

Barbara Giunti | Curriculum Vitae

Personal Information

Name and Surname: Barbara Giunti

Date and place of birth: June, 24 1991 in Susa (Italy)

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Current position

University of Modena and Reggio Emilia

Postdoc fellow in Topological Data Analysis

December 2019 -

Tutor: Prof. Claudia Landi

Education

University of Pavia

PhD in Mathematics

October 2016 - December 2019

Advisors: Prof. Wojtek Chachólski, Prof. Claudia Landi

Torino University (Italy) - Potsdam Universität (Germany)

M.Sc. in Mathematics, 110/110 cum Laude

October 2013 - October 2015

Thesis title: *Differential equations on graphs.*

Advisor: Prof. Paolo Cermelli

IED Torino (Italy)

Short master in Jewelry

February 2011 - May 2011

Torino University (Italy)

Bc. in Mathematics, 103/110

October 2010 - July 2013

Thesis title: *Best-reply dynamics and differential inclusions*

Advisor: Prof. Paolo Cermelli

Liceo Norberto Rosa, Susa (Italy)

Humanistic high school diploma, 100/100

September 2005 - July 2010

Languages

Italian: mother tongue

English: C1, IELTS certification on June 25th, 2016

French: basic

German: good

Norwegian: basic

Fellowships and grants

SIAM travel grant

SIAM AG19, Bern, Swizerland

July, 9th-13th 2019

INFN travel grant*Visitor at the KTH Royal Institute of Stockholm**April, 24th - May, 31st 2019***INdAM travel grant***Visitor at the KTH Royal Institute of Stockholm**February, 2nd - March, 30th 2018***HIM travel grant***Applied and Computational Topology (2) - Collaboration between experts
HIM, Bonn, Germany**September, 03rd-30th 2017***Applied Algebraic Topology conference travel grant***Applied Algebraic Topology 2017, Sapporo, Japan**August, 8th-12th 2017***member of the Gruppo Nazionale per la Fisica Matematica***GNFM - Istituto Nazionale di Alta Matematica**2017-now***member of the Istituto Nazionale di Fisica Nucleare***INFN**2017-now***PhD fellowship***University of Pavia**2016-2019***Presented seminars**

*AATR online seminar**May, 6th 2020**Invariants for tame parametrised chain complexes**University of Bologna, Italy**February, 11th 2020**Parametrised chain complexes in persistence theory**University of Aberdeen, UK**January, 15th 2020**Invariants for tame parametrised chain complexes**Northumbria University Newcastle, UK**January, 13th 2020**Persistence theory and applications**NTNU Trondheim, Norway**September, 26th 2019**Parametrised chain complexes as a model category**TU München, Germany**March, 22nd 2019**Filtered Chain Complexes: Decomposition and Algorithm**NTNU Trondheim, Norway**October, 29th 2018**Classification of filtered chain complexes**Milano Bicocca University, Italy**November, 20th 2017**Introduction to persistence theory**Ruhr-Universität Bochum, Germany**September, 26th 2017**Introduction to zigzag persistence**Potsdam University, Germany**December 2014**Analysis, Geometrie und Physic**Potsdam University, Germany**November 2014**Concept lattices and Combinatorics***Participation in conferences, schools and workshops**

*Bern, Swizerland**July, 9th-13th 2019**SIAM AG19**Talk: Parametrised chain complexes**Wrocław, Poland**September, 17th-20th 2018**Joint meeting SIMAI-UMI-PTM**Talk: Classification of filtered chain complexes*

IST, Wien, Austria June, 25th-29th 2018
 Algebraic Topology: Methods, Computation and Science 8
 Poster: Decomposition of filtered chain complexes

Renyi Institute, Budapest, Hungary June, 11th-14th 2018
 Symposium of Computational Geometry
 Talk: Decomposition of filtered chain complexes: Structure theorem and algorithm

Max Planck Institute, Leipzig, Germany February, 19th-23rd 2018
 TAGS - Linking Topology to Algebraic Geometry and Statistics
 Poster: Decomposition of persistent chain complexes

KTH, Stockholm, Sweden July, 3rd-7th 2017
 Young Topologists Meeting
 Talk: Topology and data science: an introduction to persistent homology

University of Warwick, UK May, 18th-20th 2016
 The Dynamics of Complex Systems: A meeting in honour of the 60th birthday of Robert MacKay FRS
 Poster: Dynamical systems on graphs through the signless Laplacian matrix

Teaching

TA Mentor Prof. Nina Otter	ACT adjoint school 2020 Spring semester 2019/2020
12 hours TA for Calculus I Pavia University, Prof. Fornaro	Faculty of Electric and Informatics Engineering Fall semester 2018/2019
8 hours TA for Theory of dynamical systems Pavia University, Prof. Marzuoli	Faculty of Mathematics Spring semester 2018
12 hours TA for Calculus I Pavia University, Prof. Fornaro	Faculty of Edil Engineering and Architecture Fall semester 2017/2018
3 hours TA for Mathematical physics Pavia University, Prof. Bisi	Faculty of Civil Engineering June 21st, July 13th 2017

Publications

- 1.: *Tame parametrised chain complexes*, B. Giunti, PhD Thesis, 2019, Advisors: Prof. W. Chachólski and Prof. C. Landi
- 2.: *Dynamical systems on graphs through the signless Laplacian matrix*, B. Giunti and V. Perri, Ricerche di Matematica, Springer online 03 May 2017, DOI:10.1007/s11587-017-0326-z1

Preprint

- 1.: *Invariants for tame parametrised chain complexes*, W. Chachólski, B. Giunti and C. Landi, arXiv:2003.03969, 2020