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I am a postdoc at the Department of Basic and Applied Sciences for Engineering (SBAI), University of Rome “La Sapienza” (Italy) from June 1, 2021. The scientific director is prof. Roberto Conti.

I have been awarded a fellowship under the “FY2021 JSPS Postdoctoral Fellowship for Research in Japan (Standard)” to conduct my research for 24 months at the University of Tokyo, under the leadership of Prof. Yasuyuki Kawahigashi.

Experience

- June 2021 - present **Postdoctoral researcher** at the Department of Basic and Applied Sciences for Engineering (SBAI), University of Rome “La Sapienza” (Italy). Working on a project entitled “Cuntz-Pimsner algebras associated to complex vector bundles and standard subspaces in algebraic QFT”. Scientific director: Prof. Roberto Conti.
- May 2021 - July 2021 **Guest visiting researcher** at the Institute for Theoretical Physics, University of Leipzig (Germany). Working on a project regarding Entropy and QFT. Supported by the Deutsche Forschungsgemeinschaft (DFG) within the Emmy Noether grant “The quantum stress-energy tensor” CA1850/1-1PI, P.I. Dr. Daniela Cadamuro.
- January 2021 - April 2021 **Oberwolfach Leibniz Fellow** at the Mathematisches Forschungsinstitut Oberwolfach (Germany). Project title: Reflection positive representations and standard subspaces in algebraic QFT.
- September 2020 - December 2020 **Oberwolfach Leibniz Fellow** at the Mathematisches Forschungsinstitut Oberwolfach (Germany). Project title: Beurling–Lax type theorems and their connection with standard subspaces in Algebraic QFT.
- July 2019 - June 2020 **Postdoctoral researcher** at the Department of Mathematics, University of Rome “Tor Vergata” (Italy). Supported by European Research Council Advanced Grant no. 669240 QUEST - “Quantum Algebraic Structures and Models”, PI: Prof. Roberto Longo.

Education

- 01.11.2015 - 30.01.2019 **Ph.D. in Mathematics and Computer Science** - XXXI ciclo - Joint Ph.D. program of Universities of Catania, Palermo and Messina (Italy)
Thesis: Representable functionals and derivations on Banach quasi $*$ -algebras.
Advisor: prof. Camillo Trapani (University of Palermo)
- October 2013 - 22 July 2015 **Master degree in Mathematics with honors** - mentioned for career and E. Gugino prize - University of Palermo - Department of Mathematics and Computer Science
Final project title: “On completions of a C^* -algebra with respect to a locally convex topology” (in Italian). Advisor: Prof. C. Trapani
- October 2010 - 26 July 2013 **Bachelor degree in Mathematics with honors** - University of Palermo - Department of Mathematics and Computer Science
Final project title: “Orthogonal and hermitian spaces on finite cardinality fields” (in Italian). Advisor: Prof. C. Bartolone.
- September 2005 - July 2010 **Maturità scientifica with final mark 100/100** - Liceo Scientifico Statale Albert Einstein - Palermo
Corso sperimentale P.N.I.

Selected Research stays

- 5 to 10 December 2021 Invited online participant at 5-days Workshop Women on Operator Algebras II - BIRS at Banff Center for Arts and Creativity in Alberta, Canada.
- 21 to 22 September 2020 Invited Participant at 5-days Workshop Women on Mathematical Physics - BIRS at Banff Center for Arts and Creativity in Alberta, Canada ([moved online](#))
- 14 to 19 September 2020 Invited stay at the Department of Mathematics - FAU Erlangen-Nürnberg (Germany)

15 July to 12 September 2020	Invited stay at the Institute for Mathematics - Czech Academy of Sciences (Czech Republic)
12 to 20 October 2019	Invited stay at the Department of Mathematics - Seoul National University (South Korea)
16 to 23 April 2019	Invited stay at the Department of Mathematics - University of Münster (Germany)
09 to 16 April 2019	Invited Research stay at the Department of Mathematics - Radboud University of Nijmegen (Netherlands)
4 to 9 November 2018	Invited Participant at 5-days Workshop Women on Operator Algebras - BIRS at Banff Center for Arts and Creativity in Alberta, Canada
23 May to 19 July 2018	Research period at the Department of Mathematics - National and Kapodistrian University of Athens (Greece)
17 September to 20 December 2017	Research period at the Department of Mathematics - National and Kapodistrian University of Athens (Greece)
2 to 30 July 2017	Research period at the Department of Mathematics - Autonomous University of Barcelona (Spain)

Selected Advanced Schools attended

14 to 19 May 2018	NCGOA Spring Institute 2018 - C^* -algebras and Dynamics - University of Münster (Germany).
2 to 6 October 2017	Masterclass on Applications of the UCT for C^* -algebras - Department of Mathematics, University of Copenhagen (Denmark)
16 to 20 October 2017	Masterclass on Rigidity of C^* -algebras associated to dynamics - Department of Mathematics, University of Copenhagen (Denmark)
13 to 17 March 2017	Advanced Course on Operator Algebras: Groupoids, Crossed Products and Rokhlin Dimension - IRP Operator Algebras: Dynamics and Interactions, Autonomous University of Barcelona (Spain)
17 to 25 May 2016	NCGOA Spring Institute 2016 - HIM Trimester on von Neumann Algebras, Bonn (Germany)

Publications

- * M. S. Adamo, K.-H. Neeb, J. Schober, *Reflection positivity and Hankel operators—the multiplicity free case*, arXiv:2105.08522, submitted for publication.
- * M. S. Adamo, *About tensor products of Hilbert quasi $*$ -algebras and their representability properties*, Operator Theory 27 Conference Proceedings, 69-81, 2021.
- * M. S. Adamo, *On some applications of representable functionals of a Banach quasi $*$ -algebra*, Operator theory, functional analysis and applications, 15-31, Oper. Theory Adv. Appl., 282, Birkhäuser/Springer, Cham, (2021).
- * M. S. Adamo, M. Fragoulopoulou, *Tensor products of normed and Banach quasi $*$ -algebras*. J. Math. Anal. Appl., vol. 490, no. 2, 124323, 27 pp. 2020.
- * M. S. Adamo and C. Trapani, *Unbounded derivations and $*$ -automorphisms groups of Banach quasi $*$ -algebras*. Ann. Mat. Pura Appl. (4), vol. 198, no. 5, 1711-1729, 2019.
- * M. S. Adamo, *The interplay between representable functionals and derivations on Banach quasi $*$ -algebras*, Proceedings of the International Conference on Topological Algebras and Their Applications-ICTAA 2018, 48–59, Math. Stud. (Tartu), 7, Est. Math. Soc., Tartu, 2018.
- * M. S. Adamo, C. Trapani, *Representable and continuous functionals on a Banach quasi $*$ -algebra*, Mediterr. J. Math. 14 (2017), no. 4, Paper No. 157, 25 pp.
- * M. S. Adamo, C. Vetro, *Fixed point and homotopy results for mixed multi-valued mappings in 0- complete partial metric spaces*, Nonlinear Analysis: Modelling and Control, vol. 20, no. 2, 159-174, 2015.
- * Ph.D. Thesis: *Representable functionals and derivations on Banach quasi $*$ -algebras*, University of Catania (Italy) 2019.

Fellowships and Awards

- 2021 FY2021 JSPS Postdoctoral Fellowship for Research in Japan (Short Term) to conduct my research for 12 months at the University of Tokyo, under the leadership of Prof. Yasuyuki Kawahigashi. (Declined)
- 2021 FY2021 JSPS Postdoctoral Fellowship for Research in Japan (Standard) to conduct my research for 24 months at the University of Tokyo, under the leadership of Prof. Yasuyuki Kawahigashi. 115 fellowships awarded over 1125 applications (2nd round).
- 2021 Oberwolfach Leibniz Fellowship to spend 13 weeks at the MFO (Germany).
- 2020 Oberwolfach Leibniz Fellowship to spend 12 weeks at the MFO (Germany).
- 01.11.2015 to 31.10.2018 University of Palermo Ph.D. scholarship for the Ph.D. program in Mathematics and Computer Science XXXI ciclo.

Selected research projects and travel grants

- * Member of “Beyond Borders” project - Department of Mathematics at the University of Rome Tor Vergata (Italy) entitled “Interaction of Operator Algebras with Quantum Physics and Non-commutative Structure” - from 1 December 2019 until 31 December 2021- 10.000€, PI: Prof. Yoh Tanimoto (**extended to 2021 due to the Covid-19 pandemic**).
- * Grant EWM to cover the registration fee at the 8th European Congress of Mathematics, Portorož, Slovenia - from 20 to 26 June 2021.
- * 3 Grants INdAM-GNAMPA for participation to conferences abroad (2018, 2020).
- * Member of the projects INdAM-GNAMPA for 2016, 2017, 2018, 2020 - PI: prof. Camillo Trapani.
- * Support given by many conferences, workshop and schools attended.

Conference organization

- * Member of the Organizing committee for the International Conference on Topological Algebras and Applications 2020, held at the Department of Mathematics, University of Palermo, 7 to 11 September 2020. <http://www.math.unipa.it/ictaa2020/> (**postponed to 2022 due to Covid-19 emergency**).

Selected invited contributions

- * Preregistered talk at the Special Section on Topological Algebras, 54th Congress of the Mexican Mathematical Society (online) - 18 October 2021.
- * Online seminar at the Operator Algebras group seminars - Activities of the Center for Mathematics and Theoretical Physics, University of Rome “Tor Vergata” (online) - 14 July 2021.
- * Seminar at the Set Theory & Analysis Seminars - 08 September 2020, Institute of Mathematics, Czech Academy of Sciences (Prague, Czech Republic).
- * Speaker at the Functional Analysis, Approximation Theory and Numerical Analysis Conference (FAATNA 2020) in the section “Operator Algebras and Functional Analysis Methods for Applications” - from 7 to 10 July 2020, University of Basilicata, Campus in Matera (Matera, Italy) (**postponed to 2022 due to Covid-19 emergency**)
- * Speaker at “Operator Algebras in Quantum Field Theory and Quantum Probability” - from 4 to 7 December 2019, Department of Mathematics, University of Rome “Tor Vergata” (Italy)
- * Seminar at the Operator Algebras Seminars - 17 October 2019, Department of Mathematics, Seoul National University (Seoul, South Korea).
- * Speaker at International Meet on Analysis - 24 November 2018, Department of Mathematics, University of Delhi (Delhi, India)
- * Speaker at International Conference on Banach Algebras, Harmonic Analysis and Operator Theory - from 20 to 22 November 2018, Department of Mathematics, Sardar Patel University (Vallabh Vidyanagar, Distr. of Anand - Gujarat, India)

Conferences, Workshops, etc.

During my career, I have attended more than 50 events in around 20 different countries, some of them overseas and some online due to the covid-19 emergency. I mention my participation at the following events:

- ★ International Workshop on Operator Theory and Applications 2021 - 16 to 20 August 2021, Lancaster University (United Kingdom), online.
- ★ 8th European Congress of Mathematics - 20 to 26 June 2021, hosted in Portorož (Slovenia), online.
- ★ International Workshop on Operator Theory and Applications 2019 - 22 to 26 July 2019, Instituto Superior Tecnico of Lisbon and University of Lisbon (Portugal).
- ★ International Congress of Mathematicians 2018 - 1 to 9 August 2018, Riocentro in Rio de Janeiro (Rio de Janeiro, Brazil).
- ★ ICM Operator Algebras Satellite Conference - 26 to 30 July 2018, Hotel Palace Praia in Florianopolis (Santa Catarina, Brazil).

Contributed talks, posters, and seminars

I delivered around 25 contributions (talks, seminars, posters and more), some of them online, in more than 15 different countries. I mention the following contributed talks:

- ★ 28 May 2020: online talk at the 48th Canadian Operator Symposium, Toronto (Ontario, Canada).
- ★ 10 August 2019: talk at Young Mathematicians in C^* -algebras 2019, Copenhagen (Denmark)
- ★ 23 July 2019: talk at the International Workshop on Operator Theory and Applications 2019, Lisbon (Portugal).
- ★ 3 August 2018: poster at International Congress of Mathematicians 2018, Rio de Janeiro (Rio de Janeiro, Brazil).
- ★ 29 May 2018: talk at Great Plans Operator Theory Symposium 2018, Miami University (Oxford, Ohio, United States of America).
- ★ 22, 29 November 2017: seminar at National and Kapodistrian University of Athens (Greece).

Teaching - Bachelor in Computer and System Engineering, University of Rome “La Sapienza” (Italy)

- ★ 30 hours for Mathematical Analysis 2 - taught together with Prof. Virginia De Cicco, A.Y. 2021/2022, 1st semester.
- ★ 30 hours for Mathematical Analysis 1 - taught together with Prof. Roberto Conti, A.Y. 2021/2022, 1st semester.
- ★ 60 hours for Mathematical Analysis 1 - taught together with Prof. Roberto Conti, A.Y. 2019/2020, 1st semester.

Teaching assistant - Bachelor in Mathematics, University of Palermo (Italy)

- ★ 30 hours for Mathematical Analysis 1 - course taught by Prof. Camillo Trapani (1st Module) and by Prof. Giulio Ciraolo (2nd Module) A.Y. 2016/2017, 1st and 2nd semester.
- ★ 21 hours for Mathematical Analysis 1 - course taught by Prof. Camillo Trapani A.Y. 2015/2016, 1st semester.
- ★ 18 hours for Geometry 2 - course taught by Prof. Claudio Bartolone A.Y. 2014/2015, 1st semester.
- ★ 19 hours for Geometry 1 - course taught by Dr. Alfonso Di Bartolo, A.Y. 2013/2014, 1st and 2nd semester.

Women in Mathematics

- ★ Mentorship Training: Diversity, Equity and Inclusion Workshop - 27 August 2021, online
- ★ Contribution to the video “Words of Women in Mathematics in the Time of Corona” - 12 May 2021, online launching of the Movie at the International Centre for Mathematical Sciences, Edinburgh, Scotland.
- ★ Member of Operator Algebras Mentor Network as a Mentee.

Languages

Languages: Italian (Mother tongue), English (Upper intermediate), Catalan (Intermediate), German (Basic), French (Basic).

- ★ International English Language Testing System (IELTS Academic) - Score: Reading 7.0, Writing 6.0, Listening 7.0, Speaking 6.0, Overall score: 6.5 - April 2018
- ★ Certificate of Attendance - Course of German language - Level A1 - Goethe Zentrum - September 2013
- ★ Trinity College London - Graded Examination in Spoken English - Grade 10/12 - May 2010

Associations of which I am a member

- ★ From January 2016 member of Gruppo Nazionale per l'Analisi Matematica, la Probabilità e le loro Applicazioni - INdAM (National Group for Mathematical Analysis, Probability and their applications), section: Functional and Harmonic Analysis.
- ★ From February 2020 member of the European Women in Mathematics.

November 22, 2021

Maria Stella Adamo