

**CURRICULUM VITAE
DANIEL SMANIA**

1. PERSONAL DATA

Full Name: Daniel Smania Brandão.

E-mail: smania@icmc.usp.br

URL: www.icmc.usp.br/~smania/

Position: Associate Professor of the Department of Mathematics-ICMC-USP-Brazil.

Mail Address:

Daniel Smania Brandão
Departamento de Matemática
ICMC-USP
Caixa Postal 668
São Carlos-SP
CEP 13560-970
Brazil

Phone: (55)(16) 3373-8169

Fax: (55)(16) 3373-9650

2. EDUCATION

Postdoctoral stage: State University of New York (S.U.N.Y.) at Stony Brook, U.S.A., and University of Toronto, Toronto, Canada, from November 2001 to October 2002. Supervisor: Mikhail Lyubich. École Normale Supérieure de Paris, from September 2008 to February 2009. Supervisor: Viviane Baladi.

Ph. D.: IMPA, Rio de Janeiro, Brazil, from March 1998 to March 2001.
Ph. D. thesis: Renormalization theory for multimodal maps.
Supervisor: Wellington de Melo.

Master Degree: IMPA, Rio de Janeiro, Brazil, from March 1996 to February 1998.

3. PEER REVIEWED RESEARCH PUBLICATIONS

Alternative proofs of linear response for piecewise expanding unimodal maps.
with Viviane Baladi (ENS). *Ergodic Theory & Dynamical Systems (Print)*, v. 30, p. 1-20, 2010.

Eigenvalues of Fibonacci Stochastic Machine.
with Ali Messaoudi. *Stochastics and Dynamics*, v. 10, p. 291, 2010.

Analyticity of the SRB measure for holomorphic families of quadratic-like Collet-Eckmann maps.
with V. Baladi(ENS). *Proceedings of the American Mathematical Society*, 137 (2009), p. 1431–1437.

Smooth deformations of piecewise expanding unimodal maps.
with V. Baladi(ENS). *Discrete and Continuous Dynamical Systems*, 23 (2009), p. 685–703.

Alternative proofs of linear response for piecewise expanding unimodal maps.
with V. Baladi(ENS). *Ergodic Theory and Dynamical Systems (eletronic publication)*, 2009.

Linear response formula for piecewise expanding unimodal maps.
with V. Baladi(ENS). *Nonlinearity* 21 (2008) 677–711.

Puzzle geometry and rigidity: the Fibonacci cycle is hyperbolic.
J. Amer. Math. Soc. 20 (2007), no. 3, 629–673.

On the hyperbolicity of the period-doubling fixed point.
Trans. Amer. Math. Soc. 358 (2006), no. 4, 1827–1846.

Phase space universality for multimodal maps.
Bull. Braz. Math. Soc. (N.S.) 36 (2005), no. 2, 225–274.

Complex bounds for multimodal maps: bounded combinatorics.
Nonlinearity 14 (2001), no. 5, 1311–1330.

4. OTHER PUBLICATIONS

4.1. Preprints.

Linear response for smooth deformations of generic nonuniformly hyperbolic unimodal maps.

with Viviane Baladi, 2010.

<http://arxiv.org/abs/1003.5592>

Renormalization for critical orders close to $2N$.

with Judith Cruz, 2010

<http://arxiv.org/abs/1001.1271>

On infinitely cohomologous to zero observables.

with Amanda de Lima, 2009.

<http://arxiv.org/abs/0907.5013>.

Piecewise Analytic Subactions for Analytic Dynamics.

with Gonzalo Contreras, Artur O. Lopes and Elismar R. Oliveira, 2009.

<http://arxiv.org/abs/0904.3516>.

Eigenvalues of Fibonacci stochastic adding machine

with A. Messaoudi (UNESP-Rio Claro). 24 pages. January 2008.

<http://www.icmc.sc.usp.br/smania/fib.pdf>.

Metric stability for random walks (with applications in renormalization theory)

with Carlos G. Moreira(IMPA). 49 pages. April 2005.

<http://arxiv.org/abs/math/0503736>.

4.2. Abstracts.

Puzzle geometry and rigidity: the Fibonacci cycle.

In: Internacional Congress for Mathematicians, 2002, Beijing-China. Abstracts of Short Communications and Poster Sessions, 2002. p. 271-272.

4.3. Proceedings (organization).

Smania, D. ; Tahzibi, A. ; Viana, M. .

Special Issue of Discrete and Continuous Dynamical Systems Journal dedicated to C. Gutierrez and M. A. Teixeira.

Discrete Contin. Dyn. Syst. 17 (2007), no. 2.

5. PUBLIC PRESENTATIONS OF RESEARCH

5.1. Presentations in scientific events.

Renormalization operator for multimodal maps.

Geometric and Algebraic Structures in Mathematics, Simons Center, SUNY at Stony Brook, May, 2011.

Deformations of Benedicks-Carleson unimodal maps.

Escola Brasileira de Sistemas Dinâmicos, UFAL, Maceió, February, 2010.

Twisted cohomological equation and renormalization and Linear response for generic unimodal maps

Low Dimensional Dynamics, CODY, INPAM, Warsaw, Poland, November, 2010.

Linear response for deformations of generic nonuniformly hyperbolic unimodal maps.

Various Aspects of Dynamical Systems, Maharaja Sayajirao University of Baroda, Vadodara, India, August 2010.

Differentiation of SBR measures for topological slow recurrent unimodal maps.

(short communications.)

International Congress of Mathematicians, Hyderabad, India, August, 2010.

Deformações de sistemas dinâmicos unidimensionais.

2º Encontro de Sistemas Dinâmicos UFBA - UFAL, UFBA, Salvador, November, 2009.

Renormalization for some piecewise smooth homeomorphisms of the circle.

International Conference on Dynamical Systems, Buzios, Brazil, February, 2010.

Deformations of Benedicks-Carleson unimodal maps.

Mini-Workshop: Spectrum of Transfer Operators: Recent Developments and Applications, Mathematisches Forschungsinstitut Oberwolfach, Oberwolfach-Walke, Germany, November, 2009.

Deformations of Benedicks-Carleson unimodal maps.

Dynamical Systems at Valparaíso, PUC-V, Valparaíso, Chile, September, 2009.

Deformations of Benedicks-Carleson unimodal maps

Advances in low dimensional dynamics, SUNY at Stony Brook, June, 2009.

Smooth deformations of piecewise expanding unimodal maps.

AMS-SBM Meeting, IMPA, Rio de Janeiro, June 2008.

Smooth deformations of piecewise expanding unimodal maps.

School and Workshop on Dynamics, Montevideo, May 2008.

Smooth deformations of piecewise expanding unimodal maps.

Workshop GREFI-MEFI 2008, CIRM, Marseille, France, February 2008.

Twisted cohomological equation and renormalization.

Workshop de Topologia e Dinâmica, Universidade Federal Fluminense (UFF), Niterói, Brazil, February 2007.

Twisted cohomological equation and renormalization.

International Symposium of Dynamical Systems. UFBA, Salvador, Brazil, October 2006.

Stochastic adding machines for exotic numerical systems.

Dynamical Days, PUC de Santiago, Santiago, Chile, July 2006.

Introduction to one-dimensional dynamics.

Mini-course. School and Workshop on Dynamical Systems, IMPA, Rio de Janeiro, Brazil, January 2006.

Measure-theoretical rigidity for unimodal maps.

Renormalization on Dynamical Systems Workshop. Fields Institute, Canada, November 2005.

On wild attractors, absolutely continuous conjugacies and deterministic random walks.

International Conference on Dynamical Systems, Angra dos Reis, Brazil, August de 2005.

Non-smooth absolutely continuous conjugacies between unimodal maps.

Thematic Session on Dynamical Systems of the 25o Colóquio Brasileiro de Matemática, IMPA, Rio de Janeiro, Brazil, July 2005.

Metric stability for random walks.

Invited Speaker. Workshop em Dinâmica Caótica e Geometria Diferencial UFBA, Salvador, Brazil, February 2005.

Metric stability for random walks.

Plenary. Workshop on Holomorphic Dynamics. University of Warwick, United Kingdom, December 2004.

Metric stability for random walks.

Oral communication. 8th Brazilian School of Probability, Ubatuba, Brazil, August 2004.

Metric stability for random walks.

Invited Speaker. Workshop de Geometria de Subvariedades e Dinâmica Caótica,

Maceió, Brazil, January 2004.

Conjugacies between Feigenbaum/Fibonacci maps.

Invited Session. XIII Congreso de Matematica Capricornio COMCA2003, Antofagasta, Chile, August 2003.

On the hyperbolicity of the period-doubling operator.

III Workshop on Dynamical Systems, San Pedro de Atacama, Chile, August 2003.

Puzzle Geometry and Rigidity.

Communication. XIII Congreso de Matematica Capricornio COMA2003, Antofagasta-Chile, August, 2003.

Renormalization Theory.

Mini-course in Fourth Warwick Dynamics Symposium: Geometric Aspects of Dynamical Systems, Coventry, United Kingdom, July 2003.

Recent Progress on Renormalization. Workshop Recent Trends on Dynamics, Porto, Portugal, July 2003.

Puzzle geometry and rigidity: the Fibonacci cycle.

Ordinary member communication, International Congress of Mathematicians 2002-Beijing, August 2002.

Renormalization theory for multimodal maps.

School and Workshop on Dynamical Systems. Parartel session ICTP-Trieste, Italy, July 2001.

5.2. Other presentations.

Renormalization for multimodal maps.

Seminaire COOL, Institute Henri Poincare, Paris, May, 2011

Hyperbolicity of the renormalization operator for multimodal maps. (poster)

Renormalization in low dimensional dynamics and its applications. Warwick University. December, 2010.

Smooth deformation of expanding maps on the circle (a toy model)

Seminario Dinámica, Ecuaciones y Acciones. UCN, Antofagasta, Chile, July, 2010.

Renormalization and universality for some piecewise smooth homeomorphisms of the circle.

Seminário de sistemas dinâmicos e estocásticos, IMECC-UNICAMP, Campinas, Brazil, June, 2010.

Renormalization and universality for some piecewise smooth homeomorphisms of the circle.

Seminario Conjunto de Sistemas-Dinámicos, PUC-Chile, Santiago, July, 2010.

On infinitely cohomologous to zero observables.

Seminário de Sistemas Dinâmicos. PUC-Santiago, Chile, September, 2009.

Deformação de transformações unimodais do tipo Benedicks-Carleson.

Seminário de Sistemas Dinâmicos, IME, USP, São Paulo, Brazil, August, 2009.

Puzzle geometry and rigidity.

Seminaire COOL, Institute Henri Poincare, Paris, December, 2008.

Smooth deformations of piecewise expanding unimodal maps.

Seminaire Systemes Dynamiques, Institute Matematique de Toulouse, December, 2008.

Differentiation of SBR measures for piecewise expanding unimodal maps.

Groupes de travail de l'équipe Topologie Dynamique, Departement de Mathematique d Orsay, February, 2009.

Sistemas de numeração complexos (Complex systems of numeration)

Colóquio, UNESP, Rio Claro, June 2008.

Smooth deformations of piecewise expanding unimodal maps

Seminário de Sistemas Dinâmicos, IMPA, Rio de Janeiro, January 2008.

Smooth deformations of piecewise expanding unimodal maps.

Dynamical Systems seminar, Institute Mathematique de Jussieu, Paris, France, November 2007.

Introduction to Renormalization theory: the Feigenbaum case.

Mini-course Universidad Catolica del Norte, Antofagasta, Chile, August 2003.

Metric stability for random walks.

Dynamical Systems Seminar, IMPA, Rio de Janeiro, January 2004.

Introduction to Renormalization theory: the Feigenbaum case.

Mini-course Universidad Catolica del Norte, Antofagasta, Chile, August 2003.

Infinitesimal methods in Renormalization Theory.

Dynamical Systems seminar, University of Toronto, Canada, September 2002.

Puzzle Geometry and Rigidity: The Fibonacci cycle is hyperbolic.

Dynamical Systems seminar, IMS-SUNY at Stony Brook, U.S.A., May 2002.

Renormalization theory for multimodal maps.

Dynamical Systems seminar, Warwick University, United Kingdom, June 2001.

Renormalization for multimodal maps: a priori bounds for bounded combinatorics.

International Conference on Dynamical Systems.
Poster session, IMPA, Rio de Janeiro, Brazil, July 2000.

Renormalization for multimodal maps: a priori bounds for bounded combinatorics.
International Conference and School on Dynamical Systems.
Poster, Universidade do Porto, Portugal, May 2000.

6. GRADUATE STUDENT SUPERVISION

Amanda de Lima concluded her Master thesis "Cohomology and stochastic properties of lipchitzian observables and piecewise expanding transformations" in March 2007.

Judith Hayde Cruz concluded her Ph. D. thesis "Renormalization for unimodal maps with critical order close to $2\mathbb{N}$ " in November 2007.

Tatiana Miguel Rodrigues concluded her Ph. D. thesis "Arithmetic and topological properties of Rauzy fractals" in March 2010 (co-advisor: Ali Messaoudi).

Kleyber Mota da Cunha concluded his Ph. D. thesis "Universality for piecewise smooth homeomorphism of the circle" in March 2007.

José Humberto Bravo Vidarte concluded his Master dissertation "Smooth linearization of hyperbolic fixed points" in March 2010.

Carlos Alberto Siqueira Lima concluded his Master dissertation "Thermodynamical formalism and complex dynamics" in March 2011.

7. PEER-REVIEW SERVICE

We reviewed manuscripts for the following journals: Nonlinearity, Communications in Mathematical Physics, Advances in Mathematics, Annals of Mathematics, Annales Scientifiques de L'Ecole Normale Supérieure, Anais da Academia Brasileira de Ciências.

8. ORGANIZATION OF CONFERENCES

Member of the organizing committee of the Workshop "Geometric and Ergodic Theory of Dynamical Systems", ICMC-USP, São Carlos-Brazil, from August 30th

to September 3th 2004.

URL: www.icmc.usp.br/~getds/

9. TEACHING EXPERIENCE

We taught the following courses in our current position:

Graduate-level courses: dynamical systems, measure theory, topology, ergodic theory, dynamics of one complex variable, dynamics and probability.

Undergraduate-level courses: calculus I, II and II, analysis II, measure theory, analytic geometry, linear algebra, ordinary differential equations, discrete mathematics.

10. MAJOR ADMINISTRATIVE CONTRIBUTIONS

Member of the council of the Department of Mathematics, ICMC, USP, Brazil.
(2005-2009).

Member of the committee of Ph. D. qualification exam, ICMC, USP, Brazil.
(2007-2008).

Member of the committee for the distribution of teaching duties of the Department of Mathematics, ICMC, USP, Brazil.
(2007-2008).

Updated June 3th 2011.