realizability problem on the* $d-$*dimensional lattice: an explicit construction*, **Electronic Communications in Probability** 21(45): 1–9, 2016.

VII. M. Infusino, *Quasi-analyticity and determinacy of the full moment problem from finite to infinite dimensions*, in *Stochastic and Infinite Dimensional Analysis*, **Trends in Mathematics**, Chap. 9: 161–194, Birkhäuser, 2016.

VIII. M. Infusino, T. Kuna, A. Rota, *The full infinite dimensional moment problem on semialgebraic sets of generalized functions*, **Journal of Functional Analysis** 267 (5): 1382–1418, 2014.

IX. M. Drmota, M. Infusino, *On the discrepancy of some generalized Kakutani's sequences of partitions*, **Uniform Distribution Theory** 7 (1): 75–104, 2012.

X. M. Infusino, A. Volčič, *Uniform distribution on fractals*, **Uniform Distribution Theory** 4 (2): 47–58, 2009.

Preprints

XI. M. Infusino, S. Kuhlmann, T. Kuna, P. Michalski, *Projective limit techniques for the infinite dimensional moment problem*, arXiv:1906.01691, submitted.

XII. R. Curto, M. Ghasemi, M. Infusino, S. Kuhlmann, *The truncated moment problems for unital commutative* $\mathbb{R}$*-algebras*, arXiv:2009.05115, submitted.

Extended Abstracts

XIII. M. Infusino, *The moment problem on infinite dimensional basic semi-algebraic sets*, in *Real algebraic geometry with a view toward systems control and free positivity*, Oberwolfach Rep. 11 (2): 1019–1022, EMS, 2014.

XIV. D. Henrion, M. Infusino, S. Kuhlmann, V. Vinnikov, *Real algebraic geometry with a view toward moment problems and optimization.* Oberwolfach Reports 14 (1): 771–775, EMS, 2017.

Articles in Preparation

XV. M. Infusino, S. Kuhlmann, T. Kuna, P. Michalski, *Topological aspects of the infinite dimensional moment problem*, in preparation.

XVI. M. Infusino, T. Kuna, J. L. Lebowitz, E. R. Speer, *The truncated moment problem on the two dimensional lattice*, in preparation.

6 Research income

6.1 Research grants

Principal Investigator for the following:

- *Eliteprogramme for Postdoctoral researchers 2017* (114000€) awarded by the Baden-Württemberg Foundation to support my project: "Crossroads between finite and infinite dimensional truncated moment problems" from January 2018 to September 2020.
- *Young Scholar Fund 2018* (7500€) awarded by University of Konstanz within the Excellence Initiative to support my project: "Moment techniques for point configuration spaces" during 2018.
- *Co-funding for Eliteprogramme for Postdoctoral researchers 2017* (12000€) awarded by Konstanz University to complement the support to my project: "Crossroads between finite and infinite dimensional truncated moment problems" from January 2018 to September 2020.
- *Zukunftskolleg Mentorship 2016* (5000€) awarded by the Zukunftskolleg of Konstanz University to support my project "Moment problems with a view towards applications in statistical physics".
- *Zukunftskolleg Mentorship 2015* (5000€) awarded by the Zukunftskolleg of Konstanz University to support my project: "Infinite dimensional moment problems on locally convex spaces" (returned).
- *Young Scholar Fund 2015* (5000€) awarded by University of Konstanz within the Excellence Initiative to support my project: "Infinite dimensional moment problem and applications".
- *3 month–Postdoctoral Fellowship* to carry my own research project at the Centro de Matemática e Aplicações Fundamentais of Lisbon University in 2014 (returned).
- *LMS Research in Pairs grant* (1300€) awarded by the London Mathematical Society to support my collaboration with J.B. Lasserre (LAAS-CNRS, France) at University of Reading in 2014 (returned).
- *INdAM-COFUND Marie Curie Actions outgoing fellowship* (70800€), 11/2012–10/2014. My proposal on "Realizability and quantum representability problem" scored 4.925 out of 5 points (the second highest score) and was awarded one of the 5 fellowships offered in the call.

Participant in the following:

- *Innovative Training Network POEMA (Polynomial Optimization, Efficiency through Moments and Algebra)* awarded by European Commission Marie Sklodowska-Curie for the period 2019-2022.

Co-Principal Investigator for the following:

- *Andrejewski Stiftung–conference grant* (7500€) to support the organization of an interdisciplinary meeting at University of Konstanz in the series "Andrejewski-Tage 2016" together with Sergio Albeverio (Hausdorff Center of Mathematics) and Salma Kuhlmann (University of Konstanz).
- *Young Researchers Project Fund* (2650€), 10/2010–10/2011, awarded by Italian Ministery of Education to support the joint project "Probabilistic and geometric aspects of Steiner symmetrizations" together with Marina Di Costa and Aljosa Volčič (University of Calabria, Italy).

6.2 Scholarships

- *Doctoral fellowship* from the Italian Ministery of Education supporting my Phd studies, 2007-2010.
- *Scholarship from "Fondazione Calabria Scienze Oggi"* supporting a supplementary scientific training during my bachelor and master studies, 10/2002 –09/2007. I was one of the first five students (selected out of all the freshers of the Faculty of Sciences at University of Calabria enrolled in 2002) awarded with this fellowship since its establishment.

6.3 Travel grants

- Travel and accommodation grant for the participation in the *"Panorama of Mathematics"*, Hausdorff Center for Mathematics, Bonn, Germany, (20–23/10/2015).
- *DAAD (German Academic Exchange Service) – Travel Grant* for the participation in the "Ordered Algebraic Structures and Related Topics", CIRM, Marseille, France, (12–16/10/2015).
- Travel and accommodation grant for the participation in the *"Program on inverse moment problems: the crossroads of Analysis, Algebra, Discrete Geometry and Combinatorics"*, Institute for Mathematical Sciences, Singapore, (6-19/01/2014).
- Travel grant for the participation in *"Young women in Discrete Mathematics"*, Research Institute for Discrete Mathematics, Bonn, Germany (7-9/06/2013).
- Travel grant for the participation in the *"Courses for Phd students: Random trees and coalescents"* at CIRM, Marseille, France (20-25/09/2010).

7 International research stays

- *Institut Henri-Poincaré, France* –October 2019 March 2018; (collaboration with D. Henrion, S. Kuhlmann, V. Vinnikov on the subject: "Connections between real algebraic geometry, infinite dimensional moment problems and optimization").
- *University of Reading, UK* – Sept. 2019; Jan. 2019; March 2018; Dec. 2016; Feb. 2016; Nov. 2015 (collaboration with T. Kuna on the subject: "Realizability problem on configuration spaces").
- *Newcastle University, UK* – January 2019, October 2016; (collaboration with M. Dritschel and D. Kimsey on the subject: "Moment problems and interpolation").
- *Rutgers University, USA* – September-October 2018; September 2016; March-April 2015; March 2014; April 2013; April-May 2012 (collaboration with J. Lebowitz and E. R. Speer on the subject: "Connections between realizability problem and classical moment theory").
- *Czech Technical University, Czech Republic* – September 2018; (collaboration with D. Henrion, on the subject: "New approaches for non-linear PDEs via moment problems").
- *École normale supérieure, France* – October 2017; (collaboration with D. Henrion, S. Kuhlmann, V. Vinnikov on the subject: "Connections between real algebraic geometry, infinite dimensional moment problems and optimization").
- *University of Saskatchewan, Canada* – August 2016 (collaboration with M. Ghasemi on the subject: "Generalized truncated moment problems").
- *University of Cologne, Germany* – June 2016 (collaboration with F. Vallentin and D. de Laat on the subject: "Realizability problems in discrete geometry and optimization").
- *CCM of University of Madeira, Portugal* – August 2014 (collaboration with J. L. da Silva on the subject: "Moments and particle systems dynamics").
- *Roma La Sapienza, Italy* – July 2013; December 2013 (collaboration with E. Caglioti on the subject: "Realizability problem on the lattice").
- *TU-Wien, Austria* – April-June 2010; Oct.-Nov.2009; March 2009 (collaboration with M. Drmota on the subject: "Discrepancy of some generalized Kakutani's sequences of partitions").

8 Invited/Contributed talks

8.1 Invited talks at conferences

1. 20/10/2020; 26-27/11/2020; 11/12/2020–*"POEMA (Polynomial Optimization, Efficiency through Moments and Algebra) 2nd Online-Workshop"*.
2. 27–29/01/2020–*"Geometry and Algebra in Stochastic Dynamics"*, Universitá degli Studi di Milano, Italy. Talk: "From finite to infinite dimensional moment problems".
3. 26–31/05/2019–*"Geometry of Real Polynomials, Convexity and Optimizations"*, Banff International Research Station for Mathematical Innovation and Discovery, Banff, Alberta, Canada. Talk: "From finite to infinite dimensional moment problems".
4. 25/02–1/03/2019–*"Workshop on Local Statistics of Point Sequences"*, Johannes Kepler University Linz, Austria. Invited speaker with the talk: "The realizability problem for point processes: explicit constructions on the lattice".
5. 11–15/02/2019–*"Operator Theoretic Methods in Dynamic Data Analysis and Control"*, Institute of Pure and Applied Mathematics (IPAM), University of California at Los Angeles, USA. Talk: "The realizability problem for point processes: explicit constructions on the lattice".
6. 23-27/07/2018 – Special session "Free analysis and real algebraic geometry" in the workshop *"IWOTA–International Workshop on Operator Theory and its Applications "*, East China Normal University, Shanghai, China. Talk: "Projective limit techniques for the infinite dimensional moment problem".
7. 16-20/07/2018 – Special session "Positivity, Factorizations, and State Space Realizations for Scalar and Matrix Variables" in the workshop *"23rd International Symposium on Mathematical Theory of Networks and Systems–MTNS "*, Hong Kong University of Science and Technology, Hong Kong. Talk: "The realizability problem for point processes: an explicit construction on the $d-$dim. lattice".
8. 5–7/07/2017–*"Mathematical approaches to complex systems: Statistical mechanics and partial differential equations"–Part II* University of Lisbon, Portugal. Talk: "The realizability problem for point processes."
9. 3–5/07/2017–*"Mathematical approaches to complex systems: Statistical mechanics and partial differential equations"–Part I* Arrabida, Portugal. Talk: "The infinite dimensional moment problem as a new approach to realizability."
10. 30–31/08/2016 – *"XIX Colloquiumfest"* dedicated to Murray Marshall, University of Saskatchewan, Saskatoon, Canada. Talk: "Moment problems on symmetric algebras of locally convex real spaces".
11. 22–23/02/2016 –Workshop on "Moment Problems" of the *Joint LMS Research Group: Mathematical modeling of random multicomponent systems*, University of Reading, UK. Talk: "The full moment problem on configuration spaces".
12. 12–16/10/2015 –*"Ordered Algebraic Structures and Related Topics"*, CIRM, Marseille, France. Talk: "Moment problem for symmetric algebras of locally convex spaces".
13. 4/08/2014 – *"XLII Madeira Math Encounter"*, CCM of University of Madeira, Portugal. Talk: "The moment problem on infinite dimensional basic semi-algebraic sets".
14. 14-18/07/2014 – Special session "Linear operator theory, function theory, and linear systems" in the workshop *"IWOTA–International Workshop on Operator Theory and its Applications "*, VU-University, Amsterdam, Netherlands. Talk: "The infinite moment problem on semi-algebraic sets".
15. 6-12/04/2014 – *"Real algebraic Geometry with a view toward systems control and free positivity"*, Matematisches Forschungsinstitut Oberwolfach, Germany. Talk: "The moment problem on infinite dimensional basic semi-algebraic sets".
16. 7-16/01/2014 – *"Polyhedra, Lattices, Algebra, and Moments"*, Institute of Mathematical Science, Singapore. Talk: "The realizability problem as an infinite dimensional moment problem".
17. 24-28/06/2013 – *"Stochastic and Infinite Dimensional Analysis"*, ZIF, Bielefeld, Germany. Talk: "The full infinite dimensional moment problem for semi-algebraic sets of generalized functions".

8.2 Invited research seminars

1. 9/12/2019 –*Mathematical Seminars at University of Cagliari*, Italy. Talk: "Il problema dei momenti: oltre la dimension finita".
2. 2/12/2019–*Probability Seminars at LMU Munich*, Germany. Talk: "Projective limit techniques for the infinite dimensional moment problem".
3. 29/01/2019– *Functional Analysis seminars at Newcastle University*, UK. Talk: "Projective limit techniques for the infinite dimensional moment problem".
4. 16/01/2018–*AG Stochastische Geometrie at Karlsruhe Institute of Technology*, Germany. Talk: "The infinite dimensional moment problem as an approach to realizability".
5. 25/07/2017– *Seminars of the Collaborative Research Centre 1060: The Mathematics of Emergent Effects*, Rheinische Friedrich-Wilhelms-Universität Bonn, Germany. Talk: "The infinite dimensional moment problem as a new approach to realizability".
6. 13/12/2016– *Analysis seminars at the University of Reading*, UK. Talk: "Quasi-analyticity and determinacy of the moment problem".
7. 11/10/2016– *Analysis seminars at Newcastle University* , UK. Talk: "Moment problems for symmetric algebras of locally convex real spaces".
8. 15/06/2016 –*"Oberseminar Optimierung, Geometrie und diskrete Mathematik"*, Universität zu Köln, Germany. Talk: "The infinite dim. moment problem for symmetric algebras of lc real spaces".
9. 3–4/06/2016 –*"Women in Probability"*, TU München, Germany. Talk: "The realizability problem for point processes".
10. 27/11/2015 – *Analysis seminars at the University of Reading*, UK. Talk: "Moment problem for symmetric algebras of locally convex spaces".
11. 07/11/2014 – *"Oberseminar Reelle Geometrie und Algebra"*, University of Konstanz, Germany. Talk: "New directions in the infinite dimensional moment problem".
12. 13/11/2013 – *"Konstanz Women in Mathematics"*, University of Konstanz, Germany. Talk: "A journey through the moment theory on semi-algebraic sets".
13. 19/10/2012 – *Analysis day at the University of Reading*, UK. Talk: "Realizability problem for moment measures".
14. 09/12/2011– *Analysis seminars at the University of Reading*, UK. Talk: "Uniform distribution of sequences of points and partitions".
15. 31/10/2009 – *AG Diskrete Mathematik at TU Wien.* Talk: "Uniform distribution on fractals".

8.3 Contributed talks at conferences

1. 7/09/2018 – *"Minisymposium: Real Algebraic Geometry in Action at the General Meeting of European Women in Mathematics"*, University of Graz, Austria. Talk: "Projective limit techniques for the infinite dimensional moment problem".
2. 11-15/09/2017 – *"19th ÖMG Congress and Annual DMV Meeting"*, Paris-Lodron University of Salzburg, Austria. Talk: "Moment problems on symmetric algebras of locally convex spaces".
3. 21-25/08/2017 – *"SOS: Sum of Squares, Real Algebraic Geometry and its Applications"*, University of Innsbruck, Austria. Talk: "The truncated discrete moment problem on the real line".
4. 9-10/06/2017 – *"European Women in Mathematics - German Chapter"*, University of Bielefeld, Germany. Talk: "The realizability problem for point processes".
5. 18-22/07/2016 – *"International Workshop on Operator Theory and its Applications "*, St. Louis, USA. Talk: "The infinite dim. moment problem for symmetric algebras of locally convex spaces".
6. 21-25/09/2015 – *"Annual meeting of the German Mathematical Society (DMV-2015)"*, Hamburg, Germany. Talk: "The moment problem on infinite dimensional basic semi-algebraic sets".
7. 24-25/09/2015 – *"Minisymposium at DMV-2015: Moment Problem and Applications in Memoriam Murray Angus Marshall 24.3.1940–1.5.2015"*, Hamburg, Germany. Talk: "A continuous moment problem for locally convex spaces".

8. 19/06/2015 – *"Konstanz: Women in Maths-II"*, Konstanz, Germany. Talk: "A journey through the moment theory: the question of determinacy".
9. 1-2/05/2015 – *"European Women in Mathematics - German Chapter"*, Castle Rauischholzhausen, Marburg, Germany. Talk: "New directions in the infinite dimensional moment problem".
10. 17-19/07/2013 – *"Polynomial Optimisation - Workshop"*, INI, Cambridge, UK. Talk: "Concrete conditions for realizability of moment functions via quadratic modules".
11. 7-9/06/2013 – *"Young women in Discrete Mathematics"*, Research Institute for Discrete Mathematics, Bonn, Germany. Talk: "On the discrepancy of some sequences of partitions".
12. 6-8/05/2012 – *"107th Statistical Mechanics Conference"*, Rutgers University, New Brunswick, USA. Talk: "Uniform distribution on fractals".
13. 12-17/09/2011 – *"XIX Conference of Italian Mathematical Society (UMI)"*, University of Bologna, Italy. Talk: "Discrepancy of generalized Kakutani's sequences".
14. 4-15/04/2011 – *"Spring School in Discrete Probability, Ergodic Theory and Combinatorics"*, TU-Graz, Austria. Talk: "Discrepancy of Kakutani's sequences".
15. 5-9/07/2010 – *"II International Conference on Uniform Distribution Theory"*, Strobl, Austria. Talk: "Uniform distribution on fractals and Khodak's algorithm".

8.4 Poster presentations at conferences

1. 1-8/07/2012 – *"6th European Congress of Mathematics"*, Jagiellonian University, Kracow, Poland. Poster: "On the discrepancy of some generalized Kakutani's sequences of partitions".

9 Participation in other conferences, workshops and schools

- 27/05/2020–16/09/2020–*"POEMA (Polynomial Optimization, Efficiency through Moments and Algebra) Online Learning Weeks"*.
- 01–06/02/2020–*"Real Algebraic Geometry with a View Toward Hyperbolic Programming and Free Probability"*, Mathematical Research Institute, Oberwolfach, Germany.
- 15–17/01/2020–*"POEMA (Polynomial Optimization, Efficiency through Moments and Algebra) 1st Workshop"*, Universitá degli Studi di Firenze, Italy.
- 22–26/07/2019–*"International Workshop in Operator Theory and its Applications (IWOTA) 2019"*, Instituto Superior Técnico, University of Lisbon, Portugal.
- 8/07/2019–*"Bruce Reznick 66 fest"*,University of Bern, Switzerland.
- 31/03–5/04/2019–*"Multivariable Spectral Theory and Representation Theory"*, Banff International Research Station for Mathematical Innovation and Discovery, Banff, Alberta, Canada.
- 26/11–2/12/2017–*"Reflection Positivity"*, Mathematisches Forschungsinstitut Oberwolfach, DE.
- 20–23/10/2015 –*"Panorama of Mathematics"*, Hausdorff Center for Mathematics, Bonn, Germany.
- 4–5/12/2014 –*"Geometrietag 2014"*, TU-Dresden, Dresden, Germany.
- 11/06/2014 –*"INdAM's day"*, SISSA, Trieste, Italy.
- 14–18/10/2013 –*"Uniform distribution and quasi-Monte Carlo methods"*, RICAM, Linz, Austria.
- 15–17/07/2013 – *"Summer school in Polynomial Optimisation"*, INI, Cambridge, UK.
- 21–25/05/2012 – *"Stochastic Dynamics in Action"*, ZIF, Bielefeld, Germany.
- 25–30/06/2012 – *"III International Conference on Uniform Distribution Theory"* , Congress Center of the Slovak Academy of Sciences, Smolenice, Slovakia.
- 15–22/07/2011– *"Stochastic and Real World Models"*, University of Bielefeld, Germany.
- 04–15/04/2011– *"Spring School in Discrete Probability, Ergodic theory and Combinatorics"*, Graz University of Technology, Austria.
- 18/02/2011– *"Minicolloquium on Convex Geometry "*, University of Calabria, Italy.
- 20–25/09/2010 – *"Courses for Phd students: Random trees and coalescents"*, CIRM, France.
- 13–17/07/2009 – *"Conference on Convex and Discrete Geometry"*, TU-Wien, Austria.
- 27/07/2008 to 29/08/2008 – *"Interuniversity Mathematical School"* (S.M.I.), Perugia, Italy.

10 Prizes and awards

- 08/07/2012 – Prize for *"The best research poster"* (11 posters awarded out of 180 presented) at the 6th European Congress of Mathematics (6ECM), Jagiellonian University, Kraków, Poland.
- 19/07/2008 – Award for *"The best graduate in 2007"* from the Faculty of Mathematics, Physics and Natural Sciences of University of Calabria, Italy.

Part III

Teaching

11 Teaching activity

The courses 1, 2, 4, 5, 6, 7, 9, 10 and 13 were entirely designed and delivered by me, while for the remaining courses I was either co-lecturer delivering half of the lectures or teaching assistant designing the assignments and/or leading the exercise groups. I was coordinating the seminar series at 3, 8 and 11, offering a list of topics to be developed in more details by each of the students under my supervision.

1) **SS 2020 – Lecturer, Topological algebras, University of Konstanz**
(online-course in English for master students in Mathematics).

2) **WS2019/2020 – Lecturer, Topological Vector Spaces II, University of Konstanz**
(course in English for master and Phd students in Mathematics).
Evaluation on a 5-point grading scale ranging from 1 (excellent, sehr gut) to 5 (insufficient, nicht ausreichend): Teaching-Learning Index (LLI, i.e. Lehr-Lern-Index) = 1.45; Overall satisfaction (Gesamtzufriedenheit)=1.83. The average LLI in Mathematics in the previous four semesters was 2.05.

3) **SS2019 – Lecturer, Positive polynomials and moment problems, University of Konstanz**
(course in English for master and Phd students in Mathematics).
Evaluation on a 5-point grading scale ranging from 1 (excellent, sehr gut) to 5 (insufficient, nicht ausreichend): Teaching-Learning Index (LLI, i.e. Lehr-Lern-Index) = 1.47; Overall satisfaction (Gesamtzufriedenheit)=1.2. The average LLI in Mathematics in the previous four semesters was 1.96.

4) **SS 2019 – TA, Master Seminars on real algebraic geometry, University of Konstanz, DE**
(seminar series in English for master students in Mathematics).

5) **WS 2018/2019 – Lecturer, Topological vector spaces, University of Konstanz, DE**
(course in English for master and Phd students in Mathematics).
Evaluation on a 5-point grading scale ranging from 1 (excellent, sehr gut) to 5 (insufficient, nicht ausreichend): Teaching-Learning Index (LLI, i.e. Lehr-Lern-Index) = 1.51; Overall satisfaction (Gesamtzufriedenheit)=1.14. The average LLI in Mathematics in the previous four semesters was 1.94.

6) **SS 2018 – Lecturer, Topological algebras, University of Konstanz, DE**
(course in English for bachelor and master students in Mathematics).
Evaluation on a 5-point grading scale ranging from 1 (excellent, sehr gut) to 5 (insufficient, nicht ausreichend): Teaching-Learning Index (LLI, i.e. Lehr-Lern-Index) = 1.41; Overall satisfaction (Gesamtzufriedenheit)=1.0. The average LLI in Mathematics in the previous four semesters was 2.00.

7) **WS 2017/2018 – Lecturer, Topological vector spaces II, University of Konstanz, DE**
(course in English for master and Phd students in Mathematics).
Evaluation on a 5-point grading scale ranging from 1 (excellent, sehr gut) to 5 (insufficient, nicht ausreichend): Teaching-Learning Index (LLI, i.e. Lehr-Lern-Index) = 1.45; Overall satisfaction (Gesamtzufriedenheit)=1.2. The average LLI in Mathematics in the previous four semesters was 2.01.

8) **SS 2017 – Lecturer, Topological vector spaces, University of Konstanz, DE**
(course in English for bachelor and master students in Mathematics).
Evaluation on a 5-point grading scale ranging from 1 (excellent, sehr gut) to 5 (insufficient, nicht ausreichend): Teaching-Learning Index (LLI, i.e. Lehr-Lern-Index) = 1.19; Overall satisfaction (Gesamtzufriedenheit)=1.0. The average LLI in Mathematics in the previous four semesters was 2.03.

9) **WS 2016/2017 – TA, Bachelor Seminars on linear algebra, University of Konstanz, DE** (seminar series in German for bachelor students in Mathematics).
Evaluation on a 5-point grading scale ranging from 1 (excellent, sehr gut) to 5 (insufficient, nicht ausreichend): Teaching-Learning Index (LLI, i.e. Lehr-Lern-Index) = 1.87; Overall satisfaction (Gesamtzufriedenheit)=1.78. The average LLI in Mathematics in the previous four semesters was 2.05.

10) **SS 2016 – Lecturer, Topological vector spaces II, University of Konstanz, DE** (course in English for master and Phd students in Mathematics).
Evaluation on a 5-point grading scale ranging from 1 (excellent, sehr gut) to 5 (insufficient, nicht ausreichend): Teaching-Learning Index (LLI, i.e. Lehr-Lern-Index) = 1.59; Overall satisfaction (Gesamtzufriedenheit)=1.2. The average LLI in Mathematics in the previous four semesters was 2.1.

11) **WS 2015/2016 – Lecturer, Topological vector spaces I, University of Konstanz, DE** (course in English for master and Phd students in Mathematics).

12) **SS 2015 – TA, Master Seminars on real algebraic geometry, University of Konstanz, DE** (seminar series in English for master students in Mathematics).

13) **WS 2014/2015 – TA, Real algebraic geometry, University of Konstanz** (preparation of the weekly assignments and coordination of the exercise groups related to the course in English for master students in Mathematics)

14) **SS 2014 – Lecturer, Mathematical basics for Architecture, La Sapienza University, IT** (intensive course in Italian for bachelor students in Architecture).

15) **WS 2013/2014 – Co-lecturer, Functional analysis I, University of Reading, UK** (course in English for bachelor students in Mathematics).

16) **SS 2013 – TA, Foundations of mathematics, University of Reading, UK** (exercise class in English for bachelor students in Mathematics).

17) **WS 2011/2012 to WS 2013/2014 – TA, Real analysis, University of Reading, UK** (exercise class in English for bachelor students in Mathematics).

18) **SS 2009 – TA, Linear algebra, University of Calabria, IT** (exercise class in Italian for bachelor students in Mathematics, Physics, and Chemistry).

19) **WS 2008/2009 – Co-lecturer, Biostatistics II, University of Calabria, IT** (course and exercises in Italian for bachelor students in Biology).

20) **WS 2005/2006 to WS 2008/2009 – Tutor, Geometry and linear algebra, University of Calabria, IT** (exercise in Italian for undergraduates in Mathematics, Physics, and Chemistry).

12 Supervision activity

PhD Thesis supervision

- Patrick Michalski (PhD student in Mathematics at University of Konstanz): *Infinite dimensional moment problems*; since April 2018, joint supervision with Salma Kuhlmann.
- Aldo Rota (Phd student in Mathematics, University of Reading, UK): *Moment problem for point random fields and its applications*; April 2010–February 2014, joint supervision with Tobias Kuna.

Master Thesis supervision

- Sarah Tanja Hess (Master student in Mathematics at University of Konstanz): January 2020–September 2020, joint supervision with Salma Kuhlmann.
- Patrick Michalski (Master student in Mathematics at University of Konstanz): *On Schmüdgen's fiber theorems for moment problems*; December 2016–October 2017, joint supervision with Salma Kuhlmann.
- Siqi Yao (Master student in Mathematics in the dual-degree program between University of Konstanz and Shanghai Jiao Tong University): *Positive polynomials and sum of squares in formal power series rings*; April 2015–March 2016, joint supervision with Salma Kuhlmann.

Bachelor Thesis supervision

- Hasina Uddin (Bachelor student in Mathematics, University of Reading, UK): *Approximation of irrational numbers via continued fractions*; October 2013–March 2014.
- Harry Eaton (Bachelor student in Mathematics, University of Reading, UK): *Archimedes' cattle problem and Pell's equation*, October 2013–March 2014.
- Colm Teeluck (Bachelor student in Mathematics, University of Reading, UK): *Continued fractions and Farey diagram*; October 2013–March 2014.

Part IV

Administrative roles and Outreach activities

13 Academic staff/student recruitment

- Since 2014, I have been member of hiring committees in Mathematics at University of Konstanz both as a field expert and as a representative for the Equal Opportunity Council.
- From 2011 to 2014 I regularly contributed to the *selection of prospective students* applying for a bachelor in Mathematics at University of Reading.

14 Organization of scientific meetings

- 23-27/08/2021 – Special session at MTNS 2020 (24th International Symposium on Mathematical Theory of Networks and Systems), University of Cambridge, UK: "Moment Problems, Convex Algebraic Geometry, and Semidefinite Relaxations".
- 25–26/07/2019–Special session at IWOTA-2019, Instituto Superior Técnico, University of Lisbon, Portugal: *"Truncated moment problems"* together with Salma Kuhlmann (University of Konstanz).
- 6-7/12/2018–*"KWIM-Festtage": Closing conference of the project Konstanz Women In Mathematics* at the University of Konstanz, Germany together with Salma Kuhlmann.
- 3–7/09/2018–Minisymposium *"Real algebraic geometry in action"* at the European Women in Mathematics General Meeting 2018, Graz, Austria together with Salma Kuhlmann.
- 3-4/05/2018–*"Conference of the German Chapter of European Women in Mathematics 2018"*, Heidelberg, Germany, together with Michael Winckler (Interdisziplinäres Zentrum für Wissenschaftliches Rechnen, Heidelberg), Federica Fanoni and Anna Wienhard (Mathematisches Institut, Heidelberg).
- 5–11/03/2017–Workshop at the Mathematisches Forschungsinstitut Oberwolfach: *"Real Algebraic Geometry with a view toward Moment Problems and Optimization"* together with Didier Henrion (LAAS-CNRS Toulouse, France), Salma Kuhlmann (University of Konstanz, Germany) and Victor Vinnikov (Ben Gurion University of the Negev, Israel).
- 18–22/07/2016–Special session at IWOTA-2016, Washington University, St. Louis: *"Finite and infinite dimensional moment problems"* together with Salma Kuhlmann (University of Konstanz, Germany) and Tobias Kuna (University of Reading, UK).
- 7–9/04/2016– Meeting in the series Andrejewski-Tage 2016 at University of Konstanz: *"Moment problems in theoretical physics"* together with Sergio Albeverio (Hausdorff Center of Mathematics, Bonn, Germany) and Salma Kuhlmann (University of Konstanz, Germany).
- 24–25/09/2015–Minisymposium at DMV-2015, Hamburg: *"Moment Problem and Applications in Memoriam Murray Angus Marshall 24.3.1940–1.5.2015"* together with Salma Kuhlmann (University of Konstanz, Germany) and Tobias Kuna (University of Reading, UK).

15 Outreach activities and equality initiatives

- Invited speaker at the *Herbsttagung Arbeitskreis Frauen und Mathematik*, October 25-26, 2019, at University of Würzburg, Germany. Talk: "Gender Gap in Mathematics: still a problem for German research, but...".
- Coordinator of the project "Konstanz Women in Mathematics: paths in studies and career" at University of Konstanz, Germany from January 2016 to December 2018, which aimed to promote female mathematicians at all levels through several activities among which a lecture series giving more visibility to women in mathematics and their scientific achievements.
- Organizer of the informative event *Studying abroad with ALGANT* at University of Konstanz on June 26th, 2018. The event was aimed to present to the bachelor students in Mathematics at Konstanz the two-year master programme in pure mathematics offered by the ALGANT (ALgebra, Geometry And Number Theory) consortium consisting of 10 universities in and beyond Europe.
- Co-organizer of the opening of the exhibition *Women of Mathematics throughout Europe. A gallery of portraits* at University of Konstanz on October 19th, 2017. The event was supported by the Equal Opportunity Council and included public talks for a large audience (even non-academic) on the history and the challenges of women in mathematics.
- Co-organizer of a *focus group discussion at the University of Bielefeld* about: "Women in Mathematics in Germany: challenges and opportunities" on June 9th, 2017 in occasion of the European Women in Mathematics German Chapter Conference.
- Co-organizer of a *fishbowl discussion at the Mathematisches Forschungsinstitut Oberwolfach* about: "Real nonnegative representations for women in mathematics" on March 8th 2017.
- Invited speaker at the *Panel discussion at IWOTA 2016* entitled "Women in Mathematics", on July 19th 2016 at Washington University in St. Louis, USA.Talk: "Women in Mathematics in Germany".
- Active participation in the network *Women in Academia* at University of Reading in 2012–2014.
- Active participation in the *Night of Researchers* at La Sapienza University in Rome in Italy on September 24th, 2014.
- I contributed to the *Athena SWAN Action Program* of the School of Matematical and Physical Sciences at University of Reading from 2012 to 2014 as representative for the math department in the Athena Swan Research Staff Focus Group.

16 Memberships

- Member of German Mathematical Society (DMV) since 2019.
- Member of European Women in Mathematics (EWM) since 2014.
- Member of Italian Mathematical Society (UMI) since 2009.
- Member of the Italian National Group of Mathematical Analysis, Probability and their Applications (GNAMPA) since 2009.

Part V
Additional skills and training

17 Languages

Italian (mother tongue), English (Level C1), German (Level B1), Spanish (Level A2)

18 Computer skills

Word, Excel, Power Point, Latex, Cabri, Maple, MatLab, C++

19 Additional professional training

The Baden Württenberg Stiftung organizes regular meetings for the fellows of the Eliteprogramm to encourage the interdisciplinary exchange and offer additional training to the fellows.

- *Networking meeting of the Eliteprogramme fellows* (4-5/11/2019) at the Heidelberg Academy of Sciences, Germany.
- *Networking meeting of the Eliteprogramme fellows* (4-5/07/2018) at the Baden-Württemberg Stiftung headquarter in Stuttgart, Germany.
- *Networking meeting of the Eliteprogramme fellows* (28-29/11/2017) at the Heidelberg Academy of Sciences, Germany.

Events organized by the Academic Staff Development of University of Konstanz which I attended:

- *Compact course about appointment procedures in Germany* (1/02/2018). The course provided an introduction to the appointment procedure for a professorship within the German system.
- *Women in the EU-Research* (12/05/2017). The course offered an overview about the structure and the goals of the research framework Horizon 2020 as well as the different ERC programs, showing the success factors for female scientists.

Special training sessions for INdAM–COFUND Marie Curie fellows offered by the Italian National Institute of High Mathematics (INdAM) at La Sapienza University of Rome, Italy:

- *Java and JavaScript: similarities and differences*, (22-23/07/2014) by A. Mancini. This course offered a comparison between the different nature of the two languages and a discussion about their respective advantages in being efficient and maintainable.
- *Computer-assisted theorem proving*, (22-23/07/2014) by M. Maggesi. This course provided me with an introduction to mechanized mathematics and an overview of the most recent research results in this area, illustrating some live examples through a practical tutorial.
- *An overview of high level paradigms and programming languages* (22-23/07/2014) by G. Ciolli. This was a transversal course in between several computer languages aimed to illustrate certain aspects of computer programming which are useful to a professional mathematician.
- *Research projects: applying for funding* (21/07/2014) by F. Bracci, C. Stoppato, G. Ciolli. This seminar offered a practical training for the preparation of applications aimed to get funding for research projects through the discussion of examples of successful applications.

Training programs offered by the Center for Staff Training and Development at University of Reading:

- *Grade 6 workshop: Understanding and encouraging academic promotion to Grade 7* (12/12/2012).
- *Research Staff Conference 2012: Research Staff and Research Leaders - Resolving Diverging Interests* (28/11/2012). This conference aimed to support the career development of Research Staff and focused on the relationship between Principal Investigators and Research Staff.
- *Data Protection Act and Freedom of Information training module* (18/11/2012).
- *Pronunciation skills for academic staff* (15/11/2012), which was extremely useful to improve my lecturing and presenting in English. The facilitator was a professional voice coach who gave us the opportunity for individual assessment and guidance.
- *Developing your presentation skills* (22/03/2012), which offered a training about how to give conference presentations, seminars or to lecture more effectively.
- *Introduction to write successful proposals* (7/03/2012). This session provided me with the key information I would need to be able to write a research proposal. It covered the structure, content and presentation of research proposals, impact plan requirements and how grants are assessed.
- *Small group teaching* (20/02/2012), which explored the value of small group sessions in student learning and the role of research staff when acting as session leaders. It covered topics such as techniques to encourage interaction, questioning and listening skills, dealing with group dynamics.