

CURRICULUM VITAE

PIERRE BERGER

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EDUCATION AND AWARDS

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| 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. |
| 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

- 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

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	Mini-course on structural stability of Endomorphisms (Montevideo).

CONFERENCES AND SEMINARS GIVEN

7/2019	Speaker at Dynamische Systeme MFO (Germany).
12/2018	Speaker at Conference in Dynamics Valparaíso (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 Talk at the seminar of Dynamical Systems, Strasbourg, (France).

05/2017 Tribute to J.C. Yoccoz given with J. Rivera-Letelier, Collège 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', (Columbia).

06/2016 Speaker at '1er Congrès 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, Porquerolles, (France).

09/2015 Speaker at the congress of Beyond 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).

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

12/2018	Co-organizer with H. Takahashi of the French - Japanese Workshop on dynamics of the Hénon maps, French support by INSMI.
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, Collège-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 index UPSC, co-organizer 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 (since 2016). 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

- 11/2016- ... PhD adviser of Amin Talebi with M. Nassiri, Paris 13 and Sharif university, Teheran (Iran).
- 6/2015 Adviser for a master 2 dissertation of Paris Graduate School of Mathematics.
- 2012 Joint works with P. D. Carrasco, post-doc at IMPA (Rio de Janeiro).
- 2011 Joint works with A. Bounemoura, post-doc of IMPA (Rio de Janeiro).
- 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. Member of the Jury of the PhD Thesis of S. Biebler (Advised by R. Dujardin) in 2018.

ACADEMIC RESPONSIBILITIES

- 2013 - now Co-organizer 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’, <i>Gazette des mathématiciens</i> (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, Persistence des stratifications de laminations normalement dilatées, 6/2007, 151 p., *PhD Thesis University Paris Sud*.
- P. Berger, Comportements Chaotiques des systèmes dynamiques différentiables, 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. —, Persistence 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.
7. 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 Matemática Iberoamericana* n° 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) p447–475 p.
15. P. Berger, Generic family with robustly infinitely many sinks, *Inventiones Mathematicae*, (2016) 205: 121. 1–41p.
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, *to appear at Journal of the European Mathematical Society*, 67 p.

Pre-publications

1. P. Berger - J-C. Yoccoz, Strong regularity, (2014), 14p.
2. P. Berger, Abundance of non-uniformly hyperbolic Hénon-like endomorphisms, *arxiv*, 119 p.
3. —, Normal forms and Misiurewicz renormalization for dissipative surface endomorphisms, *arxiv, not submitted*, (2014), 27 p.
4. —, Generic family displaying robustly a fast growth of the number of periodic points, *Arxiv* (2017) 38 p.
5. P. Berger and D. Turaev, On Herman's positive entropy conjecture, *Arxiv* (2017), 50 p.
6. P. Berger, Zoology in the Hénon family: twin babies and Milnor's swallows, *Arxiv* (2018), 42 p.

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 à l'École d'un Maître, *Gazette de la SMF en hommage à Jean-Christophe Yoccoz*, (2018) 6p.
6. —, Lectures on structural stability, *to appear in Simon's Semester volume of Banach Center Publications*, (2018) 28 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 *Ciencia 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 esthetopies.ihp.fr

- 11/2017-... Permanent exhibition at museum da ciencias UNAM (Mexico), with the sound part in collaboration with J. Royo-Letelier et S. Krakowski.
- Avril 2017 Interactive exhibition online: www.esthetopies.ihp.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.
- Jan. 2015- ... 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).
- Federal **Sailing** instructor (1st and 2nd degree) for coastal and offshore cruising (les Glénans).