

Curriculum vitae of Corinna Ulcigrai

Date of birth: January 3 1980, Trieste (Italy)
Sex: Female
Personal: Married, 2 children born on 24/3/2012 and 14/02/2015
Citizenship: Italian
Residence: United Kingdom
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Education

2002 - 2007 *Princeton University, Department of Mathematics*
Degree: Ph.D. (June 2007)
Thesis Advisor Prof. Ya. G. SINAI (Abel Prize 2014)

1998 - 2002 *Scuola Normale Superiore and University of Pisa*
Degrees: Scuola Normale "Diploma" (70/70 *cum laude*, July 2002)
Laurea in Mathematics (110/110 *cum laude*, June 2007)
Thesis Advisor: Prof. S. Marmi (Scuola Normale Superiore).

Academic Positions

Aug 2015–present *University of Bristol,*
Professor in Pure Mathematics

Aug 2013–July 2015 *University of Bristol,*
Reader in Pure Mathematics

Aug 2007–Jul 2013 *University of Bristol,*
Lecturer and Research Fellow

Jan 2008–Apr 2008 *Institute for Advanced Studies, Princeton NJ, USA,*
Postdoctoral Member, Petronio Fellowship

Aug 2007–Dec 2007 *MSRI, Berkeley CA, USA*
Postdoctoral Member, MSRI Fellowship

Awards and Honors

- Philip Leverhulme Prize 2014, awarded by the Leverhulme Trust
- Whitehead Prize 2013, awarded by the London Mathematical Society
- ERC Starting Grant holder, from January 2014
- European Mathematical Society Prize 2012
- RCUK Fellowship (UK Research Council) (2007-2012)
- 2007 Clay Liffoff Fellowship
- Centennial Fellowship from the Graduate School at Princeton University (2002-2007)
- Scuola Normale Fellowship, 1998-2002 (Ranked 3rd in the National Examination)

Grants

- ERC (European Research Council) Starting Grant,
Chaos in parabolic dynamics: mixing, rigidity and spectra (2014-2018)
- EPSRC(UK Research Council) Grant EP/I019030/1,
Non generic Teichmueller dynamics (2010-2012)
- RCUK Fellowship (UK Research Council) *Dynamics and Number Theory* (2007-2012)

Publication List

- [1] The Lagrange spectrum of a Veech surface has a Hall ray.
joint work with M. Artigiani and L. Marchese, to appear in Groups, Geometry and Dynamics
- [2] Lagrange Spectra in Teichmüller Dynamics via renormalization,
joint work with P. Hubert and L. Marchese,
Geometric and Functional Analysis, Vol. 25, no. 2 (2015), 180–255.
- [3] Diagonal changes for surfaces in hyperelliptic components,
joint work with V. Delecroix,
Geometriae Dedicata, Vol. 176 (2015), 117–174,
- [4] Ergodic directions for billiards in a strip with periodically located obstacles,
joint work with K. Frączek,
Communications in Mathematical Physics, Vol. 327, no. 2 (2014), 643663.
- [5] Non-ergodic Z -periodic billiards and infinite translation surfaces,
joint work with K. Frączek,
Inventiones Mathematicae, Vol. 197, no. 2 (2014), 241–298.
- [6] Ergodic properties of infinite extensions of area-preserving flows
joint work with K. Frączek,
Mathematische Annalen, Vol. 354 (2012), 1289–1367.
- [7] Shearing and Mixing in Parabolic Flows, *to appear in*
Proceedings of the 6th European Congress in Mathematics,
EMS Publishing House.
- [8] Time-Changes of Horocycle Flows,
joint work with G. Forni,
Journal of Modern Dynamics Vol. 6, no. 2 (2012), 251–273.
- [9] Mixing for time-changes of Heisenberg nilflows,
joint work with A. Avila and G. Forni,
Journal of Differential Geometry, Vol. 89, no. 3 (2011), 369–410
- [10] Absence of mixing in area-preserving flows on surfaces,
Annals of Mathematics, Vol. 173, no. 3 (2011), 1743–1778.
- [11] Beyond Sturmian sequences: coding linear trajectories in the regular octagon,
joint work with J. Smillie,
Proceedings of the London Mathematical Society Vol. 102, no. 2 (2011), 291–340.
- [12] Geodesic flow on the Teichmüller disk of the regular octagon, cutting sequences
and octagon continued fractions maps,
joint work with J. Smillie,
in *Dynamical numbers: interplay between dynamical systems and number theory,*
AMS Contemporary Mathematics, vol. 532 (2010), pp. 29–65.
- [13] Estimates from above of certain double trigonometric sums,
joint work with Ya. G. Sinai
Journal of Fixed Point Theory and Applications. Vol. 6, no. 1 (2009), 93 - 113.

- [14] Weak Mixing for Logarithmic Flows over Interval Exchange Transformations, *Journal of Modern Dynamics*, Vol. 3, no. 1 (2009), 35–49.
- [15] A Limit Theorem for Birkhoff sums of non-Integrable Functions over Rotations, *joint work with Ya. G. Sinai*, in *Probabilistic and Geometric Structures in Dynamics*, Contemporary Mathematics Series, American Mathematical Society, 2008
- [16] A Renewal-type Limit Theorem for Continued Fractions and the Gauss Map, *joint work with Ya. G. Sinai* *Ergodic Theory and Dynamical Systems* Vol.28, no. 2 (2008), 643–655.
- [17] Mixing for Suspension Flows over Interval Exchange Transformations, *Ergodic Theory and Dynamical Systems* Vol.27, no. 3 (2007) 991–1035.
- [18] On Ergodic Properties of Flows on Surfaces. Ph.D. Thesis, *Princeton University*, June 2007
- [19] A condition for Continuous Spectrum of an Interval Exchange Transformation, *joint work with A. Bufetov and Ya. G. Sinai*, *American Mathematical Society Translations* Vol. 217 (2006), 23-35.
- [20] Weak Mixing in Interval Exchange Transformations of Periodic Type, *joint work with Ya. G. Sinai* *Letters in Mathematical Physics*, Vol. 74, no. 2 (2005), 111-133.

Prepublications

- [21] Genericity on curves and applications: pseudo-integrable billiards, Eaton lenses and gap distributions. *joint work with K. Fraczek and R. Shi*, *Preprint* arXiv:1508.03946
- [22] Cutting sequences on Bouw-Müller surfaces: an S-adic characterization. *joint work with D. Davis and I. Pasquinelli*, *Preprint* arXiv:1602.02126
- [23] The Lagrange spectrum of some square-tiled surfaces. *joint work with P. Hubert, S. Lelivre and L. Marchese*, *Preprint* arXiv:1409.7023

Postgraduate and Research Assistant Supervision:

- Phd Supervisor of *Mauro Artigiani* (graduated from La Sapienza, Roma), expected Phd Spring 2016
- Phd Supervisor of *Davide Ravotti* (graduated from Università di Udine), expected Phd Spring 2018
- Postdoctoral supervisor of *Anton Solomko* (Phd from Institute for Low Temperature Physics and Engineering, Ukraine)
- Postdoctoral supervisor of *Michael Bromberg* (Phd from Tel Aviv University, Israel)

Editorial jobs

- Member of the editorial board of the *London Mathematical Society Journals*, from Jan 2014
- Member of the editorial board of *Lecture Notes of the Unione Matematica Italiana*, edited by Springer, from Jan 2013

Selected Invited Talks at International Conferences

Dynamical Systems School and Conference, ICTP, Trieste, ITALY (2015)
Dynamics and Geometry in the Teichmüller Space, CIRM, Luminy, FRANCE (2015)

INdAM DAY 2015, Istituto Nazionale di Alta Matematica, Bologna, ITALY (2015)
Geometric and Arithmetic Aspects of Homogeneous Dynamics, MSRI, Berkeley, CA, USA (2015)
Dynamics and Numbers, Max Planck Institute- Bonn, GERMANY (2014)
Groups and Numbers, Newton Institute- Cambridge, RI, UK (2014)
British Mathematics Colloquium 2014 (invited morning speaker) - London, UK (2014)
Geometric Structures in Low-Dimensional Dynamics, ICERM- Providence, RI, USA (2013)
Homogeneous Dynamics, Unipotent Flows, and Applications, Jerusalem, ISRAEL (2013)
Dynamical Systems, MFO Oberwolfach, GERMANY (2013)
Continued Fractions, IETs and Applications to Geometry, Centro De Giorgi, Pisa, ITALY (2013)
Probability and Numbers, Centro De Giorgi, TU Delft, April 2013
6th European Congress in Mathematics (EMS award winner's talk) - Krakow, POLAND (2012)
European Women in Mathematics general meeting (plenary speaker) - Barcelona, SPAIN (2011)
 Workshop on infinite ergodic theory, University of Surrey, Guildford, UK (2012)
Hamilton Geometry and Topology Workshop 2011 - Dublin, IRELAND (2011)
Aspects of hyperbolicity in geometry, topology, and dynamics - University of Warwick, UK, Jul 2011
Billiards, Flat Surfaces, and Dynamics on Moduli Spaces - MFO Oberwolfach, GERMANY (2011)
EPSRC Symposium Workshop on Ergodic Theory and Number Theory - Warwick, UK (2011)
Spring Dynamics Workshop - University of Maryland, USA (2011)
Ergodic Theory Workshop - University of North Carolina, Chapel Hill, NC, USA (2011)
Hyperbolic Dynamical Systems in the Sciences - Corinaldo, ITALY, June (2010)
Non-uniform hyperbolicity and interval exchange maps - Institute Mittag-Leffler, SWEDEN (2010)
School on Periodic Approximations in Dynamics - Centro de Giorgi, Pisa, Italy (2010)
Dynamical Numbers - Max Planck Institute, Bonn, GERMANY, July 2009
Workshop on Dynamical Systems and Related Topics - University of Maryland, USA, April (2009)
Probabilistic Aspects of Skew-Product Dynamics - University of Manchester, UK, (2008)
Dynamics in Teichmüller space - Roscoff, FRANCE, (2008)
Ergodic Theory and Geometry - University of Manchester, UK, (2008)
Workshop on Shrinking Target Properties - Clay Mathematics Institute, Cambridge, MA, USA (2007)
Topics in Teichmüller Theory and Kleinian Groups - MSRI, Berkeley, CA, USA (2007)
AMS National Meeting (special session) Nashville Tennessee, USA (2007)
Connection for Women Workshop Teichmüller Theory and Kleinian groups - MSRI, USA, (2007)
Clay Summer School on Homogeneous Flows, Moduli Spaces and Arithmetic, Pisa, ITALY (2007)
Research Trimester on Dynamical Systems and Number Theory Centro de Giorgi, Pisa, ITALY (2007)
CMS Winter Meeting (Canadian Mathematical Society), (special session)- Toronto, CANADA, (2006)
Mathematics and its Applications SMF/UMI meeting (special session) - Torino, ITALY (2006)
Spring 2006 Dynamics Workshop University of Maryland, Maryland, USA, March (2006)

Selected Invited Seminar Talks and Colloquia

- *In Europe:*

Technion, Haifa, ISRAEL, Tel Aviv University, ISRAEL (2013), Heidelberg University, GERMANY, University of Zurich, SWITZERLAND, University of Berne, SWITZERLAND (2012) Université de Paris-Sud Orsay, FRANCE, The Hebrew University of Jerusalem, ISRAEL (2011), Nicolaus Copernicus University, POLAND (2010), Università di Pisa (colloquium), ITALY (2009), Marseille, FRANCE, 2009, 2008, Scuola Normale Superiore, ITALY, 2009 and 2006, Institute Fourier in Grenoble, FRANCE, 2007

- *In the USA:*

Princeton University, (2010, 2009 and 2007), University of Maryland, (2009), Cornell University, (2008), Rice University, 2008, University of Michigan, (2007) Yale University, (2007), University of Chicago, (2006)

- *In the UK:*

Cambridge University, Oxford University, Durham University (colloquium), London Analysis and Probability Seminar, University of Liverpool (colloquium), University of Leicester (colloquium), University of Warwick, Imperial College, University of Manchester, Queen Mary University, University of Surrey; Southampton University (colloquium)

Selected Longterm Research Visits and Invitations to International Programs

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| Sep 2015 | MSRI, Berkeley, CA, USA (5 weeks) |
| Sep 2013 | IIAS, Hebrew University, Jerusalem, ISRAEL (4 months) |
| Sep 2012 | ETH Zurich, SWITZERLAND (4 months) |
| Sep 2011 | Professeur Invité at Université of Paris-Sud Orsay, FRANCE, (1 month) |
| Apr 2011 | University of Maryland, USA, (3 weeks) |
| Sep 2010 | Nicolaus Copernicus University, Torun, POLAND, (1 month) |
| Jul 2010 | Hausdorff Institute, GERMANY, Geometry and Dynamics of Teichmüller Spaces (1 month) |
| Apr 2010 | Institute Mittag-Leffler, SWEDEN, Program Dynamics and PDEs (1 month) |
| Jul 2009 | Max Planck Institute in Bonn, GERMANY, Program Dynamical Numbers (1 month) |
| Apr 2009 | Institute for Advanced Studies, Princeton, NJ USA, (1 month) |
| Feb 2009 | Professeur Invité at CTP Luminy, FRANCE, (1 month) |
| Jan 2008 | Cornell University, NY, USA, (1 month) |
| Fall 2007 | MSRI Berkeley, USA, Topics in Teichmüller Theory and Kleinian groups (4 months) |
| May 2007 | CRM de Giorgi, Pisa, ITALY, Dynamical Systems and Number Theory (1 month) |
| June 2003 | Caltech, CA, USA, (1 month) |

Conferences and meeting organization:

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| 2016 | <i>British Mathematics Colloquium Ergodic Theory Session</i> , University of Bristol, UK |
| 2011 | <i>EPSRC Symposium: Recent advances in modern dynamics</i> , University of Warwick, UK |
| 2011 | <i>London Mathematical Society Prospects in Mathematics 2011</i> , University of Bristol, UK |
| 2010 | <i>One Day Ergodic Theory Meeting</i> , University of Bristol, UK |

Teaching highlights:

- New level 3-4 undergraduate course Dynamical Systems and Ergodic Theory (self-designed and taught in Fall 2011 and 2012)
- *Top Mathematics Teacher 3r and 4th year units*, Department of Mathematics University of Bristol in Spring 2012
- Self-designed graduate courses, Taught Course Center, *collaborative UK network between the universities of Bristol, Cambridge, Warwick, Imperial and Bath*):
 - “Introduction to Teichmüller dynamics“, Fall 2009
 - “Ergodic Theory of translation surfaces “ Fall 2008

Selected Public Engagement

- Interviewed for two articles for the **Plus Magazine** for the popularization of mathematics, *Chaos on the billiard table* and *Playing Billiard on Doughnuts* (by Marianne Freiberger, May 2014) (<http://plus.maths.org/content/chaos-billiard-table>, <http://plus.maths.org/content/billiard>)
The first is being translated for the Italian magazine **Xla Tangente**.
- A 30-minutes *radio interview* for the Italian national radio program **RadioScienza** (hired on the channel RaiRadio3 on 11, July 2012)
- An *interview for the public engagement website MaddMaths!* of the Italian Society for Applied and Industrial Mathematics SIMAI and the Italian Mathematical Union UMI. The interview also appeared in the newsletter Madd-Letter n.28, Sep-Oct 2012. <http://maddmaths.simai.eu/>
- A *Research Highlight* in the University of Bristol webpage.
<http://www.maths.bris.ac.uk/research/highlights/ergodicity/>
- An interview for the *Newsletter* of the *European Women in Mathematics Association*, published in Oct-Nov 2012.

Service to the Community

- European Women in Mathematics Standing Committee member (Sep 2011-Sep 2015)
- Member of the Equality Committee at the School of Mathematics, Bristol University (from Jan 2014)
- Invited member of the EPSRC Peer Review College (UK Research Council) (Sep 2012-present)
- *Scientific Referee* for various journals, including *Annals of Mathematics*, *Annales de l'Ecole Normale Supérieure*, *Geometriae Dedicatae*, *GAFa*, *Annales de l'Institut Fourier*, *Journal of Modern Dynamics*, *Ergodic Theory and Dynamical Systems*, *Non-linearity*.