CURRICULUM VITAE

François LABOURIE
born December 15, 1960, in Rouen (France), 5 children
professeur de classe exceptionnelle à l'Université Côte d'Azur
Laboratoire Jean-Dieudonné UMR 7351

Professional Experience

2014- – Full Professor at Université Côte d'Azur since September 2014

1994-2014 – Full Professor at Paris-Sud University since September 1994: "première classe" since September 1996, "classe exceptionnelle" since September 2003

1986-1994 – C.N.R.S. Research Fellow at the Mathematics Department of École Polytechnique and Assistant Professor at École Polytechnique in 1991-2001.

Education

1993 – "Habilitation de mathématiques" at Université Paris-Sud, examiners: Jean-Pierre Bourguignon, Misha Gromov, André Haefliger, Pierre-Louis Lions, Pierrre Pansu, Dennis Sullivan; referees: Albert Fathi, Robert Zimmer

1987 – Ph. D in mathematics (advisor M. Gromov) on the *"Géométrie et topologie des surfaces localement convexes"* at Université Paris 7, examiners: Daniel Bennequin, Marcel Berger, Haïm Brézis, Jean-Pierre Bourguignon, Misha Gromov

1980-1985 – Graduate: École Normale Supérieure

1977-1980 – Undergraduate: "Classes préparatoires au Lycée Corneille à Rouen"

Awards and Distinctions

2024 : ERC Advanced Grant *Geometric Analysis and Surface groups*
2024 : Visiting Dean of University of Toronto Professorship
2019 : Visiting UCB chancellor Professorship
2018 : Senior Member l'IUF
2016 : Member of the Academia Europeae
2016 : Louis D. Prize, French Academy of Sciences
2009 : ERC Advanced Grant *Higher Teichmüller–Thuston Theory*
2007 : Invited Plenary Lecture in the Deutsche Mathematiker-Vereinigung
1998 : Invited Lecture in Berlin ICM
1997 : Junior member of the Institut Universitaire de France
1993 : Carrière Prize from the French Academy of Sciences
1992 : Prize of the first European congress in Mathematics

Service to Mathematics

- *Other*
  - Member of the Abel Prize committee for 2019 and 2020
  - Président comité HCERES, IMB Bordeaux, December 2020
  - Evaluateur HCERES IMJ-PRG, March 2018
  - Expert member of the panel: DFG-Cluster of Excellence, April 2018
  - Member of the Board of trustees/conseil d'administration of École Normale Supérieure 2014–2019
  - Member of the Scientific Board of the IHP (Institut Henri Poincaré) 2006-2011
  - Member of the Geometry Panel of the ICM, Madrid 2006
  - ANR Grant "RepSurf" main investigator
  - ANR Grant "ETTT" co-investigator
  - ANR Grant "DynGeo" co-investigator
  - Member of hiring committees: École Polytechnique, ETH Zürich, Nantes, Grenoble, Nancy
- *Université Paris 11*
  - Member of the Steering Committee of the "Fondation Mathématique Jacques Hadamard" 2010-2014
  - Chair of the Math department 2004-2007,
  - Cochair in charge of research 2001-2004,
  - Cochair in charge of hiring 2001-2004,
- *Member of editorial boards*
  - *Geometry and Functional Analysis* 2018-
  - *Geometriae Dedicata* 2018-
  - *Inventiones Mathematicae* 2008-2017
  - *Geometriae Dedicata* 2002-2008
  - *Bulletin de la SMF* 1992-1997
- *Conference organization*
  - Organizer of the conference "*Representations of surface groups*", CIRM, September 2008
  - Organizer of the conference "*Geometric structures in low dimensions*", Autrans, January 2010
  - Coorganizer of the conference "*Analysis and geometry on surfaces* ", Autrans, March 2011
  - Coorganizer of the conference "*Ergodic geometry* ", Orsay, May 2011
  - Coorganizer of the winter school "*Introduction to surface group representations*", IHP-Paris-Autrans, January 2012
  - Coorganizer of the conference "*Surface group representations*", IHP-Paris, April 2012
  - Coorganizer of the conference "*Rigidity and flexibility in hyperbolic dynamics*", Luminy, May 2012
  - Coorganizer of the conference "*Higher Teichmüller–Thurston conference*", Montreal, October 2012
  - Coorganizer of the conference "*Control, traces and determinants*", Orsay, May 2013
  - Coorganizer of the conference "*Teichmüller theory*", Delhi, October 2013

  - Coorganizer of the conference "*RAG*", Strasbourg, 9–13 Octobre 2017
  - Coorganizer of the conference-workshop ICTS, Bangalore, 8- 21 décembre 2019
  - Coorganizer of the conference and summer school, Nice, 7- 21 janvier 2019
- *Research programs*
  - Coorganizer of the program *Geometry, Topology and Dynamics of Moduli Spaces* (Singapore, August 2016)
  - Coorganizer of the program "*The geometry, topology and physics of moduli spaces of Higgs bundles*", Singapore, Summer 2014
  - Coorganizer of the program "*Geometry and dynamics of moduli spaces*", MSRI-Berkeley, Spring 2015
  - Coorganizer of the program "*Geometric group theory and geometric structures*", Singapore, January 2020

Doctoral Students

- Jean-Marc Schlenker : *Isometric immersions of surfaces* - 1994
- Benoit Rivet : *Foliated harmonic maps* - 1998
- Graham Smith : *Submanifolds and elliptic problems* - 2004
- Duc-Manh Nguyen: *Flat surfaces with singularities* - 2008
- Sun Zhe: *Swapping algebras and applications* - 2014
- Sourav Ghosh: *Margulis space-times* - 2015
- Alexis Gilles: *r-Spin structures* - 2019
- Alexis Moriani: *Polygonal curves in the Einstein Universe* - current

Post- Doctoral Students

- Jérémy Toulisse: September 2018- September 2019, Founding ANR
- Maloni Sara: September 2012-September 2013, Founding ERC
- Sambarino Andres. September 2011-September 2013. Founding ERC
- Loustau Brice September 2011-September 2014.Founding ERC
- Nie Xin September 2013-September 2014 Founding ERC
- Roger Julien, September 2013-September 2014 Founding ERC
- Pal Susovan, September 2013-September 2014 Founding ERC

Invited Lectures since 2003

- *Lectures in summer schools since 2003*
  (1) Strasbourg 2005
  (2) Beida University, Pekin 2006
  (3) ETH-Zürich 2006
  (4) TIFR, Bombay 2007
  (5) Jerusalem 2008
  (6) Luminy 2008
  (7) Kyoto 2008

(8) Ann Arbor 2011
(9) Madrid 2014
(10) Pisa 2014
(11) Montevideo 2016
(12) Singapore 2016
(13) Rennes 2017
(14) Bangalore 2017
(15) Bangalore 2018

- *Main international invited lectures since 2003*

Oxford, 2 - 6/03/2003 **ETH-Zürich**, 9 - 13/05/2003 **Max-Planck-Münich**, 28/06 - 4/07/2003 **Stanford**, 5 - 10/08/2003 **Berkeley**, 10 - 22/08/2003 **Lisbonne**, 12 - 15/09/2003 **CRM-Montréal**, 2 - 10/01/2004 **Université de Grenade**, 31/01 - 4/02/2004 **ETH-Zürich**, 13 - 17/03/2004 **Beida-Pekin**, 20/07 - 21/08/2004 **Centro Ennio di Giorgi-Pise**, 23 - 29/10/2004 **Banff**, 6 - 11/12/2004 **Stanford**, 26/03 - 1/04/2005 **Madrid**, 22 - 29/04/2005 **Palerme**, 2 - 9/07/2005 **TIFR-Bombay**, 31/07 - 21/08/2005 **Centro Ennio di Giorgi-Pise**, 1 - 9/09/2005 **Princeton University**, 10 - 18/11/2005 **Yale University**, 25/05 - 2/06/2006 **AIM-Palo Alto**, 25/05 - 2/06/2006 **IMPA, Rio de Janeiro**, 30/07 - 21/08/2006 **Madrid**, 3 - 8/09/2006 **DMV- Bonn**, 20 - 22/09/2006 **Hebrew University**, 14 - 20/10/2006 **ETH-Zürich**, 27/10 - 27/12/2006 **AIM-Palo Alto**, 16 - 24/03/2007 **OSU-Columbus Ohio**, 15-22/04/2007 **Oberwolfach**, 1 - 6/07/2007 **Maryland University**, 1 - 20/08/2007 **MSRI-Berkeley**, 9 - 17/11/2007 **Princeton University**, 15 - 10/22/2008 **Hebrew University**, 9 - 16/05/2008 **Kyoto**, 2-9/07/2008 **TIFR-Bombay**, 10-20/08/2008 **Princeton University**, 22-29/11/2008 **Maryland University**, 2-9/12/2008 **University of Cork**, 8-10/05/2009 **Hebrew University**, 11 - 15/05/2009 **FRG-Park City-Utah**, 1 - 10/08/2009 **Maryland University**, 29/01 - 07/ 02/2009 **OSU-Columbus Ohio**, 15-22/04/2010 **Bangalore**, 02-08/08/2010 **Singapore**, 08-14/08/2010 **Sherbrooke**, 01-08/09/2010 **New Orleans,** 06-09/01/2011 **Oxford,** 14-18/03/2011 **Princeton,** 4-10/07/2011 **Maryland,** 14-15/08/2011 **Princeton,** 15-17/08/2011 **Dublin,** 29/08-2/09/2011 **Heidelberg,** 24/09-28/09/2011 **Singapore,** 22/10-30/10/2011 **Bonn,** 19/12-23/12/2011 **UIC-Champaign** 5/8-8/8/2012 **Calcutta, Delhi, Pune, Mohali,** 2013 **ICERM Brown**16/09-21/09/2013 **Heidelberg,** 12/05-15/05/2011 **Pisa,** 29/05-11/06/2014 **Cornell,** 23/06-29/06/2014 **Singapore,** 28/07-20/08/2014 **Berkeley,** 18/05/2015 **Oxford,** 20/09/–02/10/2015 **Cape Town,** 4/01–10/01/2016 **Trieste,** 30/06–2/06/2016 **Paris,** 14/06–18/06/2016 **Maryland,** 21/06–24/06/2016 **Cologne,** 16/01–18/01/2016 **Stanford,** 7/01/2016 **Luxembourg,** 23/05/2017 **Bangalore,** 10–24/11/2017 **Stanford,** 1/08-15/08/2017 **Ventotene,** 10/09-17/09/2017 **Stanford,** 15/05-18/05/2018 **Oaxaca,** 1/07-8/09/2018 **Singapore,** 1/11-8/11/2018 **Cetraro,** 26/5-1/06/2019 **Chiang Mai,** 14/7-22/7/2019 **Jerusalem,** 11/1/2020 **Luxembourg,** 24/1-27/1/2022 **Mumbai (virtual),** 10/02/2022 **IHES-Bures,** 14/02/2022 **Yale (virtual),**28/03/2022 **Yale (virtual),**28/03/2022

List of publications

Co-authors : Y. Benoist, J. Beyrer, J.-M. Bismut, M. Bridgeman, M. Burger, D. Canary, T. Delzant, R. Feres, P. Foulon, W. Goldman, O. Guichard, A. Iozzi, J. Kahn, G. Margulis, G. McShane, S. Mozes, B. Pozzetti, A. Sambarino, J.-M. Schlenker, S. P. Tan, J. Toulisse, R. Wentworth A. Wienhard, M. Wolf, R. Zimmer.

References

Books

[1] François Labourie. Lectures on representations of surface groups *Zürich Lectures in Advanced Mathematics, European Mathematical Society (EMS), Zürich, 2013.*

[2] Jean-Benoît Bost, Helmut Hofer, François Labourie, Yves Le Jan, Xiaonan Ma, Weiping Zhang, (Eds.), Geometry, Analysis and Probability *Progress in Mathematics 310, Birkhaüser, Berlin 2017*

Prepublications

[3] Ghost polygons, Poisson bracket and convexity (avec Martin Bridgeman) arXiv:2307.04380

[4] Positivity and representations of surface groups, (avec Olivier Guichard et Anna Wienhard) arXiv:2106.14584

[5] Positivity, cross-ratios and the Collar Lemma (avec Jonas Beyrer, Olivier Guichard, Beatrice Pozzetti et Anna Wienhard) arXiv:2409.06294

Publications

[6] Jeremy Kahn, François Labourie and Shahar Mozes. Surfaces subgroups in higher rank lattices, *Acta Mathematica*, 232, no 1, 79–220 (2024),

[7] François Labourie, On Tholozan's volume formula for closed anti-de-Sitter manifolds *Geom. Dedicata*, 218 no.2, Paper no 31, 7 pp (2024),

[8] François Labourie. Asymptotic counting of minimal surfaces in hyperbolic 3-manifolds, according to Calegari, Marques and Neves *Exposé Bourbaki no 1179* Astérisque no 430, Vol. 2019/2021 Exposés 1166-1180, 425–457 (2021)

[9] Jérémy Toulisse, François Labourie and Mike Wolf. Plateau problems for maximal surfaces in pseudo-hyperbolic spaces *Ann. Sci. Éc. Norm. Supér.* (4) 57 , no 2, 473—552 (2024)

[10] Jérémy Toulisse and François Labourie. Quasicircles and quasiperiodic surfaces in pseudo-hyperbolic spaces *Invent. Math.* 233 , no 1 , 81—168 (2023).

[11] Entropy and Affine actions for Surface groups *J. of Topology* 15, no 3, 1017–1033 (2022)

[12] Martin Bridgeman and Dick Canary and François Labourie. Simple length rigidity and Hitchin representations *Advances in Mathematics* (360) 106901, 61 pp (2020).

[13] François Labourie and Richard Wentworth. Variations along the Fuchsian locus, *Ann. Sci. Ec. Norm. Supér.* (4) 51 (2018), no. 2, 487–547

[14] François Labourie. Goldman Algebra, Opers and the Swapping Algebra, *Geom. Topol.* 22 (2018), no. 3, 1267–1348.

[15] Martin Bridgeman, Dick Canary, François Labourie and Andres Sambarino, Simple root flows for Hitchin representations Special volume in the honour of Bill Goldman, Geom. Dedicata 192 (2018), 57–86.

[16] François Labourie and Ser Peow Tan, The probabilistic nature of McShane's identity: planar tree coding of simple loops Special volume in the honour of Bill Goldman, Geom. Dedicata 192 (2018), 245–266.

[17] François Labourie. Cyclic surfaces and hitchin components in rank 2, *Annals of Maths* (2) 185 (2017), no. 1, 1–58.

[18] Martin Bridgeman, Dick Canary, François Labourie and Andres Sambarino, The pressure metric for convex representations. *Geom. Funct. Anal.* 25 (2015), no. 4, 1089–1179.

[19] William M Goldman and François Labourie. Geodesics in Margulis Space-times. *Erg. Theory and Dyn. Syst.* 32 , no. 2, 643–651, 2012.
[20] François Labourie. An algebra of observables for cross ratios. *C. R. Math. Acad. Sci. Paris 348* , no. 9-10, 503–507. 2010.
[21] François Labourie and Gregory McShane. Cross ratios and identities for higher Teichmüller-Thurston theory. *Duke Math. J.*, 148(9):279–345, Nov 2009.
[22] William M Goldman, François Labourie, and Gregory A A Margulis. Proper affine actions and geodesic flows for hyperbolic surfaces. *Annals of Maths*, 170(3):1051–1083, 2009.
[23] François Labourie. Cross ratios, Anosov representations and the energy functional on Teichmü.ller space. *Ann. Sci. Ecole Norm. Sup. (4)*, pages 1—38, 2008.
[24] Thomas Delzant, Olivier Guichard, François Labourie, and Shahar Mozes. Well displacing representations and orbit maps. in *Geometry, Rigidity, and Group Actions* (Benson Farb, David Fisher and Robert J. Zimmer, ed.), 494–514, Chicago Lectures in Math., Univ. Chicago Press, Chicago, (2011)
[25] François Labourie. Cross ratios, surface groups, PSL$(n, \mathbf{R})$ and diffeomorphisms of the circle. *Publ. Math. IHES*, (106):139–213, 2007.
[26] François Labourie. Flat projective structures on surfaces and cubic holomorphic differentials. *Pure Appl. Math. Q.*, 3(4):1057—1099, 2007.
[27] François Labourie. Anosov flows, surface groups and curves in projective space. *Invent. Math.*, 165(1):51–114, 2006.
[28] Marc Burger, Alessandra Iozzi, François Labourie, and Anna Wienhard. Maximal representations of surface groups: symplectic Anosov structures. *Pure Appl. Math. Q.*, 1(3):543–590, 2005.
[29] François Labourie. Random k-surfaces. *Ann. of Math. (2)*, 161(1):105–140, 2005.
[30] François Labourie. Fuchsian affine actions of surface groups. *J. Differential Geom.*, 59(1):15–31, 2001.
[31] François Labourie. Un lemme de Morse pour les surfaces convexes. *Invent. Math.*, 141(2):239–297, 2000.
[32] Jean-Michel Bismut and François Labourie. Symplectic geometry and the Verlinde formulas. In *Surveys in Differential Geometry*, volume V, pages 97–311. 1999.
[33] Renato Feres and François Labourie. Topological superrigidity and Anosov actions of lattices. *Ann. Sci. Ecole Norm. Sup. (4)*, 31(5):599–629, 1998.
[34] François Labourie and Jean-Marc Schlenker. Surfaces convexes fuchsiennes dans les espaces lorentziens à courbure constante. *Math. Ann.*, 316(3):465–483, 2000.
[35] François Labourie. Problèmes de Monge-Ampère, courbes holomorphes et laminations. *Geom. Funct. Anal.*, 7(3):496–534, 1997.
[36] François Labourie and Robert J Zimmer. On the non-existence of cocompact lattices for SL(n)/SL(m). *Math. Res. Lett*, 2(1):75–77, 1995.
[37] François Labourie, Shahar Mozes, and Robert J Zimmer. On manifolds locally modelled on non-riemannian homogeneous spaces. *Geom. Funct. Anal.*, 5(6):955–965, 1995.
[38] Yves Benoist and François Labourie. Sur les difféomorphismes d'Anosov affines à feuilletages stable et instable différentiables. *Invent. Math.*, 111(2):285–308, 1993.
[39] Patrick Foulon and François Labourie. Sur les variétés compactes asymptotiquement harmoniques. *Invent. Math.*, 109(1):97–111, 1992.
[40] Yves Benoist and François Labourie. Sur les espaces homogènes modèles de variétés compactes. *Publ. Math. IHES*, (76):99–109, 1992.
[41] François Labourie. Métriques prescrites sur le bord des variétés hyperboliques de dimension 3. *J. Differential Geom.*, 35(3):609–626, 1992.
[42] Yves Benoist, Patrick Foulon, and François Labourie. Flots d'Anosov à distributions stable et instable différentiables. *J. Amer. Math. Soc.*, 5(1):33–74, 1992.
[43] François Labourie. Surfaces convexes dans l'espace hyperbolique et $\mathbf{C}\mathrm{P}^1$-structures. *J. London Math. Soc. (2)*, 45(3):549–565, 1992.
[44] Yves Benoist, Patrick Foulon, and François Labourie. Flots d'Anosov à distributions de Liapounov différentiables. i. *Ann. Inst. H. Poincaré Phys. Théor.*, 53(4):395–412, 1990.
[45] François Labourie. Existence d'applications harmoniques tordues à valeurs dans les variétés à courbure négative. *Proc. Amer. Math. Soc.*, 111(3):877–882, 1991.
[46] François Labourie. Immersions isométriques elliptiques et courbes pseudo-holomorphes. *J. Differential Geom.*, 30(2):395–424, 1989.

[47] François Labourie. Problème de Minkowski dans les variétés hyperboliques et courbes pseudo-holomorphes. *Rend. Sem. Mat. Univ. Politec. Torino*, (Special Issue):63–76 (1990), 1989.
[48] François Labourie. Une relation entre diamètre extrinsèque, intégrale de la courbure de Gauss et inradius pour les hypersurfaces localement convexes d'un espace euclidien. *Math. Z.*, 197(4):551–559, 1988.
[49] François Labourie. Limite d'hypersurfaces localement convexes. *Invent. Math.*, 90(1):115–138, 1987.

Reviews or presentation articles

[50] François Labourie and Bill Goldman. Dynamics on Moduli Spaces of Geometric Structures *EMISSARY, MSRI, Spring 2015*
[51] François Labourie. What is ... a cross ratio. *Not. Am. Math. Soc*, 55(10):1234–1235, 2008.
[52] Lars Andersson, Thierry Barbot, Riccardo Benedetti, Francesco Bonsante, William M Goldman, François Labourie, Kevin P Scannell, and Jean-Marc Schlenker. Notes on: "Lorentz spacetimes of constant curvature" by G. Mess. *Geom. Dedicata*, 126:47–70, 2007.
[53] François Labourie. The phase space of k-surfaces. In *Rigidity in dynamics and geometry (Cambridge, 2000)*, pages 295–307. Springer, 2002.
[54] François Labourie. Pavages. In Nicole Berline Claude Sabbah, editor, *Pavages: Journées X-UPS 2001*, pages 49–75. Editions Ecole Polytechnique, 2001.
[55] François Labourie. Large groups actions on manifolds. In *Proceedings of ICM*, volume II, pages 371–380, 1998.
[56] François Labourie. Quelques résultats récents sur les espaces localement homogènes compacts. In F. Tricerri P. de Bartolomeis and E. Vesentini, editors, *Manifolds and Geometry (Pisa 1993) en l'honneur d'Eugenio Calabi.*, volume XXXVI of *Symposia Mathematica*, pages 267–283. Cambridge University Press, 1996.
[57] François Labourie. Exemples de courbes pseudo-holomorphes en géométrie riemannienne. In M. Audin, editor, *Pseudo-holomorphic curves in symplectic geometry*, volume 117, pages 251–269. Progress in Maths (Birkhaüser), 1994.