

Curriculum Vitae : Thomas GAUTHIER

French, born on August 4, 1984, two children (born in 2016 & 2018).

Employment

2021 - now : Professor at the Université Paris-Saclay
2018 - 2021 : Monge Professor at the Ecole Polytechnique (on leave from Amiens),
2012 - 2018 : Assistant professor at the Université de Picardie Jules Verne (Amiens),
2011 - 2012 : Instructor at the Université Toulouse 2 le Mirail.

Education

December 9, 2020 : Habilitation Thesis Defense at the Université Paris-Saclay,
2008 - 2011 : PhD students & instructor at the Université Toulouse 3 Paul Sabatier. PhD defended in November 2011 (advisor : François Berteloot).
2005 - 2008 : Master of Mathematics, Université Toulouse 3,
2007 : Agrégation de Mathématiques, Université Toulouse 3.

Supervision

2021-2024 : PhD advisor of Yugang Zhang (Université Paris-Saclay)
2019-2022 : PhD co-advisor of Clément Lefèvre (Amiens) with Gabriel Vigny
PhD thesis examiner for B. Rossetti (Toulouse), September 2015,
Supervision of 3 Master thesis in Mathematics (Yugang Zhang 2021, Clément Lefèvre 2019, MéliSSa Mascart 2018),
Supervision of 12 Master thesis for future high school teachers between 2014 and 2018,
Supervision of 2 Bachelor Thesis in 2020 & 2021.
Supervision of 3 middle school students internships in class in their middle school (several visits a year), in 2016-2017 & 2017-2018.

Grants and awards

2018 - 2022 : ANR Grant “Fatou” (grant number ANR-17-CE40-0002-01),
02 - 08/2017 : CNRS sabbatical at Ecole Polytechnique,
2016 : PEPS “Jeunes Chercheur-e-s” grant from CNRS,
2014 - today : French scientific excellence grant (PEDR),
10/2012 - 01/2013 : Invited researcher Grant at the Institute for Mathematical Studies, Stony Brook University, NY (USA).

Publications

1. Strong bifurcation loci of full hausdorff dimension, *Ann. Sci. Ecoles Norm. Sup.* 4^o série, 45(6), 947–984, 2012.
2. Perturbations of flexible Lattès maps, *Bull. Soc. Math. France*, 141(4), 603–614, 2013 (en collaboration avec X. BUFF).

3. On the geometry of bifurcation currents for quadratic rational maps, *Ergodic Th. & Dyn. Sys*, 35 (05), 1369–1379, 2015, (with F. BERTELOOT).
4. Distribution of postcritically finite polynomials, *Israel Journal Math.*, 209(1), 235–292, 2015, (with C. FAVRE).
5. Higher bifurcation currents, neutral cycles and the Mandelbrot set, *Indiana Univ. Math. J.*, 63, 917–937, 2014.
6. Quadratic polynomials, multipliers and equidistribution, *Proc. of the AMS*, 143(7), 3011–3017, 2015, (with X. BUFF).
7. Equidistribution towards the bifurcation current I : Multipliers and degree d polynomials, *Math. Annalen*, 366(1-2), 1–30, 2016.
8. Distribution of postcritically finite polynomials II : Speed of convergence, *J. Modern Dynamics*, 11, 57–98, 2017 (with G. VIGNY).
9. Distribution of points with prescribed derivative in polynomial dynamics, *Riv. Math. Univ. Parma (New Series)*, 8(2), 247–270, 2017, (with G. VIGNY).
10. Classification of special curves in the space of cubic polynomials, *Int. Math. Res. Notices*, 2018(2), 362–411, 2018, (with C. FAVRE).
11. Continuity of the Green function in meromorphic families of polynomials, *Algebra and Number Theory*, 12(6), 1471–1487, 2018 (with C. FAVRE).
12. Distribution of postcritically finite polynomials III : Combinatorial continuity, *Fundamenta Math*, 244(1), 17–48, 2019 (with G. VIGNY).
13. Hyperbolic components of rational maps : Quantitative equidistribution and counting, *Comment Math Helv*, 92(2), 347–398, 2019 (with Y. OKUYAMA & G. VIGNY).
14. Collet, Eckmann and the bifurcation measure, *Invent. Math.*, 217(3), 749–797, 2019 (with M. ASTORG, N. MIHALACHE & G. VIGNY).
15. The bifurcation measure has maximal entropy, *Israel Journal Math*, 235(1), 213–243, 2020 (with H. DE THÉLIN & G. VIGNY).
16. Approximation of non-Archimedean Lyapunov exponents and applications over global fields, *Transactions of the AMS*, 373(12), 8963–9011, 2020, (with Y. OKUYAMA & G. VIGNY).
17. Parametric Lyapunov exponents, *Bull. London Math. Soc.*, 53(3), 660–672, 2021, (with H. DE THÉLIN & G. VIGNY).
18. Dynamical pairs with an absolutely continuous bifurcation measure, to appear in *Annales Fac. Sci. Toulouse*,
19. The arithmetic of Polynomial Dynamical Pairs, 246 pages, accepted in *Annals Math. Studies*, (with C. FAVRE).

Preprints

20. Symmetrization of rational maps : arithmetic properties and families of Lattès maps of \mathbb{P}^k , 22 pages, submitted, (with B. HUTZ & S. KASCHNER).
21. The Geometric Dynamical Northcott and Bogomolov properties, 36 pages, submitted, (with G. VIGNY).
22. The Geometric Dynamical Northcott property for regular polynomial automorphisms of the affine plane, 15 pages, submitted, (with G. VIGNY).
23. Good height functions on quasi-projective varieties : equidistribution and applications in dynamics, 24 pages, submitted.

Selected invited lectures and talks

- Unlikely intersections for polynomial dynamical pairs, Conference *Complex Dynamics*, January 2020, CIRM Marseille, France.
- The Geometric Dynamical Northcott and Bogomolov properties, *Complex Dynamics in Southern Hemisphere*, January 2020, Universidad Catolica de Santiago, Chile.
- The support of the bifurcation measure has positive volume, *Workshop on Real and Complex Hénon maps*, March 2019, Keio University, Tokyo.
- The support of the bifurcation measure has positive volume, Conference *On geometric complexity of Julia sets*, March 2018, Bedlewo, Poland.
- Unlikely intersection for marked points in one dimensional families of polynomials, *BIRS-CMO Workshop on Arithmetic and Complex Dynamics*, November 2017, Oaxaca, Mexico.
- The support of the bifurcation measure has positive volume, Conference *Families of Algebraic Dynamical Systems*, June 2017, Rennes, France.
- Bounded hyperbolic components in Rat_2 , after Adam Epstein, séries of lectures at an ANR Lambda meeting, March 2017, Université Paris 6.
- Bifurcation currents and distribution of postcritically finite rational maps, series of lectures, *RIMS Workshop Complex dynamical systems and related topics*, December 2016, RIMS, Kyoto University.
- Distribution of postcritically finite polynomials, Conference *Geometric Aspects of Modern Dynamics*, January 2016, Porto, Portugal.
- Distribution of postcritically finite polynomials : speed of convergence, *Conference Topics in Analysis and holomorphic dynamics*, September 2015, Banach Center.
- Equidistribution of points of small height and postcritically finite polynomials, au *AIM workshop Postcritically finite rational maps in complex and arithmetic dynamics*, March 2014, American Institut of Mathematics, Palo Alto (CA).
- Arithmetic equidistribution in parameter spaces, series of lectures, *Inaugural meeting of the ANR Lambda Grant*, April 2014, Université Paris-Est Marne-la-Vallée.
- Distribution of postcritically finite polynomials, Summer school *Topics in complex dynamics*, June 2013, Universitat de Barcelona, Spain.
- Distribution of postcritically finite polynomials, *Colloque d'Analyse et Géométrie Complexes*, October 2013, Monastir, Tunisia.
- Strong bifurcation loci of full Hausdorff dimension, *Indam Conference : New trends in holomorphic dynamics*, le Septembre 2012, Cortona, Italy.
- Strong bifurcation have maximal dimension, at the *Workshop on complex and p-adic dynamics*, le February 2012, at ICERM, Providence, RI, USA.
- Bifurcation currents in holomorphic dynamics, series of lectures at the *RGT workshop and Lecture Series, Complex and Non-Archimedean Dynamics*, December 2011, University of Michigan, MI, USA.

Academic and scientific responsibilities

Part of several hiring comities (Temporary teaching position Amiens 2015, Assistant professor Amiens 2016, Monge Professor Ecole Polytechnique 2020 & 2021)

Member of the hiring committee of the FMJH postdocs 2020 - 2023.

2018- 2021 : Adademic advisor for the Bachelor Progam of the Ecole Polytechnique, and appointed member of the Academic Council of the Bachelor Program of the Ecole Polytechnique, 2016–2018 : elected member of one of the University councils (Conseil de Gestion) in Amiens.

2016–2018 : academic advisor for first year master program in Mathematics and responsible for reorganization of the Program, Amiens,
Referee reports for Annales Scientifiques de l'ENS, JEMS, Inventiones Mathematicae, Advances in Math, Math. Zeitschrift, Transaction of the AMS, Conformal Geometry and Dynamics, etc...
2018– today : responsible for the Dynamics Seminar “DynamX” at the Ecole Polytechnique,
2013–2017 : responsible for the Dynamics Seminar in Amiens.
2009–2010 : responsible for the PhD students seminar in Toulouse.

Organization of scientific events

May 2019 : Third meeting of the ANR Fatou Grant (3 days at the Ecole Polytechnique),
April 2018 : First meeting of the ANR Fatou Grant (3 days in Amiens),
March 2017 : *Journée amiénoise de Systèmes dynamiques* (with C. Labrousse),
May 2016 : *Journée de dynamique non-archimédienne*, for the ANR Lambda Grant (with G. Vigny).
April 2016 : *Journée amiénoise de Systèmes dynamiques* (with S. Grivaux & G. Vigny).
November 2015 : Third meeting of the ANR Lambda Grant (3 days in Amiens),
March 2015 : *Journée amiénoise de Systèmes dynamiques*,
March 2014 : *Journée amiénoise de Systèmes dynamiques* (with G. Vigny),