CURRICULUM VITAE

ALEJANDRO KOCSARD

PERSONAL DETAILS

Full name: Alejandro Kocsard
Date of birth: September 16th, 1978
Place of birth: Rosario, Argentina
Citizenship: Argentine & Hungarian
Permanent residence: Brazil

CONTACT

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EDUCATION

3/2011–8/2011	**Postdoc:** Université Paris VI, IMJ-PRG, Paris, France. Advisor: Prof. Patrice Le Calvez.
8/2007–8/2008	**Postdoc:** Instituto Nacional de Matemática Pura e Aplicada (IMPA), Rio de Janeiro, Brazil. Advisor: Prof. Enrique R. Pujals.
3/2003–5/2007	**Doutor em Matemática (Ph.D.):** Instituto Nacional de Matemática Pura e Aplicada (IMPA), Rio de Janeiro, Brazil. Thesis title: *Toward the classification of cohomology-free vector fields*. Advisor: Prof. Welington de Melo.
3/1997–8/2002	**Licenciado en Matemática:** Universidad Nacional de Rosario, Rosario, Argentina.

POSITIONS

Since 3/2017	**Associate Professor:** Instituto de Matemática e Estatísitica, Universidade Federal Fluminense, Niterói, Brazil.
8/2008–2/2017	**Assistant Professor:** Instituto de Matemática e Estatísitica, Universidade Federal Fluminense, Niterói, Brazil.

3/2003–7/2007	**Teacher Assistant:** Instituo Nacional de Matemática Pura e Aplicada (IMPA), Rio de Janeiro, Brazil.
3/2002–7/2002	**Teacher Assistant:** Facultad de Ciencias Exactas, Ingeniería y Agrimensura, Universidad Nacional de Rosario, Argentina.

FELLOWSHIPS AND GRANTS

Since 11/2015	FAPERJ - Jovem Cientista do Nosso Estado
Since 3/2011	CNPq Produtividade em Pesquisa (research fellowship)
3/2011–8/2011	CAPES fellowship for postdoc.
4/2009–4/2010	Auxílio de Instalação, FAPERJ.
8/2007–8/2008	CNPq fellowship for postdoc.
3/2003–2/2005	CNPq scholarship for Ph.D.
1/1994–12/1999	Bernardo A. Houssay scholarship for high school students.

AWARDS

05/2009	Prêmio CAPES de Tese 2008 (best mathematical Ph.D. thesis of Brazil in 2007).
03/2005–02/2007	Bolsa FAPERJ Nota 10 (special scholarship for PhD students).
11/1997	Second Prize in the Paenza Mathematical Contest (Argentina).
07/1996	Bronze Medal, International Mathematical Olympiad (India).

PUBLICATIONS

1. A. Avila, A. Kocsard, Xiao-Chuan Liu, *Livšic theorem for diffeomorphism cocycles,* accepted in Geometric and Functional Analysis (GAFA), available at `https://arxiv.org/abs/1711.02135` (2018)

2. A. Kocsard, F. Pereira-Rodrigues, *Rotational deviations and invariant pseudo-foliations for periodic point free torus homeomorphisms,* accepted in Mathematische Zeitschrift (2017), available at `https://arxiv.org/abs/1704.04788`.

3. P. Berger, A. Kocsard, *Structural stability of the inverse limit of endomorphisms,* Annales de l'Institut Henri Poincaré - Analyse Non Linéaire, v. **34** (2017), 1227-1253.

4. A. Kocsard, G. Ovando, S. Reggiani, *On first integrals of the geodesic flow on Heisenberg nilmanifolds,* Differential Geometry and its Applications, v. **49** (2016), 496–509.

5. A. Kocsard, R. Potrie, *Livšic theorem for low-dimensional diffeomorphism cocycles,* Commentarii Mathematici Helvetici, v. **91** (2016), 39–64.

6. L. Backes, A. Kocsard, *Cohomology of dominated diffeomorphism-valued cocycles over hyperbolic systems,* Ergodic Theory & Dynamical Systems, v. **36** (2016), 1703–1722.

7. A. Avila, B. Fayad, A. Kocsard, *On manifolds supporting distributionally uniquely ergodic diffeomorphisms,* Journal of Differential Geometry, v. **99** (2015), 191–213.

8. A. Kocsard, *On cohomological C^0-(in)stability,* Bulletin of the Brazilian Mathematical Society, v. **44** (2013), 489–495.

9. A. Avila, A. Kocsard, *Cohomological equations and invariant distributions for minimal circle diffeomorphisms,* Duke Math. Journal, v. **158** (2011), 501–536.

10. A. Kocsard and A. Koropecki, *A mixing-like property and inexistence of invariant foliations for minimal diffeomorphisms of the 2-torus,* Proceedings of the AMS, v. **137** (2009), 3379–3386.

11. A. Kocsard, *Cohomologically rigid vector fields: the Katok conjecture in dimension 3,* Annales de l'Institut Henri Poincaré - Analyse non Linéaire, v. **26** (2009), 1165–1182

12. A. Kocsard and A. Koropecki, *Free curves and periodic points for torus homeomorphisms,* Ergodic Theory & Dynamical Systems, v. **28** (2008), 1895–1915.

PREPRINTS

1. A. Kocsard, *Kronecker factors for periodic point free homeomorphisms,* submited, availble at `https://arxiv.org/abs/1908.05746` (2019).

2. S. Hurtado, A. Kocsard, F. Rodríguez Hertz, *The Burnside problem for* $\mathrm{Diff}(\mathbb{S}^2)$, submited, availavle at `https://arxiv.org/abs/1607.04603` (2019).

3. A. Kocsard, *On the dynamics of minimal homeomorphisms of* $\mathbb{T}^2$ *which are not pseudo-rotations,* submitted, available at `https://arxiv.org/pdf/1611.03784v1` (2016).

4. A. Avila, A. Kocsard, *Invariant distributions for higher dimensional quasi-periodic diffeomorphisms,* in preparation.

GRADUATE STUDENTS

PhD students

- Oscar Baustista Callizayam PhD in Mathematics, Universidade Federal Fluminense. *Periodic approximation of Lyapunov exponents of random walks on manifolds.* Ongoing.
- Átila Guidolini, PhD in Mathematics, Universidade Federal Fluminense. *On the topology of cohomology classes over hyperbolic dynamics.* Ongoing.
- Fernanda Peira-Rodrigues, PhD in Mathematics, Universidade Federal Fluminense. *Rotational deviations for mininmal torus homeomorphisms.* Defended in 2016.

Master students

- Yeltsin Acahuana. Master degree in Mathematics, Universidade Federal Fluminense. *Teoria rotacional de endomorfismos do círculo.* Ongoing.
- Oscar Bautista Callizaya. Master degree in Mathematics, Universidade Federal Fluminense. *Sobre a classificação de endomorfismos expansores.* Defended in 2015.
- Edwin Colos Ccallme. Master degree in Mathematics, Universidade Federal Fluminense. *Algumas generalizações do teorema de Gottschalk-Hedlund.* Defended in 2013.

INVITED TALKS (CONFERENCES)

1. *Periodic approximations in hyperbolic systems and applications,* Smooth Dynamical Systems, Stockholm, Sweden, 2019.
2. *Cocycles over hyperbolic systems, Lyapunov exponents and applications,* Dynamical Days, Santiago, Chile, 2018.
3. *Grupos de transformaciones finitamente generados y el problema de Burnside en Variedades.* Annual Meeting of the Argentinian Mathematica Union, La Plata, Argentina, 2018.
4. *Irrational factors for periodic point free torus homeomorphisms.* Surfaces in Będlewo. Będlewo, Poland. April, 2018.
5. *Fatores topológicos de homeomorfismos do 2-toro sem pontos periódicos.* Encontro Mineiro de Sistemas Dinâmicos. Itajubá, Brazil. October, 2017.
6. *Wandering domains and irrational factors for periodic point free torus homeomorphisms.* Workshop on Topological Dynamics and Rotation Theory on Surfaces. Jena, Germany. September, 2017.
7. *On the dynamics of periodic point free homeomorphisms of* $\mathbb{T}^2$. Thematic Program on Dynamical Systems. Tehran, Iran. May, 2017.

8. *On the dynamics of minimal homeomorphisms of* $\mathbb{T}^2$. Surfaces in Luminy, Luminy, France. October, 2016.

9. *On the dynamics of mininal homeomorphisms of* $\mathbb{T}^2$. International Conference on Dynamical Systems. Búzios, Brazil. July, 2016.

10. *Cocycles over hyperbolic dynamical systems.* Workshop for young researchers: groups acting on manifolds, Teresópolis, Brazil. May, 2016.

11. *Rotation theory of torus homeomorphisms.* Mini-course joint with A. Koropecki at the conference Global dynamics beyond uniform hyperbolicity, Olmué, Chile. September, 2015.

12. *Invariant pseudo-foliations for minimal homeomorphisms in dimension 2.* School and Conference on Dynamical Systems, Trieste, Italy. July, 2015.

13. *Homeomorfismos do 2-toro sem pontos periódicos: o problema dos desvios rotacionais.* Dias Dinâmicos Paulistas, São Paulo, Brazil. March, 2015.

14. *Cociclos sobre dinâmicas hiperbólicas.* IV Encontro Mineiro de Sistemas Dinâmicos, Uberlândia, Brazil. February, 2015.

15. *On the concept of stability in cohomological dynamics.* First Mathematical Congress of the Americas, Guanajuato, Mexico. August 2013.

16. *Livisic theorem for diffeomorphism cocycles.* Second Palis-Balzan International Symposium on Dynamical Systems. Paris, France, 2013.

17. *Distribuciones invariantes y sistemas distribucionalmente únicamente ergódicos.* XXX Coloquio de la Sociedad Matemática Peruana, Lima, Perú. December, 2012.

18. *Distributionally uniquely ergodic systems.* IV Congreso Latinoamericano de Matemáticos, Córdoba, Argentina. August 2012.

19. *Distributionally uniquely ergodic diffeomorphisms.* First Palis-Balzan Symposium on Dynamical Systems, IMPA, Rio de Janeiro, Brasil. June, 2012.

20. *Distributionally uniquely ergodic diffeomorphisms.* School and Conference in Dynamical Systems, ICTP, Trieste, Italy. May 2012.

21. *Cohomological Equations in Dynamics.* Workshop in Topology and Dynamics, Tehran, Iran. Febrauary, 2012.

22. *Pseudo-rotações irracionais.* IV Workshop de Dinâmica Conservativa. UFMG, Belo Horizonte, Brazil. February, 2011.

23. *Estruturas Hölder e dinâmica hiperbólica em superfícies.* Workshop Topologia & Dinâmica. UFF, Brazil. February, 2011.

24. *Hyperbolicity vs. Topological Hyperbolicity in dimension 2.* Bicentennial Workshop on Dynamical Systems. San Pedro de Atacama, Chile. May, 2010.

25. *On the smooth cohomology of low-dimensional quasi-periodic diffeomorphisms.* International Conference on Dynamical Systems, Celebrating the 70th anniversary of Jacob Palis. Búzios, Brazil. February, 2010.

26. *On the smooth cohomology of quasi-periodic diffeomorphisms.* Periodic Approximation in Dynamics. Centro di Ricerca Matematica Ennio De Giorgi, Pisa, Italy. January, 2010.

27. *Bilhares exteriores no plano hiperbólico e difeomorfismos do círculo.* Workshop de Topologia & Dinâmica. UFF, Brazil. January, 2010.

28. *On the smooth cohomology of low dimensional quasi-periodic diffeomorphisms.* Advances in low dimensional dynamics. Stony Brook University, USA. June, 2009.

29. *Cohomological equations and invariant distributions for quasi-periodic diffeomorphisms.* Dynamics in dimension two. Pucon, Chile. April, 2009.

30. *First cohomology group and invariant distributions.* Dynamics and Applications in honor of Mauricio Peixoto and David Rand. Universidade do Minho, Portugal. September, 2008.

31. *Cohomologically rigid vector fields: the Katok conjecture in dimension 3.* AMS/SBM First Joint Meeting. IMPA, Brazil. July, 2008.

32. *Introduction to the Cohomological Theory of Dynamical Systems.* Jornadas de Sistemas Dinámicos. PUC del Norte, Chile. December, 2007.

33. *Rigidez Cohomológica: La conjetura de Katok en dimensión 3.* LVII Reunión Anual de la Unión Matemática Argentina. U. Nacional de Córdoba, Argentina. September, 2007.

34. *Cohomologically rigid vector fields: the Katok conjecture in dimension 3.* Foliations, Topology and Geometry in Rio. PUC-Rio, Brazil. July, 2007.

35. *Free curves and periodic points for torus homeomorphisms.* International Symposium of Dynamical Systems. Salvador de Bahia, Brazil. October, 2006.

ORGANIZED EVENTS

- *Escola Brasileira de Sistemas de Dinâmicos.* Belo Horizonte, Brazil. October 7-11, 2019.
- *Workshop de Topologia e Dinâmica (TopDin).* Niterói, Brazil. February 19-21, 2018.
- Conference *New Trends in Onedimensional Dynamics, celebrating the 70th birthday of Welington de Melo.* Rio de Janeiro, Brazil. November 14-18, 2016.
- *Workshop for young researchers on groups acting on manifolds.* Teresópolis, Brazil. June 20-24, 2016
- Conference *Surfaces in Sao Paulo.* São Sebastião, Brazil. April 7-11, 2014.

LANGUAGES

- Spanish: native language
- Portuguese: fluent
- English: fluent
- French: intermediate