

CURRICULUM VITAE

JASMIN RAISSY

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languages: Italian, English, French

current position: Maître de Conférences at the Institut de Mathématiques de Toulouse, Université Paul Sabatier

General information

- 2004 First level undergraduate degree (Italian “Laurea Triennale”) in Mathematics, received by the Università di Pisa (on September 29, 2004); advisor Prof. Marco Abate; dissertation: “Dinamica olomorfa nell’intorno di un punto parabolico”.
- 2006 Second level undergraduate degree (Italian “Laurea Specialistica”) in Mathematics, received by the Università di Pisa (on July 21, 2006), with a grade of 110/110 *with honours*; advisor Prof. Marco Abate; dissertation: “Normalizzazione di campi vettoriali olomorfi”.
- Winner of a Ph.D. fellowship in the competition to enter the Ph.D. program in Mathematics at the Department of Mathematics “Leonida Tonelli” of the Università di Pisa.
- 2007 From January 1, 2007 until February 26, 2010 Ph.D. student with fellowship at the Università di Pisa.
- 2010 Ph.D. in Mathematics, received by the Università di Pisa on February 26, 2010; advisor Prof. Marco Abate; Thesis: “Geometrical methods in the normalization of germs of biholomorphisms”; grade: *excellent*.
- 2010–2011 From January 1, 2010 until December 31, 2011: post-doc fellow (Italian “assegnista di ricerca”), at Università degli Studi di Milano-Bicocca.
- 2012 Since January 1, 2012 until August 31: post-doc fellow (Italian “assegnista di ricerca”), at Università degli Studi di Milano-Bicocca.
- 2012–now Since September 1, 2012: Maître de Conférences, at the Institut de Mathématiques de Toulouse, Université Paul Sabatier.

Fellowships

- 2007 From January 1, 2007 until December 31, 2009 Ph.D. fellowship of the Università di Pisa.
- 2008 From May 15, 2008 until June 14, 2008 Fellowship of the Institut Mittag-Leffler for the program “Complex analysis of several variables”.
- 2010 From January 1, 2010 until December 31, 2011: post-doc fellow (Italian assegnista di ricerca), at Università degli Studi di Milano-Bicocca.
- 2012 Since January 1, 2012 until August 31, 2012: post-doc fellow (Italian assegnista di ricerca), at Università degli Studi di Milano-Bicocca.

Services

Administrative Tasks

- 2014–2017: From February 2014 until January 2017 member of the Groupe d’Avancement B - Rang B of the Université Paul Sabatier Toulouse III.
- 2013–2017: From October 2013 until September 2017, member of the Bureau du Collège Scientifique Mathématiques of the Université Paul Sabatier Toulouse III.
- 2013–2017: From October 2013 until September 2017, elected member of the Collège Scientifique Mathématiques of the Université Paul Sabatier Toulouse III.
- 2013–: Since January 2013 member of the Council of the Équipe E. Picard, Institut de Mathématiques de Toulouse.
- 2008–2009: From January 1, 2008 until December 31, 2009 representative of the Ph.D. students the council of the Ph.D. School “Galileo Galilei”.
- 2007–2009: From November 01, 2007 until October 31, 2009 representative of the Ph.D. students in Mathematics in the council of the Ph.D. program in Mathematics.

Project’s coordination and primes

- 2013–2015: From December 2013 until Decembre 2015 local coordinator of the Toulouse local unit of the Math-AmSud project “Geometry and Dynamics of Holomorphic Foliations”.
- 2013–2017: From 21/02/2013 until 20/02/2017 local coordinator of the Pisa local unit of the FIRB 2012 project “Geometria Differenziale e Teoria Geometrica delle Funzioni” (grant RBF12W1AQ 002).
- 2013–2017: From October 2013 until September 2017 “Prime d’excellence scientifique”.

Organization

- 2015: Co-organizer, with Marco Abate, Jordi Marzo, Pascal Thomas and Ahmed Zeriahi of the “Winter school And Workshop in Complex Analysis and Geometry - KAWA 6”, C.R.M. De Giorgi, Pisa (Italie), March 23–28, 2015.
- 2015: Co-organizer, with Xavier Buff and Romain Dujardin of the “Rencontre ANR LAMBDA: Pseudogroupes de difféomorphismes holomorphes”, IMT Toulouse, January 29–30, 2015.
- 2013: Co-organizer, with Leonardo Biliotti, Caterina Stoppato and Luigi Vezzoni, of the meeting of the project FIRB 2012 “Geometria Differenziale e Teoria Geometrica delle Funzioni”, Firenze, October 23–25, 2013.

- 2013–2014: Co-organizer, with Yohann Genzmer and Martine Klughertz, of the séminaire “Systèmes Dynamiques” at the Institut de Mathématiques de Toulouse.
- 2012–2013: Co-organizer, with Thomas Didieu and Éveline Legendre of the séminaire “Analyse, géométrie et dynamiques complexes” at the IMT.
- 2012: Co-organizer, with Marco Abate (Pisa) and Arnaud Chéritat (Toulouse) of the INdAM Conference “New Trends in Holomorphic Dynamics”, September 3–7, 2012, Cortona (Italie).
- 2012: Co-organizer, with Francesco Bastianelli, Diego Conti, Gianni Manno, and Federico A. Rossi (Milano Bicocca) of the workshop “Geometria in Bicocca 2012”, May 10–11, 2012, Dipartimento di Matematica e Applicazioni, Milan.
- 2011: Co-organizer, with Gennaro Amendola, Diego Conti, Alessandro Ghigi, Gianni Manno, and Roberto Paoletti (Milano Bicocca), of the workshop “Geometria in Bicocca 2011”, May 12–13, 2011, Dipartimento di Matematica e Applicazioni, Milan.
- 2010–2012: Organizer of the Post-Docs seminar of the Dipartimento di Matematica e Applicazioni of Milano-Bicocca.

Other

- Reviewer for Zentralblatt MATH and Mathematical Reviews.
- Referee for: *Nonlinearity*, *Journal of Mathematical Analysis and Applications*, *Journal of Geometric Analysis*, *Geometric And Functional Analysis*.

Research interests

- Complex analysis; holomorphic dynamical systems; geometric function theory; complex differential geometry.

Talks given

Invited Talks

- 2007 – “Linearization of holomorphic germs with quasi-elliptic fixed points”, at the Centro di Ricerca Matematica “Ennio de Giorgi”, Pisa (March 26, 2007).
- “Linearization of holomorphic germs with quasi-Brjuno fixed points”, at the Department of Mathematics and Statistics of the University of Cyprus, Nicosia (Cyprus) (December 20, 2007).
- 2008 – “Linearizzazione di germi olomorfi con punti fissi di tipo quasi-Brjuno”, at the Dipartimento di Matematica, Università di Parma, Parma (February 13, 2008).
- “Linearization in presence of resonances”, at the Institut Mittag-Leffler, Djursholm (Stockholm), talk of the program “Complex analysis of several variables”, (June 10, 2008).
 - “Linearizzazione in presenza di risonanze”, Dipartimento di Matematica, Università di Roma Tor Vergata, Roma (November 18, 2008).
- 2009 – “Simultaneous linearization in presence of resonances”, at the Mathematics Department of the University of Michigan, Ann Arbor, Michigan (USA) (March 9, 2009).
- “Actions de tore dans le problème de la normalisation”, at the Département de Mathématiques de la Faculté des Sciences d’Orsay, Université Paris-Sud 11, Paris (May 15, 2009).

- 2010 – “Torus actions in the normalization problem”, Korteweg-de Vries Institute for Mathematics (Faculty NWI), University of Amsterdam, (February 16, 2010).
- “Azioni di toro nel problema della normalizzazione”, Dipartimento di Matematica, Università di Roma Tor Vergata, Roma (March 16, 2010).
 - “Azioni di toro nel problema della normalizzazione”, Dipartimento di Matematica e Applicazioni, Università degli Studi di Milano-Bicocca, Milan (March 25, 2010).
- 2011 – “Normal forms in complex dynamics”, School of Mathematics, Trinity College, Dublin, Ireland, (March 10, 2011).
- “Holomorphic linearization of commuting germs of holomorphic maps”, Institut de Matemàtica, Universitat de Barcelona, Barcelona, Spagna (April 14, 2011).
 - “Normal forms in local complex dynamics”, Department of Mathematics, University of Oslo, Oslo, Norway, (August 24, 2011).
- 2012 – “Formes normales en dynamique holomorphe”, Laboratoire Paul Painlevé, Université Lille I, Lille, (February 24, 2012).
- “Dynamics of multi-resonant biholomorphisms”, Centro di Ricerca Matematica “Ennio de Giorgi”, Pise (March 01, 2012).
 - “Operatori di Toeplitz e misure di Carleson in domini fortemente pseudoconvessi”, Dipartimento di Matematica “Francesco Brioschi”, Politecnico di Milano, (21/06/2012).
 - “Formes normales en dynamique holomorphe”, Journée d’accueil de l’équipe Picard, IMT, Toulouse (24/09/2012).
 - “Itération inverse dans des domaines fortement convexes”, Institut Fourier, Université Grenoble I, Grenoble (09/10/2012).
- 2013 – “Denjoy-Wolff theorems in not necessarily smooth convex domains”, Centro di Ricerca Matematica “Ennio de Giorgi”, Pisa, (30/04/2013).
- “Formes normales en dynamique holomorphe”, séminaire de systèmes dynamiques et géométrie d’Angers, LAREMA Angers, (03/12/2013).
- 2014 – “Wolff-Denjoy theorems in non-smooth convex domains”, complex analysis seminar, Universität Wien, Vienna (08/04/2014).
- “A two-dimensional polynomial map with a wandering Fatou component”, Centro di Ricerca Matematica “Ennio de Giorgi”, Pisa (10/11/2014).
 - “Méthodes locales en Dynamique Holomorphe”, HCERES evaluation visit at the IMT (20/11/2014).
 - “Composantes de Fatou errantes en dimension deux”, séminaire de systèmes dynamiques, IMT Toulouse, (12/12/2014).
- 2015 – “Composantes de Fatou errantes en dimension deux”, séminaire GT Ergodique et Dynamique, Département de Mathématiques d’Orsay, (02/02/2015).

Invited Talks at Conferences

- 2008 – “Linearization in presence of resonances”, at the Grand Hotel Bellavista of Levico Terme (Trento), invited speaker at the conference “Progressi Recenti in Geometria Reale e Complessa”, Levico Terme (Trento), (October 21, 2008).
- 2009 – “Torus actions in the normalization problem”, at the C.I.R.M. of Luminy (Marsiglia) France, speaker at the “International conference in complex analysis”, Luminy (Marseille) France, (July 14, 2009).

- “Torus actions in the normalization problem”, at the Centro di Ricerca Matematica “Ennio de Giorgi” of Pisa, invited speaker at the conference “Asymptotics in dynamics, geometry and PDEs; generalized Borel summation”, Pisa (October 16, 2009).
- 2010 – “Torus actions in the normalization problem”, speaker at the “Workshop in Complex Analysis and Geometry”, Albi (France) (January 30, 2010).
- “Geometrical methods in the normalization problem”, speaker at the conference “CR Geometry and PDE’s - IV”, Levico Terme (Trento), (June 03, 2010).
- “Holomorphic linearization of commuting germs of holomorphic maps”, invited speaker at “AMS 2010 Fall Eastern Sectional Meeting: Special Session on Several Complex Variables”, Syracuse University, Syracuse (NY) (October 03, 2010).
- “Holomorphic linearization of commuting germs of holomorphic maps”, invited speaker at the conference “Progressi Recenti in Geometria Reale e Complessa” Levico Terme (Trento), (October 22, 2010).
- 2011 – “Dynamics of multi-resonant biholomorphisms”, invited speaker at the conference “Complex Analysis and Geometry XX” Levico Terme (Trento), (June 16, 2011).
- “Forme normali in dinamica olomorfa”, invited speaker at the congress XX Congresso U.M.I., sezione di Geometria Complessa, Bologna, (September 16, 2011).
- “Dynamics of multi-resonant biholomorphisms”, invited speaker at “Workshop in Several Complex Variables” Amsterdam, (December 13, 2011).
- 2012 – “Backward iteration in strongly convex domains”, invited speaker at the workshop “Interactions between continuous and discrete holomorphic dynamical systems”, Banff Centre in Banff (Alberta, Canada) (10/07/2012).
- “Carleson measures and Toeplitz operators in strongly pseudoconvex domains”, invited speaker at the conference “Several complex variables”, University of Ljubljana, Ljubljana (28/09/2012).
- “Backward iteration in strongly convex domains”, invited speaker at the conference “Progressi Recenti in Geometria Reale e Complessa” Levico Terme, (15/10/2012).
- 2013 – “Normal forms in local holomorphic dynamics”, invited speaker at “Chinese - Norwegian Mathematics Workshop”, Trondheim, Norway, (28/06/2013).
- “Forme normali in dinamica olomorfa locale”, meetinf of the project FIRB2012 “Geometria Differenziale e Teoria Geometrica delle Funzioni”, Florence (23/10/2013).
- 2014 – “Introduction à la dynamique locale tangente à l’identité en dimension 2”, meeting of the project ANR LAMBDA, Paris Marne la Vallée, (16/04/2014).
- “A Julia-Wolff-Carathéodory theorem for infinitesimal generators of one-parameter semigroups”, conference “TSIMF Symposium on Complex Analysis and Complex Dynamics”, Sanya, China, (15/05/2014).
- “A Julia-Wolff-Carathéodory theorem for infinitesimal generators of one-parameter semigroups”, ICM satellite conference “The 10th Korean Conference in Several Complex Variables”, Gyeong-Ju, Korea, (08/08/2014).
- 2015 – “Wandering Fatou components in dimension two”, 19th NORDAN conference in Complex Analysis, Reykjavik, (26/04/2015).
- “Wandering Fatou Components”, Complex Analysis and Geometry - XXII, Levico Terme (Trento), (02/06/2015).
- “Wandering Fatou Components in Dimension Two”, AMS-EMS-SPM Meeting - Complex Dynamics and Foliations, Porto, (11/06/2015).

Other

- 2010 – PhD thesis defense: “Geometrical methods in the normalization of germs of biholomorphisms”, Pise, 26/02/2010.
- 2011 – Poster: “Holomorphic linearization of commuting germs of holomorphic maps”, invited poster for the conference “Variational and perturbative methods for nonlinear differential equations”, Venice, 20–22/01/2011.
- 2013 – Popularizing talk: “Le tournesol de Fibonacci”, Promenade mathématique for the 1ère journée toulousaine Filles et Mathématiques: une équation lumineuse, Toulouse, 19/12/2013.
- 2014 – Popularizing talk: “Le tournesol de Fibonacci”, during the semaine des mathématiques, lycée Pierre d’Aragon de Muret, Muret, 17/03/2014.
 - Popularizing talk: “Le tournesol de Fibonacci”, visit at the IMT of the lauréats des olympiades mathématiques académiques, IMT Toulouse, 24/06/2014.
- 2015 – Popularizing talk: “Le tournesol de Fibonacci”, conference Maths-En-Jeans, IMT Toulouse, 03/04/2015.

Conferences and schools attended

- 2005 Summer Course of Mathematics of the Scuola Matematica Interuniversitaria held in Perugia from August 1 until September 1; classes of Complex Analysis (Prof. Morris Kalka) and Algebraic Geometry (Prof. Philippe Ellia).
- 2007 Workshop “Local Holomorphic Dynamics” at the Centro di Ricerca Matematica “Ennio de Giorgi” of Pisa, January 22–26, 2007.
 - April–July: Intensive research period “Dynamical Systems and Number Theory” at the Centro di Ricerca Matematica “Ennio de Giorgi” of Pisa, April 16 – July 13, 2007.
 - June–July: Summer school “Homogeneous flows, moduli spaces, and arithmetic” organized by the Clay Mathematics Institute at the Centro di Ricerca Matematica “Ennio de Giorgi” of Pisa, June 11 – July 6, 2007.
 - Conference “Rigidity in dynamics and geometry” at the C.I.R.M. of Luminy (Marseille) France, May 21–25, 2007.
 - Conference “Complex Analysis and Geometry XVIII” organized by the C.I.R.M. of Trento, held in Levico, May 28 – June 1, 2007.
 - “Joint International Meeting UMI-DMV” held in Perugia June 18–22, 2007.
- 2008 School “UK Dynamical Systems Graduate School on Complex Dynamics”, held at the University of Liverpool, January 14–18, 2008.
 - “Perspectives in Analysis, Geometry, and Topology”, at the Stockholm University, May 19–25, 2008.
 - Summer school “Holomorphic Dynamical Systems” organized by the Fondazione CIME “Roberto Conti”, held in Cetraro (Cosenza), July 7–12, 2008.
 - Workshop INdAM “Holomorphic Iteration, Semigroups, and Loewner Chains” held at the Istituto Nazionale di Alta Matematica, University of Roma La Sapienza, September 9–12, 2008.

- Conference “Calcul moulien, Résurgence, Resommation” held at the Laboratoire J.A. Dieudonné, CNRS et Université de Nice “Sophia Antipolis”, October 15–17, 2008.
- Conference “Progressi Recenti in Geometria Reale e Complessa”, C.I.R.M. Trento, held at the Grand Hotel Bellavista of Levico Terme (Trento), October 20–24, 2008 (invited speaker).
- 2009 Conference “Calcul Moulien, Renormalisation et Algèbres de Hopf” held at the Département de Mathématiques de la Faculté des Sciences d’Orsay, Université Paris-Sud 11, Paris, February 5–6, 2009.
- Workshop “Multivariable Complex Dynamics”, held at the Banff International Research Station for Mathematical Innovation and Discovery (BIRS), Banff Centre in Banff (Alberta, Canada), March 1–6, 2009.
- Conference “Complex Analysis and Geometry XIX” organized by the C.I.R.M. of Trento, held at the Grand Hotel Bellavista of Levico Terme (Trento), June 1–5, 2009.
- Conference “Dynamics and Complex Geometry II” held at the C.I.R.M. of Luminy (Marseille) France, June 15–19, 2009.
- Conference “International conference in complex analysis” held at the C.I.R.M. of Luminy (Marseille) France, July 13–17, 2009 (speaker).
- Conference “Midwest Several Complex Variables Conference” held at the Purdue University West Lafayette, IN (USA), October 10–12, 2009.
- Conference “Asymptotics in dynamics, geometry and PDEs; generalized Borel summation” held at the Centro di Ricerca Matematica “Ennio de Giorgi” of Pisa, October 12–16, 2009 (invited speaker).
- 2010 “Winter school in Complex Analysis and Geometry”, Institut de Mathématiques de Toulouse, January 25–29, 2010.
- “Workshop in Complex Analysis and Geometry”, Albi, January 29–31, 2010 (speaker).
- Workshop “Geometria in Bicocca”, Dipartimento di Matematica e Applicazioni, Milano-Bicocca, May 6–7, 2010.
- “CR Geometry and PDE’s - IV”, C.I.R.M. di Trento, Levico, June 6–11, 2010 (speaker).
- “The 4th GAF Conference – Group Actions in Topology and Analysis”, Dipartimento di Matematica e Applicazioni, Milano-Bicocca, September 14–17, 2010.
- “AMS 2010 Fall Eastern Sectional Meeting: Special Session on Several Complex Variables”, Syracuse University, Syracuse (NY), October 2–3, 2010 (invited speaker).
- “Progressi Recenti in Geometria Reale e Complessa”, C.I.R.M. di Trento, Levico, October 17–22, 2010 (invited speaker).
- 2011 Meeting “Variational and perturbative methods for nonlinear differential equations”, Venice, January 20–22, 2011 (invited poster).
- “Winter school and Workshop in Complex Analysis and Geometry - KAWA 2”, C.I.R.M. (Luminy) January 31 to February 5, 2011.
- “Frontiers in Complex Dynamics (Celebrating John Milnor’s Achievements in Mathematics)”, Banff Centre in Banff (Alberta, Canada), February 21–26, 2011.

- Workshop “Geometria in Bicocca 2011”, Dipartimento di Matematica e Applicazioni, Milano-Bicocca, May 12–13, 2011 (organizer).
- “Complex Analysis and Geometry XX”, C.I.R.M. di Trento, Levico, June 13–17, 2011 (invited speaker).
- “Conference Dynamics and Geometry”, Institut Henri Poincaré, Paris, June 20–24, 2011.
- Summer school “Pluripotential theory”, Fondazione CIME “Roberto Conti”, Cetraro (Italy), July 11–16, 2011.
- “XX Congresso U.M.I.”, Bologna, September 12–17, 2011 (invited speaker).
- Workshop “Mould Calculus, Resurgence and Combinatorial Hopf Algebras”, Centro di Ricerca Matematica “Ennio de Giorgi” di Pisa, November 14–18, 2011.
- “Workshop in Several Complex Variables”, Amsterdam, December 12–17, 2011 (invited speaker).
- 2012 “Workshop in Complex Analysis and Geometry - KAWA 3”, Universitat de Barcelona, February 3–4, 2012.
- Workshop “Geometria in Bicocca 2012”, Dipartimento di Matematica e Applicazioni, Università degli Studi di Milano Bicocca, 10 and 11 may 2012 (**co-organizer**).
- “CR Geometry and PDE’s - V”, Levico (Italy), 4–8 june 2012.
- Workshop “Interactions between continuous and discrete holomorphic dynamical systems”, Banff Centre in Banff (Alberta, Canada), 8–13 july 2012 (**invited speaker**).
- INdAM conference “New Trends in Holomorphic Dynamics”, 3–7 september 2012, Cortona (**co-organizer**).
- International conference “Several complex variables”, University of Ljubljana, Ljubljana, 26–29 september 2012 (**invited speaker**).
- “Progressi Recenti in Geometria Reale e Complessa” C.I.R.M. de Trento, Levico (Italy), 14–19 october 2012. (**invited speaker**).
- 2013 “Winter school and Workshop in Complex Analysis and Geometry - KAWA 4”, Toulouse and Albi, 21–27 january 2013.
- Workshop “Combinatorial Hopf Algebras and Mould Calculus”, Laboratoire Fibonacci, Centro di Ricerca Matematica “Ennio de Giorgi”, Pisa, 8–12 may 2013.
- “Complex Analysis and Geometry XX”, C.I.R.M., Levico, Trento 2–7 june 2013.
- “Chinese - Norwegian Mathematics Workshop”, Trondheim, Norway, 27–30 june 2013 (**invited speaker**).
- “Abel symposium 2013: Complex geometry”, Trondheim, Norway, 2–5 july 2013.
- “Dynamical systems and Galoisian theories – Conference in honor of Jean-Pierre Ramis for his 70 th Birthday”, IMT, Toulouse, 2–4 september 2013.
- “Topological and Combinatorial Problems in One-dimensional Complex Dynamics”, Centro di Ricerca E. De Giorgi, Pisa, 14–18 october 2013.
- “Incontro del progetto FIRB 2012 Geometria Differenziale e Teoria Geometrica delle Funzioni”, Firenze, 23–25 october 2013. (**co-organizer and speaker**).

- Workshop “The Complex Structure of Attracting Sets”, Lorentz Center, Leiden (The Netherlands), 18–22 november 2013.
- 2014 Workshop MACK “Familles de variétés Calabi-Yau”, IMT Toulouse, 8–10 january 2014.
 Workshop “Holomorphic and Symbolic Dynamics”, IMT Toulouse, 20–24 january 2014.
 “Nordic Complex Analysis Meeting - NORDAN” and Komplex Analysis Winter school And workshop (KAWA) “Winter school And Workshop in Complex Analysis and Geometry - KAWA 5”, C.I.R.M., Luminy (Marsiglia), 24–29 march 2014.
 Meeting of the project ANR LAMBDA, Paris Marne la Vallée, 14–16 april 2014 (**invited speaker**).
 “TSIMF Symposium on Complex Analysis and Complex Dynamics”, Sanya, China, 12–16 may 2014 (**invited speaker**).
 “A conference in honor of Pierre Dolbeault on the occasion of his 90th birthday anniversary”, Paris, 2–4 june 2014.
 Conférence satellite de l’ICM “The 10th Korean Conference in Several Complex Variables”, Gyeong-Ju, Korea, 7–12 august 2014 (**invited speaker**).
 Conférence “Complex Geometry, Analysis and Foliations”, ICTP, Trieste, from September 29 until October 3, 2014.
- 2015 “Rencontre ANR LAMBDA: Pseudogroupes de difféomorphismes holomorphes”, IMT Toulouse, January 29–30, 2015 (**co-organizer**).
 “Winter school and Workshop in Complex Analysis and Geometry - KAWA 6”, C.R.M. De Giorgi, Pisa (Italy), March 23–28, 2015, (**co-organizer**).
 “19th NORDAN conference in Complex Analysis”, Reykjavik, April 25–26, 2015 (**invited speaker**).
 “IMS XXV - Celebrating 25 years of low-dimensional dynamics at Stony Brook”, Stony Brook USA, May 8–12, 2015.
 “Complex Analysis and Geometry - XXII”, Levico Terme (Trento), June 1–5, 2015 (**invited speaker**).
 “AMS-EMS-SPM Meeting - Session of Complex Dynamics and Foliations”, Porto, June 10–13, 2015 (**invited speaker**).

Periods abroad

- 2007 Department of Mathematics and Statistics of the University of Cyprus, Nicosia, Cyprus, **December 16–23, 2007**.
- 2008 Institut Mittag-Leffler, Djursholm (Stockholm), Sweden, **May 15 – June 14, 2008**, during the program “Complex analysis of several variables”.
- 2009 Département de Mathématiques de la Faculté des Sciences d’Orsay, Université Paris-Sud 11, Paris, France, **January 12 – June 14, 2009**.
 Mathematics Department of the University of Michigan, Ann Arbor, Michigan (USA), **March 8–15, 2009**.

- Institut de Recherche Mathématique Avancé, Université de Strasbourg, Strasbourg, **June 8–10, 2009.**
- 2010 Korteweg-de Vries Institute for Mathematics (Faculty NWI), University of Amsterdam, **February 15–21, 2010.**
 Mathematics Department of the Syracuse University, Syracuse, New York (USA), **October 01–07, 2010.**
- 2011 School of Mathematics, Trinity College, Dublin, Ireland, **March 07–12, 2011.**
 Institut de Matemàtica, Universitat de Barcelona, **April 13–21, 2011.**
 Department of Mathematics, University of Oslo, **August 22–29, 2011.**
- 2013 NTNU, Trondheim, Norway, **June 27 – July 08, 2013.**
- 2014 University of Porto, Porto, **July 7–14, 2014.**

Teaching activity

- 2007/2008 Short introductory course on Basic Mathematics for freshmen undergraduate students in Chemistry, Università di Pisa, September 17–21, 2007.
 Short introductory course on Basic Mathematics for freshmen undergraduate students in Biology, Università di Pisa, September 24–28 2007.
 Spring semester 2007/2008: Exercise class of ALGEBRA-B for undergraduate students in Computer Science, Università di Pisa.
 Reading course on Local dynamics of singular holomorphic foliations, supervised by M. Abate, held in 2007/2008 at the Department of Mathematics “L. Tonelli”, whose content appeared in [CNRR].
- 2008/2009 Short introductory course on Basic Mathematics for freshmen undergraduate students in Chemistry, Università di Pisa, September 15–19, 2008.
 Short introductory course on Basic Mathematics for freshmen undergraduate students in Biology, Università di Pisa, September 22–26, 2008.
- 2009/2010 Short introductory course on Basic Mathematics for freshmen undergraduate students in Chemistry, Università di Pisa, September 14–18, 2009.
 Short introductory course on Basic Mathematics for freshmen undergraduate students in Biology, Università di Pisa, September 21–25, 2009.
- 2010/2011 Fall semester 2010/2011: Exercise class of “Geometria 2” for undergraduate students in Mathematics, University of Milano-Bicocca.
 Spring semester 2010/2011: Exercise class of “Istituzioni di Matematiche 2” for undergraduate students in Primary Education Sciences, University of Milano-Bicocca.
- 2011/2012 Short introductory course on Basic Mathematics for freshmen undergraduate students in Sciences, University of Milano-Bicocca, September 2011.
 Fall semester 2011/2012: Exercise class of “Matematica” for undergraduate students in Biology, University of Milano-Bicocca.
 Spring semester 2011/2012: Exercise class of “Geometria 2” for undergraduate students in Mathematics, University of Milano-Bicocca.
- 2012/2013 Spring semester 2012/2013: Chargée du Cours et TD d’Analyse complexe, L2 Parcours spécial, Université Paul Sabatier.

Spring semester 2012/2013: Chargée du Cours et TD de Groupes et Géométrie, L2 Mathématiques, Université Paul Sabatier.

Spring semester 2012/2013: Chargée des TD de Mathématiques 2 option MP, L2 Preparation Concours Écoles d'Ingenieurs, Université Paul Sabatier.

2013/2014 Spring semester 2013/2014: Chargée du Cours et TD d'Analyse complexe, L2 Parcours spécial, Université Paul Sabatier.

Spring semester 2013/2014: Chargée du Cours et TD de Mathématiques 2 - Algèbre et analyse élémentaires, L1 SFA, Université Paul Sabatier.

2014/2015 Fall semester 2014/2015: Chargée de moitié du Cours et TD de Calcul Différentiel et Topologie, L2 Mathématiques, Université Paul Sabatier.

Spring semester 2014/2015: Chargée du Cours et TD d'Analyse complexe, L2 Parcours spécial, Université Paul Sabatier.

Spring semester 2014/2015: Chargée du Cours et TD de Mathématiques 2 - Algèbre et analyse élémentaires, L1 SFA, Université Paul Sabatier.

Outreach

2005 Tutor in the “Mathematical Week 2005”, (February 7–10, 2005) organized by the Department of Mathematics of the Università di Pisa for high school students.

2006 Tutor in the “Mathematical Week 2006”, (February 7–10, 2006) organized by the Department of Mathematics of the Università di Pisa for high school students.

2007 Tutor in the “Mathematical Week 2007”, (February 5–8, 2007) organized by the Department of Mathematics of the Università di Pisa for high school students.

2008 Tutor in the “Mathematical Week 2008”, (February 4–8, 2008) organized by the Department of Mathematics of the Università di Pisa for high school students.

Publications

Published Articles

- [1] J. RAISSY: *Linearization of holomorphic germs with quasi-Brjuno fixed points*, Math. Z., **264** (2010), pp 881–900.
- [2] J. RAISSY: *Simultaneous linearization of holomorphic germs in presence of resonances*, Conform. Geom. Dyn. **13** (2009), pp 217–224.
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Research activity

My research is mainly devoted to *discrete holomorphic dynamical systems*. In particular I dealt with normal forms for germs of biholomorphisms in several complex variables, local

discrete dynamics, and global discrete dynamics in convex domains. Recently, I also studied questions in geometric function theory in several complex variables.

1. Normal forms in holomorphic dynamics

Given a germ of biholomorphism f of \mathbb{C}^n at a fixed point p , one would like to study the dynamics of f near the fixed point, i.e., for each point q in a (sufficiently) small neighbourhood of p , one would like to describe the asymptotic behaviour of the sequence $\{f^k(q)\}_{k \geq 0}$ of the iterates of f at q , where f^k is the composition of f with itself k times. Since such a problem is invariant under translation, we can reduce ourselves to study germs of biholomorphisms of (\mathbb{C}^n, O) fixing the origin. Locally, f can be written as a convergent power series, that is, using the standard multi-index notation, we have $f(z) = \Lambda z + \sum_{\substack{Q \in \mathbb{N}^n \\ |Q| \geq 2}} f_Q z^Q$, where Λ is a $n \times n$ matrix with complex coefficients, $f_Q \in \mathbb{C}^n$, and if $Q = (q_1, \dots, q_n)$, then $|Q| := \sum_{j=1}^n q_j$ and $z^Q := z_1^{q_1} \dots z_n^{q_n}$. Up to a linear change of the coordinates, we can assume that Λ is in Jordan normal form, with eigenvalues $\lambda_1, \dots, \lambda_n \in \mathbb{C}^*$ not necessarily distinct.

Since the dynamics does not change if we change coordinates, a natural idea is to look for a solution of a normalization problem: *given a germ of biholomorphism f of \mathbb{C}^n fixing the origin and with linear part in Jordan normal form, does it exist a local change of coordinates φ of \mathbb{C}^n , fixing the origin and such that $\varphi^{-1} \circ f \circ \varphi =$ “simple form”?*

This will reduce the study of the dynamics of f to the simpler study of the dynamics of the “simple form”. Moreover, one usually assumes $d\varphi_O = \text{Id}$ because the linear part of f already is in (Jordan) normal form.

Of course, we have to specify what we mean by “simple form”. A natural choice for a “simple form” is the linear term of our given germ; so in this case we have to deal with the:

Linearization problem. *Let f be a germ of biholomorphism of \mathbb{C}^n fixing the origin and with linear part Λ in Jordan normal form. Does it exist a local change of coordinates φ of \mathbb{C}^n , fixing the origin, with $d\varphi_O = \text{Id}$, such that $\varphi^{-1} \circ f \circ \varphi = \Lambda$?*

A way to solve such a problem is to first look for a formal transformation φ solving $f \circ \varphi = \varphi \circ \Lambda$, and then to check whether φ is convergent.

The answer depends on the set of eigenvalues of Λ , usually called the *spectrum* of Λ . In fact it may happen that there exists a multi-index $Q = (q_1, \dots, q_n) \in \mathbb{N}^n$, with $|Q| \geq 2$, such that $\lambda^Q - \lambda_j := \lambda_1^{q_1} \dots \lambda_n^{q_n} - \lambda_j = 0$ for some $1 \leq j \leq n$; a relation of this kind is called a *multiplicative resonance* of f , and Q is called a *resonant multi-index*. A *resonant monomial* is a monomial z^Q in the j -th coordinate such that $\lambda^Q = \lambda_j$.

Resonances are the formal obstruction to linearization. Indeed, we have the following classical result:

Theorem. (Poincaré, 1893 [P]; Dulac, 1904 [D]) *Let f be a germ of biholomorphism of \mathbb{C}^n fixing the origin O with linear part Λ in Jordan normal form. Then there exists a formal transformation φ of \mathbb{C}^n , without constant term and with linear part equal to the identity, conjugating f to a formal power series $g \in \mathbb{C}[[z_1, \dots, z_n]]^n$ without constant term, with linear term Λ and containing only resonant monomials.*

The formal series g is called a *Poincaré-Dulac normal form* of f . Hence the second natural choice for a “simple form” is a Poincaré-Dulac normal form; in this case we say that we have to deal with the:

Normalization problem. *Let f be a germ of biholomorphism of \mathbb{C}^n fixing the origin and with linear part Λ in Jordan normal form. Does it exist a local change of coordinates φ of \mathbb{C}^n , fixing the origin, with $d\varphi_O = \text{Id}$, such that $\varphi^{-1} \circ f \circ \varphi$ is a Poincaré-Dulac normal form of f ?*

Even without resonances, the holomorphic linearization is not guaranteed. One has to study how the numbers $\lambda^Q - \lambda_j$ approach zero as $|Q| \rightarrow +\infty$; this is known as the *small divisors problem* in this context. Furthermore Poincaré-Dulac normal forms are not unique, and this makes particularly difficult the study of convergence.

The linearization problem in dimension 1 has been thoroughly studied, and essentially solved, by Yoccoz [Y1–2] between 1988 and 1995 (see also [A] and [B]). The best result in several variable in the non-resonant case is due to Brjuno [Brj] in 1972, and he gives a sufficient condition (but it is not known whether it is necessary) for the convergence of the linearization. Other partial linearization results are due to Pöschel [Pö] in 1986, Nishimura [N] in 1983 and others, whereas recent results of linearization in presence of resonances are obtained by Rüssmann in 1977 (but published only in [Rü] 2002), Pérez-Marco [PM] in 2001 and Rong [Ro] in 2008 (for a more detailed discussion, see the first chapter of [R4]).

On the other side, the holomorphic normalization problem is much more open; there are results in the parallel case of continuous dynamical systems, namely of germs of holomorphic vectors fields singular at the origin, due to Brjuno [Brj], and, more recently, in 2005, to Zung [Zu1–2], and other results due to Écalte ([ÉS], [ÉV]) on the theory of holomorphic invariants.

I shall now outline my contributions to the linearization and the normalization problems.

1.1 Holomorphic Linearization. In dealing with the linearization problem in presence of resonances, I found that, under certain arithmetic conditions on the eigenvalues and some restrictions on the resonances (which can be present), a necessary and sufficient condition for holomorphic linearization in presence of resonances is the existence of a particular f -invariant complex manifold (see [R1] for definitions and proofs):

Theorem 1. (Raissy, 2010 [R1]) *Let f be a germ of biholomorphism of \mathbb{C}^n having the origin O as a quasi-Brjuno fixed point of order s . Then f is holomorphically linearizable if and only if it admits an osculating manifold M of codimension s such that $f|_M$ is holomorphically linearizable.*

Moreover such a result has as corollaries most of the known linearization results.

I then explored in this setting the consequences of the general heuristic principle saying that if a map f commutes with a map g , then some properties of g might be inherited by f , and I showed how commuting with a linearizable germ gives us information on the germs that can be conjugated to a given one.

1.2 Simultaneous Holomorphic Linearization. For instance, one possible generalization of the linearization problem is to ask when a given set of $m \geq 2$ germs of biholomorphisms f_1, \dots, f_m of \mathbb{C}^n at the same fixed point, which we may place at the origin, are *simultaneously holomorphically linearizable*, i.e., there exists a local holomorphic change of coordinates conjugating f_h to its linear part for each $h = 1, \dots, m$.

I found that if f_1, \dots, f_m have diagonalizable linear part and are such that f_1 commutes with f_h for any $h = 2, \dots, m$, under certain arithmetic conditions on the eigenvalues of $(df_1)_O$ and some restrictions on their resonances, f_1, \dots, f_m are simultaneously holomorphically linearizable if and only if there exists a particular complex manifold invariant under f_1, \dots, f_m (see [R2] for definitions and proofs):

Theorem 2. (Raissy, 2009 [R2]) *Let f_1, \dots, f_m be $m \geq 2$ germs of biholomorphisms of \mathbb{C}^n , fixing the origin. Assume that f_1 has the origin as a quasi-Brjuno fixed point of order s , with $1 \leq s \leq n$, and that it commutes with f_h for any $h = 2, \dots, m$. Then f_1, \dots, f_m are simultaneously holomorphically linearizable if and only if there exists a germ of complex*

manifold M at O of codimension s , invariant under f_h for each $h = 1, \dots, m$, which is a simultaneous osculating manifold for f_1, \dots, f_m and such that $f_1|_M, \dots, f_m|_M$ are simultaneously holomorphically linearizable.

In [R6], I also investigated the shape a (formal) simultaneous linearization of the given germs can have, proving that if f_1, \dots, f_h are formally linearizable, commute and their linear parts are almost simultaneously Jordanizable, then they are simultaneously formally linearizable. I then introduced a simultaneous arithmetic Brjuno-type condition, proving that, if the linear terms of the germs are diagonalizable, the germs commute and the Brjuno-type condition holds, then they are holomorphically simultaneously linearizable (see [R6] for definitions and proofs). The next result answers to a multi-dimensional version of a problem raised by Moser [M].

Theorem 3. (Raissy, 2012 [R6]) *Let f_1, \dots, f_h be $h \geq 2$ formally linearizable germs of biholomorphisms of \mathbb{C}^n fixing the origin, with simultaneously diagonalizable linear parts, and satisfying the simultaneous Brjuno condition. Then f_1, \dots, f_h are simultaneously holomorphically linearizable if and only if they all commute pairwise.*

1.3 Brjuno conditions for linearization in presence of resonances. Rüssmann in [Rü], using a functional approach, proved that if a germ of biholomorphism is formally linearizable and the eigenvalues of its linear part satisfy a suitable arithmetic condition then the germ is holomorphically linearizable. In [R5] I gave a direct proof of an analogue of Rüssmann's result under a slightly different (but equivalent; see [R6]) Brjuno-type assumption, using explicit computation with the power series expansion and then proving convergence via majorant series (see [R5] for definitions and proofs):

Theorem 4. (Raissy, 2011 [R5]) *Let f be a germ of biholomorphism of \mathbb{C}^n fixing the origin and such that df_O is diagonalizable. If f is formally linearizable and the spectrum of df_O satisfies the reduced Brjuno condition, then f is holomorphically linearizable.*

1.4 Torus Actions in the Normalization Problem. I studied (in [R3]) commutations with a particular kind of linearizable objects: torus actions. I found out in a complete and computable manner what kind of structure a torus action must have in order to obtain a Poincaré-Dulac holomorphic normalization, studying the possible torsion phenomena. In particular, I linked the eigenvalues of the linear part of our germ of biholomorphism to the weight matrix of the action. The link and the structure I found are more complicated than what one would expect; a detailed study was needed to completely understand the relations between torus actions, holomorphic Poincaré-Dulac normalizations, and torsion phenomena. Moreover, in [R3] I was able to evidence up to which point it is possible to push the analogy between germs of biholomorphisms and germs of vector fields in the normalization problem, identifying several kinds of torsion, phenomena absent in the case of vector fields. I also provided an example of techniques that can be used to construct torus actions. An example of the results I obtained is the following (see [R3] for definitions, proofs and other results):

Theorem 5. (Raissy, 2010 [R3]) *Let f be a germ of biholomorphism of \mathbb{C}^n fixing the origin O . Assume that, denoted by $\lambda = \{\lambda_1, \dots, \lambda_n\}$ the spectrum of the linear part Λ of f , the unique $[\varphi] \in (\mathbb{C}/\mathbb{Z})^n$ such that $\lambda = e^{2\pi i[\varphi]}$ is of toric degree $1 \leq r \leq n$ and in the impure torsion case. Then f admits a holomorphic Poincaré-Dulac normalization if and only if there exists a holomorphic effective action on (\mathbb{C}^n, O) of a torus of dimension $r - 1$ commuting with f and such that the columns of the weight matrix of the action are reduced torsion-free toric vectors associated to $[\varphi]$.*

1.5 Renormalization. Jointly with M. Abate, in [AR1], we described a general procedure for the renormalization of germs of endomorphisms (and also of formal transformations) of \mathbb{C}^n

fixing the origin, producing a normal form simpler than the classic Poincaré-Dulac normal form. Such a procedure is particularly useful for superattracting or tangent to the identity germs, i.e., with vanishing or identical linear term, since such germs are automatically in Poincaré-Dulac normal form, and thus Poincaré-Dulac normal forms are useless in these cases. As an example of application we computed a complete list of normal forms for bi-dimensional superattracting germs with non-vanishing quadratic term; in most cases, our normal forms are the simplest possible ones. We also discussed a few examples of renormalization of germs tangent to the identity, revealing interesting second-order resonance phenomena.

1.6 Study of Normal Forms via Mould Calculus. The framework of continuous prenormalization is the *mould formalism* developed by Écalle since 1970; such a formalism provides a direct and algorithmic way to capture the universal features of a normalization procedure. With J. Cresson, in [CR], we studied the set of local analytic resonant diffeomorphisms of \mathbb{C}^n using the theory of continuous prenormalization developed by Écalle ([ES], [EV]), looking for calculable prenormal forms, i.e., prenormal forms which can be obtained using a procedure which is algorithmic and implementable.

2. Discrete local holomorphic dynamics

I also dealt with dynamical problems relative to the characterization of the stable set, i.e., the set of points whose orbits stay in a neighbourhood of the fixed point, for non-linearizable germs.

2.1 Local dynamics of tangent to the identity germs. Jointly with M. Arizzi, in the survey [AriR] we revised the results of Écalle and Hakim (see [H]) on the dynamics of germs of biholomorphisms of (\mathbb{C}^n, O) tangent to the identity of order $k + 1 \geq 2$, providing detailed proofs not available otherwise. We also proved that if a tangent to the identity germ has an attracting domain where all orbits converge to the origin tangent to a non-degenerate characteristic direction, then all the directors must have non-negative real parts.

2.2 Dynamics of multi-resonant germs. In collaboration with F. Bracci and D. Zaitsev, in [BRZ], we studied the dynamics of germs of biholomorphisms of (\mathbb{C}^n, O) *multi-resonant with respect to the first r eigenvalues*, that is such that the resonances among the first $1 \leq r \leq n$ eigenvalues of the differential are generated over \mathbb{N} by a finite number of \mathbb{Q} -linearly independent multi-indices (and more resonances are allowed for other eigenvalues). We gave sharp conditions for the existence of basins of attraction where a Fatou coordinate can be defined, generalizing the results obtained in [BZ] for the 1-resonant case, and proving the existence of elliptic germs (i.e., with all the eigenvalues of the linear part lying on the unit circle but not roots of unity) having attracting basins with a parabolic-like dynamics. We proved the following result (see [BRZ] for definitions and proofs):

Theorem 6. (Bracci, Raissy, Zaitsev 2011 [BRZ]) *Let f be a germ of biholomorphism of (\mathbb{C}^n, O) , m -resonant with respect to the eigenvalues $\{\lambda_1, \dots, \lambda_r\}$ and of weighted order k_0 . Assume that $|\lambda_j| = 1$ for $j = 1, \dots, r$ and $|\lambda_j| < 1$ for $j = r + 1, \dots, n$. If F is parabolically attracting, then there exist (at least) k_0 disjoint basins of attraction having 0 at the boundary. Moreover, for each basin of attraction B there exists a holomorphic map $\psi : B \rightarrow \mathbb{C}$ such that $\psi \circ f(z) = \psi(z) + 1$ for all $z \in B$.*

Moreover, we obtained a generalization of the Leau-Fatou flower theorem, providing a complete description of the dynamics in a full neighborhood of the origin for 1-resonant elliptic parabolically attracting holomorphic germs in Poincaré-Dulac normal form.

Theorem 7. (Bracci, Raissy, Zaitsev 2011 [BRZ]) *Let f be an elliptic germ of biholomorphism of (\mathbb{C}^n, O) holomorphically normalizable, 1-resonant, of weighted order k_0 , and with generator*

of the resonances $P = (p_1, \dots, p_n) \in \mathbb{N}^n$, non-degenerate and parabolically attracting. Then, a full neighborhood of the origin is obtained as

$$\{O\} \cup \bigcup \{\text{attracting basins}\} \cup \bigcup \{\text{repelling basins}\} \cup \bigcup_{p_j \neq 0} M_j,$$

where, if $p_j \neq 0$, M_j is a germ of complex manifold tangent to $z_j = 0$ such that $f|_{M_j}$ is holomorphically linearizable.

In collaboration with L. Vivas, in [RV], we completed the study of the dynamics of 2-resonant germs of biholomorphisms of (\mathbb{C}^n, O) . We weakened the conditions found in [BRZ] to prove the existence of attracting domains in this case. We also proved the non-necessity of the attracting hypothesis for the non-degenerate characteristic direction of the parabolic shadow.

3. Discrete global dynamics in convex domains

With M. Abate, in [AR2] we studied backward orbits for holomorphic self-maps of bounded strongly convex C^2 domains in \mathbb{C}^d . We proved that a backward orbit with bounded Kobayashi step for a hyperbolic, parabolic or strongly elliptic holomorphic self-map of a bounded strongly convex C^2 domain in \mathbb{C}^d necessarily converges to a repelling or parabolic boundary fixed point, generalizing previous results obtained by Bracci [Br] and Poggi-Corradini [PC] in the unit disk and by Ostapyuk [O] in the unit ball of \mathbb{C}^d . We also proved the existence of backward orbits with bounded Kobayashi step, showing that given an isolated repelling boundary point for a strongly elliptic, hyperbolic or parabolic, self-map then there always exists a backward orbit with bounded Kobayashi step converging to it.

Again in collaboration with M. Abate, in [AR3] we gave a short proof of Wolff-Denjoy theorem for (not necessarily smooth) strictly convex domains without regularity assumptions on the boundary. With similar techniques we are also able to prove a Wolff-Denjoy theorem for weakly convex domains, again without any smoothness assumption on the boundary.

In [AR4], we proved a Julia-Wolff-Carathéodory theorem on angular derivatives of infinitesimal generators of one-parameter semigroups of holomorphic self-maps of the unit ball $B^n \subset \mathbb{C}^n$, starting from, and generalizing, results recently obtained by Bracci and Shoikhet.

4. Geometric function theory in several complex variables

In collaboration with M. Abate and A. Saracco, in [ARS], we investigated mapping properties of Toeplitz operators associated to a finite positive Borel measure on a bounded strongly pseudoconvex domain $D \subset \subset \mathbb{C}^n$. In particular, we gave sharp conditions on the measure ensuring that the associated Toeplitz operator maps the Bergman space $A^p(D)$ into $A^r(D)$ with $r > p$, generalizing and making more precise the results by Čučković and McNeal [CMc]. To do so, we gave a geometric characterization of Carleson measures and of vanishing Carleson measures of weighted Bergman spaces in terms of the intrinsic Kobayashi geometry of the domain, generalizing to this setting results obtained by Kaptanoğlu [K] for the unit ball.

5. Discrete global holomorphic dynamics.

The Fatou set of a holomorphic endomorphism f of a complex manifold is the largest open set where the family iterates of the map form a normal family, and a Fatou component is a connected component of the Fatou set. In dimension one, Sullivan's Non Wandering Domain Theorem asserts that every Fatou component of a rational map is eventually periodic. Several classes of counter-examples have been found and studied for entire transcendental function in dimension one, but the question of the existence wandering Fatou components for polynomial endomorphisms in higher dimension remained open. Jointly with M. Astorg, X. Buff, R. Dujardin and H. Peters we showed in [ABDPR], using techniques of parabolic bifurcation, that

there exist polynomial endomorphisms of \mathbb{C}^2 with a wandering Fatou component. These maps are polynomial skew-products, and can be chosen to extend to holomorphic endomorphisms of the complex projective space.

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