# CURRICULUM VITAE

## PIERRE BERGER

CNRS-IMJ-PRG Sorbonne University Pierre.Berger ((at)) imj-prg.fr webusers.imj-prg.fr/~pierre.berger/ +33 06 52 41 50 60

| Education and awards |   |  |
|----------------------|---|--|
| 2019                 | Principal investigator of ERC project Emergence of Wild Differentiable Dynamical Systems.                                   |  |
| 2018                 | Speaker at 19th International Congress on Mathematical Physics (Montréal).  |  |
| 2017                 | Conference at mathematica a la Residencia de Estudiantes (Madrid).  |  |
| 2017                 | Habilitation à diriger des recherches (University Paris XIII): 'Chaotic Properties of differentiable dynamical systems'.    |  |
| 2016                 | Speaker at 5ve Congreso Latinoamericano de Matemáticos.   |  |
| 2016                 | Speaker at 1st Congress of the French Mathematical Society.   |  |
| 2016                 | Author of the exhibition 'view in spaces' 7th European Congress of Mathematics (Berlin).                                    |  |
| 2015                 | Invited as a young scientific leader for the Simons Foundation Award at Banach Center (Warsaw).                             |  |
| 2008                 | IPDE laureat (IHES, CRM, Banach Center).  |  |
| 2004–2007            | PhD at Univ. Paris XI under the direction of J-C. Yoccoz: "Persistence of stratifications of normally expanded laminations" |  |
| 2001-2003            | Master degree with first class honors ENS-Univ. Paris XI.   |  |
| 2001-2005            | Student at Ecole Normale Supérieure (Paris).  |  |

### Positions and long term Visits

| Positions and long term Visits |  |  |
|--------------------------------|--|--|
| 09/2019                        | Directeur de recherche CNRS (DR2) at Institut Mathématique de Jussieu (Sorbonne Université). |  |
| 05/2019                        | Invited by D. Turaev (Imperial College, London).   |  |
| 12/2018                        | Invited by J. Bochi (PUC, Santiago).   |  |
| 1/2018                         | Invited by J. Bochi (PUC, Santiago).   |  |
| 10/2017 - 11/2017              | Invited by M. Lyubich (SUNY-SB) and E. Pujals (CUNY).  |  |
| 1/2016- $2/2016$               | Invited by E. Pujals at IMPA (Brazil).   |  |
| 11/2015-12/2015                | Invited as a young scientific leader for the Simons Foundation Award at IPAN (Warsaw).       |  |
| 10/2015- $11/2015$             | Invited to SUNY SB by M. Lyubich, (New York).  |  |
| 1/2015- $02/2015$              | Invited to IMPA by E. Pujals and L. Velho, IMPA (Brazil).                                    |  |
| 12/2013-2/2014                 | Visit at IMPA as part of the RFBM and the Palis Balzan project.                              |  |
| 11/2013-···                    | CNRS Reseacher (CR1) at LAGA, Paris 13 (Villetaneuse).                                       |  |
| 1/2013- $2/2013$               | Visit at IMPA, RFBM and the Palis Balzan project.  |  |
| 11/2012- $11/2013$             | CNRS Reseacher (CR2) at LAGA Paris 13 (Villetaneuse).  |  |
| 11/2010 - 10/2012              | CNRS Reseacher (CR2) at IMPA (Rio de Janeiro).   |  |
| 06/2010                        | Invited to "Dynamics and PDE's" program (Mittag Leffler).                                    |  |
| 02/2010                        | Invited by M. Viana for research collaborations at IMPA.                                     |  |
| 10/2009- $10/2010$             | CNRS Reseacher (CR2) at Paris 13 (Villetaneuse).   |  |
| 10/2009                        | Invited by M. Lyubich for research collaborations (New York).                                |  |
| 08/2009-1/2010                 | Invited at IHES (Bures-sur-Yvette).  |  |
| 07/2009- $1/2010$              | Post doc at MFO (Oberwolfach).   |  |
| 04/2009                        | Invited by A. Rovella (Montevideo).  |  |
| 03/2008-06/2009                | Post doc at IHES (Paris).  |  |
| 01/2009                        | Invited by M. Benedick for research collaborations (Stockholm).                              |  |
| 09/2008-02/2009                | Post doc at CRM (Barcelona).   |  |
| 09/2007-08/2008                | Post doc at University State of New York (Stony Brook).                                      |  |
| 09/2004- $06/2007$             | Thesis under the direction of J-C. Yoccoz.   |  |
| 01/2004-07/2004                | Internship at IMPA (Rio de Janeiro) under the direction of M. Viana.                         |  |
| 06/2003- $12/2003$             | Post-graduate internship under the direction of J-C. Yoccoz.                                 |  |

| RESEARCH MINI-COURSES AT INTERNATIONAL CONFERENCES AND |
|--|
| SEMESTERS  |

| 11/2021 | Mini-Course on bifurcation at CIMPA school, at COMSATS university, Lahore campus, (Pakistan).                      |
|---------|--|
| 10/2020 | Mini-Course on Renormalization nearby homoclinic tangencies, at SUNY SB (USA).                                     |
| 06/2017 | Mini-Course on Parablenders, at the conference Beyond Uniform hyperbolicity, at BYU (USA).                         |
| 05/2017 | Mini-Course on Paradynamics and Emergence dynamical semester's IPAN (Tehran).                                      |
| 03/2017 | Mini-Course on NUH Hénon maps and Emergence, Kanto's dynamics days (Tokyo Univ.).                                  |
| 09/2016 | Mini-Course on Emergence and paradynamics, Escola Brasileira de Sistemas dinamicos (Campinas).                     |
| 11/2015 | Mini-Course on Differentiable dynamics near and far from homoclinic bifurcations Simon's Semester (INPAM, Warsaw). |
| 10/2015 | Lectures on Newhouse phenomena and its generalization, SUNY SB (New York).   |
| 4/2012  | Mini-course on Non-Uniformly Hyperbolic attractor for surface endomorphisms, Summer school, IMPA (Rio de Janeiro). |
| 1/2010  | Mini-course about Non-Uniformly Hyperbolic attractor for surface endomorphisms, NUH days at PUC (Santiago).        |
| 10/2009 | Lectures-on Non-Uniformly Hyperbolic attractor for surface endomorphisms, SUNY SB (New York).                      |
| 04/2009 | $\label{eq:mini-course} \mbox{Mini-course on structural stability of Endomorphisms (Montevideo)}.$                 |

### Conferences and seminars given

| 4/2023 | Speaker at "Dynamics of Hénon Maps: Real, Complex and Beyond" (online to Banff, Canada). |
|--------|--|
| 1/2023 | Seminar given at "Séminaire de système dynamique", (IMJ-PRG, Paris, France).             |
| 1/2023 | Seminar given at "Séminaire de géométrie et topologie", (IMJ-PRG, Paris, France).        |
| 9/2022 | Speaker at "Duarte 60 conference" (Rio de Janeiro, Brazil).                              |

| 8/2022  | Speaker at Simon Symposium on Algebraic, Complex and Arithmetic Dynamics (Germany).                           |
|---------|---|
| 3/2022  | Speaker at Workshop at Banff, on dynamics and complexity (Canada).  |
| 3/2022  | Colloquium given at Princeton University, (New Jersey, USA).  |
| 2/2022  | Speaker at "New trend in Lyapunov exponent", (Lisboa, Portugal).  |
| 9/2021  | Speaker at "2nd workshop on wild dynamics", (Azores, Portugal).   |
| 7/2021  | Speaker at "Dynamische Systeme", (MFO, Germany).  |
| 6/2021  | Talk at Seminar on Dynamical Systems at IMPAN , online, (Varsaw, Poland).                                     |
| 6/2021  | Talk at Resistencia matematica, online, (Rio de Janeiro, Brazil).   |
| 6/2021  | Speaker at Uniformly and non-uniformly hyperbolic dynamics, (CIRM, France).                                   |
| 3/2021  | Speaker at Virtual Workshop Many faces of renormalization, at Simon Center, (New York USA).                   |
| 1/2021  | Colloquium given at IMJ-PRG (Paris, France).  |
| 12/2020 | Seminar at Dyna-Proba, (Amiens, France).  |
| 3/2020  | Colloquium given at University of Amsterdam, (Amsterdam, Netherland).   |
| 2/2020  | Speaker at the conference "APLIMAT 2020" (Slovenia).  |
| 12/2019 | Speaker at the conference "America XII" (CIMAT, Mexico).  |
| 12/2019 | Speaker at the conference 'Formalisme thermodynamique : sys. dyn., prop. stat. et leurs app." (CIRM, France). |
| 8/2019  | Speaker at the conference in memory of A. Katok (Bedlewo, Poland).  |
| 7/2019  | Speaker at "Dynamische Systeme" (MFO, Germany).   |
| 6/2019  | Speaker at the conference "Analytic Low-Dimensional Dynamics", (Field Institute, Canada).                     |
| 5/2019  | Speaker at the conference "Beyond uniform hyperbolicty" (CIRM, France).                                       |
| 4/2019  | Talk at Warwick dynamical systems seminar (UK).   |
| 2/2019  | Speaker at "Dynamical Systems : from geometry to mechanics" (Roma, Italia).                                   |

| 1/2019  | Speaker at "Topological methods in dynamics and related to-pics" (Nizhny Novgorod, Russia).                                 |
|---------|---|
| 12/2018 | Speaker at Conference in Dynamics ValparaÃso (Chile).   |
| 7/2018  | Speaker at XIXth International Congress on Mathematical Physics (Canada).   |
| 6/2018  | Speaker at International conference on dynamical systems, celebrating the 50's birthday of the Berkley conference, (China). |
| 6/2018  | Speaker at the Workshop at ICMS Edinburgh (UK).   |
| 6/2018  | Speaker at the conference DymtoComp Bedlewo (Poland).   |
| 5/2018  | Speaker at the school of beKAM at Carthages (France).   |
| 5/2018  | Speaker at the school of ICTP at Teheran (Iran).  |
| 4/2018  | Speaker at a conference on surface and dynamics at Bedlewo (Poland).  |
| 3/2018  | Speaker at a conference on PDE and Ergodic theory at Hiroshima (Japan).   |
| 12/2017 | Permanent Exhibition at UNAM museum (Mexico).   |
| 12/2017 | Speaker at the seminar of Dynamical Systems of IMJ (Paris).   |
| 12/2017 | Conference for la residencia de estudiantes (Madrid).   |
| 12/2017 | Speaker at ICMAT (Madrid).  |
| 11/2017 | Speaker at the seminar of Dynamical Systems, SUNY, (NY).  |
| 11/2017 | Conference at Colloquium of CUNY, (NY).   |
| 06/2017 | ${\it Talk\ at\ the\ seminar\ of\ Dynamical\ Systems,\ Strasbourg,\ (France)}.$   |
| 05/2017 | Tribute to J.C. Yoccoz given with J. Rivera-Letelier, Coll $\tilde{\mathbf{A}}$ "ge de France.                              |
| 05/2017 | Talk at the seminar of Dynamical Systems, Paris VI.   |
| 04/2017 | Talk at the seminar of Dynamical Systems, ETH Zurich.   |
| 01/2017 | Talk at the seminar of Dynamical Systems, Imperial college.   |
| 01/2017 | Talk at the seminar of Dynamical Systems, Paris VII.  |
| 12/2016 | Speaker at the congress 'Anosov 80', Moscow (Russian Fed).  |
| 12/2016 | Talk at the seminar of Dynamical Systems, Paris XIII.   |
| 07/2016 | Exhibition for 'European Cong. of Math.', Berlin.   |
| 07/2016 | Speaker at 'Cong. Latino Americano de Matematica', (Colombia).  |

| 06/2016 | Speaker at '1er Congr $\tilde{\mathbf{A}}$ 's de la Société math. de France', Tours (France). |
|---------|---|
| 03/2016 | Talk at the seminar of dynamical systems, Jussieu, (France).                                  |
| 02/2016 | Talk at the seminar of dynamical systems, IMPA, (Brazil).                                     |
| 10/2015 | Speaker at the 'journées dynamiques', Jussieu, (France).                                      |
| 09/2015 | Speaker at the congress of FARF III, Porqueroles, (France).                                   |
| 09/2015 | Speaker at the congress of Beyong uniform hyperbolicity, Olmue, (Chile).                      |
| 07/2015 | Speaker at the congress of dynamical systems, MFO, (Germany).                                 |
| 05/2015 | Talk at the seminar of dynamical systems, Jussieu, (France).                                  |
| 04/2015 | Talk at the seminar of dynamical systems, Avignon, (France).                                  |
| 02/2015 | Talk at the seminar of dynamical systems, IMPA, (Brasil).                                     |
| 02/2015 | Speaker at Workshop Top. & Dinâmica 2015, UFF, (Brasil).                                      |
| 01/2015 | Talk at the seminar of dynamical systems, IMPA, (Brasil).                                     |
| 11/2014 | Talk at the seminar of dynamical systems, Paris 13, (France).                                 |
| 06/2014 | Speaker at 'Hamiltonian Perturbation Theory' (SNP, Pisa).                                     |
| 01/2014 | Talk at UMI seminar IMPA (Rio de Janeiro).  |
| 09/2013 | Talk at 'GT théorie ergodique' (Orsay).   |
| 06/2013 | Speaker at "2nd Palis-Balzan Symp. on Dyn. Syst." (IHP, Paris).                               |
| 06/2013 | Speaker at "Dyn. Beyond Unif. Hyp." (Bedlewo).  |
| 04/2013 | Talk at the seminar of dynamical systems, IMJ (Paris).  |
| 06/2012 | Speaker at "First Palis-Balzan Symp. on Dyn. Syst." IMPA, (R.J.).                             |
| 06/2012 | Speaker at "Workshop in Dynamical Systems at ICTP" (Trieste).                                 |
| 10/2011 | Speaker at "Workshop on Dynamical Systems 2011" (Salvador de Bahia).                          |
| 10/2011 | Talk at universidade da ingeneria (Montevideo).   |
| 06/2011 | Speaker at "Dynamics Beyond Uniform Hyperbolicity" (CIRM).                                    |
| 4/2011  | Lecture on Hirsch-Pugh-Shub Theorem, EDAI (Rio de Janeiro, Brazil).                           |
| 04/2010 | mini course at IMPA (Rio de Janeiro).   |
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| 04/2010 | Talk in "EDAI" at UFRJ (Rio de Janeiro).                             |
|---------|--|
| 06/2010 | Speaker in "Dynamics and PDE's" program (Mittag Leffler, Stockholm). |
| 04/2010 | Talk at the seminar of dynamical systems UMPA (Lyon).                |
| 03/2010 | Talk at the seminar of dynamical systems (Bordeaux).                 |
| 03/2010 | Talk at the seminar of dynamical systems, Paris XIII (Paris).        |
| 02/2010 | Speaker at Int. Conf. On Dyn. Systems 2010, (Buzios).                |
| 10/2009 | Talk at the seminar of dynamical systems, SUNY SB (NY).              |
| 07/2009 | Speaker at ISAAC congress, Imperial college (London).                |
| 07/2009 | Speaker at Dynamische Systeme congress, MFO (Oberwolfach).           |
| 05/2009 | Talk at the seminar of dynamical systems, Paris XIII (Paris).        |
| 04/2009 | Talk at the seminar of dynamical systems, (Montevideo).              |
| 03/2009 | Talk at the seminar of dynamical systems, Paris XI (Paris).          |
| 01/2009 | Talk at the seminar of dynamical systems, KTH (Stockholm).           |
| 12/2008 | Talk at the seminar of dynamical systems, IMJ (Paris).               |
| 10/2008 | Talk at CRM (Barcelona).   |
| 07/2008 | Speaker at Conference on Dynamical Systems, ICTP (Trieste).          |
| 05/2008 | Talk at the Dynamical Systems Seminar, Northwestern Un. (Chicago).   |
| 03/2008 | Talk at the seminar of dynamical systems, (University of Toronto).   |
| 11/2007 | Talk at the seminar of dynamical systems, (Cornell University).      |
| 09/2007 | Talk at the seminar of dynamical systems, IMS (Stony Brook).         |
| 07/2007 | Speaker at the 1st French-Spanish mathematical congress, (Zaragoza). |
| 06/2007 | Talk at the seminar of dyn. syst. and arith., IML (Marseille).       |
| 06/2007 | Talk at the seminar of alg., dyn. syst. and topo., CMI (Marseille).  |
| 05/2007 | Talk at the seminar of dynamical systems, IMJ (Paris).               |
| 04/2007 | Two talks at the GT Ergodic theory, university Paris Sud (Orsay).    |
| 03/2007 | Talk at the graduate student seminar, university Paris Sud (Orsay).  |

| PROJECTS |  |
|----------|--|
| 3/2023   | Co-organizer with Y. Ishii of the French - Japonese Workshop on dynamics of real and complex dynamics of the Hénon maps (Kyoto, Japan).                      |
| 2022     | Co-organizer with Bernhard Reinke of the weekly workshop "dynamiques sauvages", Sorbonne University.   |
| 09/2021  | Co-organizer with Pedro Duarte of the second workshop on Wild Dynamics (Azores, Portugal).   |
| 02/2021  | Organizer of "Groupe de travail sur les dynamiques sauvages", CIRM (Marseille, France).  |
| 09/2020  | Co-organizer with Philip Boalch of "Journée de rentrée de l'IMJ", (Sorbonne Université, France).   |
| 09/2020  | Co-organizer with Pierre-Antoine Guiheneuf of first workshop on Wild Dynamics (Banyuls, France).   |
| 12/2019  | Co-organizer with J. Fejoz and Y. Ishii of the French - Japonese Workshop on dynamics of real and complex dynamics of the Hénon maps (Observatoire, Paris).  |
| 9/2019   | Principal investigator of ERC project Emergence of Wild Differentiable Dynamical Systems.  |
| 7/2019   | Organizer of the workshop Esthetopies (CIRM, France).  |
| 3/2019   | Co-organizer with H. Takahashi of the French - Japonese Workshop on dynamics of the Hénon maps, French support by INSMI.                                     |
| 1-3/2019 | Organizer of the exhibition Esthetopies at Drancy support by Animath, Fondation Blaise Pascal, FSMP, LAGA, DR1.  |
| 05/2017  | Co-organizer with S. Crovisier and C. Matheus for the Conference in Memory of J C. Yoccoz, supported by ERC, LMO, FMJH, LMO, LAGA, FSMP, Collà ge-de-France. |
| 2017     | Coordinator of the research and exhibition project 'Esthétopies', supported by fond. IHP, Région IDF, Fond. Blaise Pascal.                                   |
| 07/2016  | Co-organizer with Andreas Matt of the exhibitions of the main building of the 7th European Congress of Mathematics. Supported by FSMP, INSMI, CNRS, LAGA.    |
| 01/2015  | Main organizer of the project BRNUH of idex UPSC, coorginazer H. Eliasson (Université P7) and E. Pujals (IMPA).  |

| 01/2015 | Co-Organizer with L. Velho of the permanent exhibit 'Um Olhar nos Espaços de Dimensão 3' at MAST, Rio de Janeiro, supported by FAPERJ, Visgraf, IMPA, MAST. |
|---------|---|
| 03/2013 | Coordinator of the Exhibition project 'Regards dans les espaces de dimension 3' supported by Région IdF, Cap'Math, FSMP, Université Paris 13, LAGA.         |

Member of the program of the Louis D. Price of M. Viana (2016-2018). Member of the Program Balzan Price of J. Palis (2010-2015). Member of the ANR Project 'Au dela de l'hyperbolicité uniforme' BLAN08-2-313375, (2009-2012).

| MENTORING     |  |
|---------------|--|
| 2/2023-6/2023 | Internship adviser of Zahra Reshadat, Phd student at IPN Tehran.   |
| 9/2022        | Phd Adviser of Odylo Costa.  |
| 9/2021-2023   | Post-doc Adviser of Bernhard Reinke.   |
| 9/2021-2022   | Tutor of Pietro Piccione for PGSM (now PhD student with Sébastien Boucksom, CNRS-Sorbonne University).         |
| 9/2020        | Master-Phd Adviser of Mathieu Helfter.   |
| 9/2019-2021   | Tutor of Thomas Guidoni for PGSM (now PhD student with Penka Georgiova, Sorbonne University).                  |
| 9/2018-2021   | Post-doc Adviser of Sebastien Biebler (now assistant professor at Paris University).                           |
| 11/2016-2020  | PhD adviser of Amin Talebi with M. Nassiri, Paris 13-Sharif university, Teheran (now Post-Doc at IPN, Tehran). |
| 2012          | Joint works with P. D. Carrasco, post-doc at IMPA (now assistant professor at UFMG, Brazil).                   |
| 2011          | Joint works with A. Bounemoura, post-doc of IMPA (now permanent researcher at CNRS).                           |
| 2005–2007     | Mathematical adviser at the workshop 'Math en Jean's', high school Jean Jaures (Montreuil, France).            |

Member of the Jury of the PhD Thesis of: R. Potrie (Advised by S. Crovisier) in 2012, S. Biebler (Advised by R. Dujardin) in 2018, T. Dutilleu (Advised by F. Beguin) in 2019, D. Obata (Advised by S. Crovisier) in 2019. Member of the Jury of the habilitation à diriger des recherches of J. Taflin in 2019.

#### ACADEMIC RESPONSIBILITIES

| 9/2019      | Principal investigator of ERC project Emergence of Wild Differentiable Dynamical Systems.   |
|-------------|---|
| 2013 - 2019 | Co-organizor of the seminar of dynamical systems of Paris 13 university with L. Marchese et N. Desaxcé.                           |
| 2017        | Editor with S. Crovisier, C. Matheus and P. Le Calvez of the volume in 'Memory of J.C. Yoccoz', Gazette des mathematiciens (SMF). |
| 2014        | Committee Member of the competition MCF 061, Paris 7 university.  |
| 2013-now    | Expert, committee member of Paris 13 university.  |
| 2013-2015   | Committee Member of the competition MCF Paris 13 university.  |

#### **PUBLICATIONS**

#### Memoirs

- P. Berger, Persistance des stratifications de laminations normallemement dilatées, 6/2007, 151 p., *PhD Thesis University Paris Sud*.
- P. Berger, Comportements Chaotiques des systèmes dynamiques differentiables, 2017, 110 p., HDR hold on 6/2017.

#### Articles and books in scientific journals

- 1. P. Berger, Persistence of stratifications of normally expanded laminations, C. R. Math. Acad. Sci. Paris, vol. 346 n 13-14, (2008), 6 p.
- 2. —, Persistence of laminations, Bull Braz Math Soc, 41(2), (2010), 259-319.
- 3. —, Persistence of stratifications of normally expanded laminations, Mémoire de la société mathématique de France, 134, (2013), 130 p.
- 4. —, Persistance des sous-variétés à bord et à coins normalement dilatées, Ann. Inst. Fourier, Grenoble 61, 1 (2011) 79-104, 23 p.
- 5. —, Structural stability of attractor-repellor endomorphisms with singularities, *Ergodic Theory and Dynamical Systems*, (2012), no. 1, 1-33.

- 6. P. Berger -A. Rovella, On the inverse limit of endomorphisms, Ann. Inst. H. Poincaré Anal. Non Linéaire 30 (2013), no. 3, 463-475.
- P. Berger A. Bounemoura, A geometrical proof of the persistence of normally hyperbolic submanifolds, *Dynamical Systems*, Volume 28, Issue 4, (2013) 17p.
- 8. P. Berger P. Carrasco, Non uniformly hyperbolic attractors derived from the standard map, *Communication in Mathematical Physics*, July (2014) v. 329 1, pp 239-262.
- 9. P. Berger -A. Laier-L. Velho, An image-space algorithm for immersive views, *The Visual Computer*, 1-12, January 18, (2014). 12p.
- 10. P. Berger -J. de Simoi, Hausdorff dimension of Newhouse phenomena, *Ann. Henri Poincaré* 17 (2016), no. 1, 227-249.
- 11. P. Berger -C. G. Moreira, Nested Cantor set, *Math. Zeitschrift*, 283 (2016), no. 1-2, p. 419 435.
- 12. P. Berger A. Kocsard, Structural stability of the inverse limit of endomorphisms, Annales of Henri Poincaré (C), (2016), 34p.
- 13. M.C. Arnaud and P. Berger, The non-hyperbolicity of irrational invariant curves for twist maps and all that follows,  $Revista\ Matem \tilde{A}_itica\ Iberoamericana\ n\hat{A}^\circ$  32.4 (2016) pp. 1295–1310
- 14. P. Berger R. Dujardin, On stability and hyperbolicity for polynomial automorphisms of  $C^2$ , Ann. Scient. Ec. Norm. Sup., 4e, 50 , (2017) pp. 447–475
- 15. P. Berger, Generic family with robustly infinitely many sinks, *Inventiones Matematicae*, (2016) 205: 121. pp. 1–41
- 16. —, Emergence and non-typicality of the finiteness of the attractors in many topologies, *Proceeding of the Steklov inst.* (2017) Vol. 297, pp. 1–27.
- 17. —, Emergence and non-typicality of the finiteness of the attractors in many topologies, *Trudy Matematicheskogo Instituta imeni V.A. Steklova* (2017), Vol. 297, pp. 7–37.

- 18. —, Persistent bundle over a two dimensional compact set, accepted to Revista Colombiana de Matemáticas, (2018), 25p.
- 19. —, Properties of the maximal entropy measure and geometry of Hénon attractors, *J. Eur. Math. Soc.*, 21 (2019), no. 8, p. 2233–2299.
- 20. P. Berger J-C. Yoccoz, Strong regularity, Astérisque, 410 (2019), 14p.
- 21. P. Berger, Abundance of non-uniformly hyperbolic Hénon-like endomorphisms, *Astérisque*, Vol. 410 (2019) 123 p.
- 22. P. Berger and D. Turaev, On Herman's positive entropy conjecture, Advances in Mathematics, Vol. 349, (2019),p. 1234-1288
- 23. P. Berger, Complexities of differentiable dynamical systems, *Journal of Mathematical Physics*, Vol. 61 n°3, (2020).
- 24. P. Berger and J. Bochi, On Emergence and Complexity of Ergodic Decompositions, *Advances in Mathematics*, Vol. 390, (2021) 52 p.
- 25. P. Berger, Generic family displaying robustly a fast growth of the number of periodic points, *Acta Mathematica*, 227 (2021) no. 2 p. 205-262.
- 26. P. Berger, S. Crovisier and E. Pujals, Germ-typicality of the coexistence of infinitely many sinks, *Advances in Mathematics*, vol. 407, (2022), 42 p.
- 27. P. Berger and S. Biebler, Emergence of wandering stable components, *Journal of American Math. Soc.* vol. 36, no 2, (2023), p. 397-482.
- 28. P. Berger, Coexistence of chaotic and elliptic behaviors among analytic, symplectic diffeomorphisms of any surface, *Journal de l'École polytechnique*, Tome 10 (2023), pp. 525-547.
- 29. P. Berger, A. Florio and D. Peralta-Salas, Steady Euler Flows on  $\mathbb{R}^3$  with Wild and Universal Dynamics. *Communications in Math. Physics*, (2023), p. 1-47.
- 30. P. Berger and D. Turaev, Generators of groups of Hamitonian maps, to appear in Israel Journal of Math., 11p.

#### **Pre-publications**

- 1. P. Berger, Normal forms and Misiurewicz renormalization for dissipative surface endomorphisms, arxiv, not submitted, (2014), 27 p.
- 2. —, Zoology in the Hénon family: twin babies and Milnor's swallows, Arxiv (2018), 42 p.
- 3. P Berger, N. Gourmelon and M. Helfter, Every diffeomorphism is a total renormalization of a close to identity map, *ArXiv*, (2022), p.28.
- 4. P. Berger and B. Reinke, Parametric linearization of skew products, ArXiv, (2022), P.24.
- 5. P. Berger, Analytic pseudo-rotations, ArXiv, (2022), P. 34.

# Conference proceedings, surveys and general articles for mathematicians

- 1. P. Berger, Abundance of one-dimensional uniformly hyperbolic attractors for surface endomorphisms, proceeding MFO, (2009) 3 p.
- 2. —, Generic family with robustly infinitely many sinks, proceeding MFO, (2015) 3 p.
- 3. P. Berger, S. Crovisier, E. Pujals Iterated Functions Systems, Blenders and Parablenders, *Proc. FARF III*, (2016) 13p.
- 4. P. Berger, Ésthetopies, Gazette de la SMF, oct. (2017) 6p.
- 5. —, Un élève è l'École d'un Maître, Gazette de la SMF en hommage à Jean-Christophe Yoccoz, (2018) 6p.
- 6. —, Lectures on structural stability, Simon's Semester volume of Banach Center Publications, (2018) 28 p.
- 7. P. Berger- S. Biebler, Emergence of wandering stable open components, proceeding MFO, (2019) 3 p.
- 8. P. Berger with S. Crovisier and E. Pujals, Germ-typicality of Newhouse phenomenon, proceeding MFO, (2021) 3 p.

#### Participation to large audience videos and articles

- Author of the article, 'La théorie du chaos justifie-t-elle un usage constant des statistiques ?' Gazette de l'institut Galilée, (2012).
- Interviewed, INSMI letter, January 28 (2013).
- Co-author of an exhibition filmed by Alice Jacquet, 'Regards dans les espaces de dimension 3', production FSMP, March (2013).
- Co-author of an exhibition reported by Cesar Baima, 'Os espaços do Universo em três dimensões', quotidien Brésilien *O Globo*, January 27 (2015).
- Interviewed on Radio Nacional Rio de Janeiro, Feb. (2015).
- Co-author of the exhibition reported by Valentina Leite, 'Matemática em três dimensões', Brazilian scientific magazine *Cienca Hoje*, March (2015).
- Author of the exhibition at 7ECM reported by *INSMI letter*, July 21 (2016).
- Mathematical work subject of 'Un chaos bien plus sauvages qu'escompté', *INSMI letter*, Dec. 3 (2016).
- Interviewed par Francois Beguin, *Images des Mathématiques*, (2017). Interview translated in Italian for the electronic journal *Maddmath*.
- Article reported by Anne Debroise, 'Le chaos est encore plus chaotique', *Science & Vie*, Feb. (2017).
- Author of an exhibition reported by Loïc Mangin, 'La 3D comme vous ne l'avez jamais vue,' *Pour la Science*, June (2017).
- Subject of the video by Pierre de Parscau , 'Les noces des mathématiques et des arts', *Journal du CNRS*, July (2017).
- Author of an exhibition filmed by Jean-Baptiste Fave, documentary 'Esthétopies', production IHP, July (2017).
- Author of the article 'Arte multimedia para expresar lo inenarrable de las matemáticas', apated by Ágata T. Timón for *El País*, March 3 (2018).

#### EXHIBITIONS

The website on my exhibitions are:

| www.espaces-imaginaires.fr | and | http://esthetopies.math.cnrs.fr |
|----------------------------|-----|---------------------------------|
|                            |     |                                 |

| 1-3/2019 | Authors of the exhibition Esthetopies at Chateau de Ladoucette, |
|----------|---|
|          | Drancy, with the participation of P.Y. Fave, S. Krakowski,      |
|          | V. Martial, J. Royo-Letelier.                                   |

 $11/2017 - \cdots$ Permanent exhibition at museum da sciencas UNAM (Mexico), with the sound part in collaboration with J. Royo-Letelier et S. Krakowski.

Avril 2017 Interactive exhibition online: http://esthetopies.math. cnrs.fr

March-July 2017 Author of the exhibition 'Esthétopies' at IHP, with the participation of P.Y. Fave, S. Krakowski, V. Martial, J. Royo-Letelier.

July 2016 Author of the exhibition 'Views in 3-manifolds', with the participation of P.Y. Fave, S. Krakowski, A. Laier, J. Royo-Letelier and L. Velho for the 7th European Congress in Mathematics, Berlin.

2015 Author of the exhibition 'Espaces Imaginaires' for events at Centquatre-Paris, University Paris 13, the CIJM Place St. Sulpice and in a corridor of Montparnasse subway corridor at Paris.

> Translation of the exhibition 'Regard dans les espaces de dimension 3' into Portuguese (supervised by Luiz Velho) and exhibited permanently to the science museum (MAST) of Rio de Janeiro since January 2015. Exhibition showed at São Paulo during the Lacanian congress ENAPOL in 2015.

2013-2015 Co-author with P. Y. Fave of the exhibition 'Regards dans les espaces de dimension 3' showed at University P13, 'Journées CNRS Jeunes', Festival 'Savante Banlieue', at 'Nuit des Sciences à l'Ecole Supérieure Paris', at 'Clavim' Issy-les-Moulineaux. The exhibition contains collaborations with A. Laeir, S. Krakowski et L. Velho.

#### SKILLS, INTERESTS AND EXPERIENCE

- Fluent French, Brazilian Portuguese and English, adequate Spanish and some Italian.
- Sculpture and drawing at the Ecole Nationale Supérieure des Arts Décoratifs (Paris).

Jan. 2015- · · ·

• Federal Sailing instructor (1st and 2nd degree) for coastal and offshore cruising (les Glénans).