

Chiara Esposito

Curriculum Vitæ

December 1, 2017

CONTACT DETAILS

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ACADEMIC APPOINTMENTS

- **October 2013–Present: Wissenschaftliche Mitarbeiterin**
6 years research position at the Department of Mathematics of the University of Würzburg, Germany.
- **January 2013–September 2013: Postdoctoral position**
1 years research position at the University Autonoma of Barcelona, Spain.
- **September 2012–November 2012: Leibniz fellow**
Postdoctoral research position (up to 6 months) at the Oberwolfach Mathematical Institute, Germany.

ACADEMIC DEGREES

- **January 27, 2012: Ph.D. in Mathematics, University of Copenhagen, Denmark**
Dissertation Title: *On the classical and quantum momentum map* .
Thesis advisor: Prof. Ryszard Nest .
- **October 24, 2007: Laurea degree (equivalent to M.Sc.) in Physics, University of Naples "Federico II"**
Final Rank: 110/110 *cum laude* (Italian highest honors). Dissertation Title: *L'evoluzione classica e quantistica nel formalismo di Weyl-Wigner-Moyal* (italian).
Thesis Supervisor: Prof. Fedele Lizzi and Dr. Patrizia Vitale.

TEACHING EXPERIENCE

LECTURES

- **Winterterm 2017/18: Differential Geometry at the University of Würzburg.**
Master course, 4 hours per week
- **Summerterm 2017: Geometric Mechanics at the University of Würzburg.**
Master course, 4 hours per week
- **Summerterm 2015: Algebraic Deformations at the University of Würzburg.**
Research in Groups (Arbeitsgemeinschaften), 2 hours per week

EXERCISE CLASSES

- **Winterterm 2015/16: Linear Algebra I at the University of Würzburg**, 4 hours per week
- **Winterterm 2014/15: Mathematik für Studierende der Physik, Nanostrukturtechnik, Funktionswerkstoffe sowie Luft- und Raumfahrtinformatik at the University of Würzburg**, 4 hours per week
- **Summerterm 2014: Mathematik für Physiker II at the University of Würzburg**, 6 hours per week
- **Winterterm 2013/14: Analysis I at the University of Würzburg**, 4 hours per week
- **Winterterm 2010/11: Lie groups at the University of Copenhagen**, 2 hours per week
- **Winterterm 2009/10: Lie algebra and representations at the University of Copenhagen**, 2 hours per week
- **Winterterm 2008/09: Matlab Laboratory for Calculus II at the Universidad Carlos III de Madrid**, 2 hours per week

RESEARCH IN GROUPS AND SEMINARS

These Research in Groups (RiGs) consist typically of several components: a lecture presenting the general topic and a seminar where the students give talks on selected topics not covered in the lecture. Moreover, typically a proceeding by the students is required. In the seminar blocks students have to prepare talks on topics which are decided at the beginning of the semester. For RiGs and seminar blocks I had to choose the topics, guide the students in preparing the talks and correct the proceedings.

- **Winterterm 2016/17: Deformation quantization in \mathbb{R}^n at the University of Würzburg.**
Seminar block for Master students, 2 hours per week
- **Summerterm 2016: Structure theory and representation of Lie algebras at the University of Würzburg.**
Seminar block for Master and Bachelor students, 2 hours per week
- **Winterterm 2015/16: Oid-geometry at the University of Würzburg.**
RiG for Master students, 2 hours per week
- **Winterterm 2014/15: Poisson geometry at the University of Würzburg.**
RiG for Master students, 2 hours per week

PHD THESIS

[PhD] C. ESPOSITO, *On the classical and quantum momentum map*, PhD Thesis, University of Copenhagen, Denmark, 2012.

FULL LIST OF PUBLICATIONS

BOOKS

[Book] C. ESPOSITO, *Formality theory: from Poisson structures to deformation quantization*. Springer-Verlag Heidelberg, Berlin, New York, 2015.

PAPERS

- [1] P. BIELIAVSKY, C. ESPOSITO, S. WALDMANN, T. WEBER, *Obstructions for Twist Star*, Letters in Mathematical Physics. Article in print.
- [2] C. ESPOSITO, J. SCHNITZER, S. WALDMANN, *A Universal Construction of Universal Deformation Formulas, Drinfel'd Twists and their Positivity*, Pacific Journal of Mathematics. **291** (2017), 2, 319–358 pages
- [3] C. ESPOSITO, E. MIRANDA, *Rigidity of infinitesimal momentum maps*, Israel journal of Mathematics. **219** (2017), 757–781.
- [4] A. DE NICOLA, C. ESPOSITO, *Reduction of pre-Hamiltonian actions*, Journal of Geometry and Physics. **115** (2017), 178–190.
- [5] C. ESPOSITO, P. STAPOR, S. WALDMANN, *Convergence of the Gutt star product*, Journal of Lie theory. **27** (2017), 2, 579–622.

- [6] C. ESPOSITO, R. NEST, *Uniqueness of the momentum map*, Journal of Geometry and Physics. **106** (2016), 342–351.
- [7] C. ESPOSITO, *Quantization of Poisson-Hamiltonian systems.*, Banach Center (2014) . Proceedings for 'From Poisson Brackets to Universal Quantum Symmetries', Eds: Nicola Ciccoli, Andrzej Sitarz.
- [8] C. ESPOSITO, *Poisson reduction*, Geom. Methods Phys **20** (2012). Proceedings for the XXXI Workshop, Bialowieza (2012).
- [9] J. ARVESÚ CARBALLO, C. ESPOSITO, *A high order q -difference equation for q -Hahn multiple orthogonal polynomials*, Journal of Difference Equations and Applications. **18** (2012).

PREPRINTS

- [Pre1] C. ESPOSITO, N. DE KLEIJN, *Universal Deformation Formula, Formality and Actions*. 2017, 34 pages [arXiv:1704.07054].
- [Pre2] C. ESPOSITO, A. G. TORTORELLA, L. VITAGLIANO, *Infinitesimal Automorphisms of VB-groupoids and algebroids*. 2016, 34 pages [arXiv:1611.06896].

PROFESSIONAL ACTIVITIES

INVITED TALKS

1. Poisson 2018. The Fields Institute Toronto (Canada), July 16 - 20, 2018.
<http://www.fields.utoronto.ca/activities/18-19/Poisson-2018>
2. Mathematische Gesellschaft, Georg-August-Universität Göttingen, 6th July 2017.
 Title: *Drinfel'd twist: strength and limits*
3. jDPG 2017, January 2017.
 Title: *Symplectic geometry and Hamiltonian mechanics*.
4. Bayrischzell Workshop 2016, April 2016.
 Title: *Obstructions of Drinfel'd twist deformations*.
5. Incontri Romani 2015, Noncommutative Geometry and Higher Structures, Università La Sapienza di Roma, August 2015.
 Title: *Quantization of Poisson-Hamiltonian systems*.
6. WP3 DyGeSt Workshop, University of Luxembourg, June 2015.
 Title: *Coisotropic reduction for Poisson Lie actions*.
7. From Poisson Brackets to Universal Quantum Symmetries, Banach Center Warsaw, August 2014.
 Title: *Quantization of Poisson-Lie Hamiltonian systems*.
8. Advanced Course on Geometry and Dynamics of Integrable Systems, CRM Barcelona, September 2013.
 Title: *Deformation quantization of momentum map in Poisson geometry and Rigidity*.
9. Workshop of Reduction and Quantization 2013, FAU Erlangen, March 2013.
 Title: *Deformation quantization of momentum map in Poisson geometry and Rigidity*.
10. Minicourse (14 hours) in the Première École de Géométrie at the University of Ouargla (Algeria), May 2012
 Title: *Deformation quantization of Poisson manifolds*.

LONG TERM VISITS

- October-December 2010 Visiting Prof. Alan Weinstein at the Department of Mathematics, *University of Berkeley* (California)
- April-May 2012 Visiting Prof. Eva Miranda at *Universitat Politecnica de Barcelona* (CAST Exchange grant)
- April 2013 Visiting *Riemann Center of Geometry and Physics*, Hannover (granted by Riemann fellowship)

WORKSHOPS AND SEMINARS ORGANIZED

- *Qdays in Barcelona*
CRM Barcelona, October 2013
Organizers: C. Esposito, E. Miranda, F. Presas and R. Solha
- *Über seminar in Würzburg*
Joint seminar for young researchers in Mathematics and Physics
- *Mini-Workshop Deformation Quantization: between formal to strict*
Oberwolfach Mathematical Institute, February 2015
Granted by MFO
Organizers: P. Bieliavsky, C. Esposito, R. Nest, S. Waldmann
- *Working seminar in Louvain-la-Neuve*
University of Louvain-la-Neuve, Belgium. March-September 2015
Granted by BayInt
Organizers: C. Esposito and S. Waldmann
- *Autumn school, From Poisson Geometry to Quantum Fields on Noncommutative Spaces*
University of Würzburg, 05 - 10 October, 2015.
Granted by Volkswagenstiftung
Organizers: C. Esposito, S. Waldmann
- *Incontri Perugini 2016, Noncommutative Geometry and Higher Structures*
Università di Perugia, July 2016
Organizers: N. Ciccoli, F. D'Andrea, C. Esposito
- *Noncommutative Geometry and Higher Structures*
University of Würzburg, September 2017
Organizers: F. D'Andrea, C. Esposito, S. Waldmann
- *Poisson Geometry and Higher Structures*
Università La Sapienza di Roma, September 2018
Granted by InDAM
Organizers: F. Bonechi, N. Ciccoli, C. Esposito, L. Vitagliano

MEMBER OF COMMITTEES

- Member of the committee for the PhD of Anna Kiesenhofer, who defended her thesis on *Integrable systems on b-Poisson structures* on December 21, 2016 at UPC (Barcelona).

AWARDS AND HONORS

- Levi Montalcini position
- Riemann fellowship, granted by Leibniz University of Hannover
- Oberwolfach Leibniz fellowship, granted by MFO
- April 2012 Exchange grant, CAST
- 2009/2010 Marie Curie as Early Stage Researchers, RTN-NCG
- 2009 Graduate scholarship, University of Copenhagen
- 2007/2008 Graduate scholarship, University of Madrid "Carlos III"
- 2000-2003 Undergraduate scholarships, E.DI.SU., Naples
- Reviewer for *Mathematical Reviews*.
- Referee for IJGMP
- Qualified as Maître de conférences

LANGUAGE SKILLS

- Italian: Mother tongue.
- English: Fluent.
- German: Basic.
- Spanish: Good.

COMPUTER SKILLS

- Operating systems: Linux, Mac Os X and Windows.
- Software: \LaTeX , GiT.