

# CV

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## **Koji Fujiwara**

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## **Education:**

1986. BSc. Univ of Tokyo  
1988. MSc. Univ of Tokyo  
1993. DrSc. Univ of Tokyo (Advisor : Kenji Fukaya)

## **Positions:**

1990 -1996. Instructor. Keio University  
1996 -1998. Assistant professor. Keio University  
1998 -2007. Associate professor. Tohoku University, Math Institute  
2007 - 2012. Professor. Tohoku University, Graduate School of Information Science.  
2012 - present. Professor. Kyoto University, Department of Mathematics

## **Service:**

2019 - present. Managing editor. Kyoto Journal of Mathematics

## **Long term visits**

1993 Apr - Jul. Univ of Warwick (Canon fellowship).  
1993 Oct - 1995 Mar. MSRI.  
1998 Sep - 1999 Mar. Univ of Utah.  
1999 Apr - 2000 Jan. Univ of Warwick.  
2005 Sep-2006 Feb, 2006 Aug. MPI in Bonn  
2007 Sep-Dec. MSRI  
2016 Aug-Dec. MSRI (Eisenbud Professor)

## **Invited talks:**

2001. 1st AMS-SMF meeting. ENS Lyon.  
2002. 15th JAMI (Japan-US Math Institute) meeting. Johns Hopkins U.  
2004. Brooks memorial meeting. Technion. Israel.

- 2006. Groups of diffeomorphisms (Morita conference), U Tokyo
- 2009. Davis 60, Bedlewo, Poland.
- 2011. Ballmann's 60th birthday conference. MPI, Bonn
- 2013. The XXIIth Rolf Nevanlinna Colloquium. Plenary talk. Helsinki.
- 2014. Geometric and Combinatorial Group Theory. In honor of Eliyahu Rips workshop, Hebrew U, Israel.
- 2015. Cornell Topology Festival.
- 2018. International Congress of Mathematicians 2018. Invited lecture (Topology section). Brazil.

**Awards:**

- 2005. Geometry Prize (Mathematical Society of Japan).
- 2013. Commendation for Science and Technology (Minister of Education, Culture, Sports, Science and Technology, Japan)
- 2015. Fall Prize (Mathematical Society of Japan)

**Publication:**

1. K. Fujiwara, A construction of negatively curved manifolds, **Proc. Japan Acad. Ser.A**, 64 (1988), no. 9, 352–355.
2. K. Fujiwara, Metric deformation of non-positively curved manifolds, **J. Math. Soc. Japan**, 42 (1990), no. 2, 213–219.
3. K. Fujiwara, On the bottom of the spectrum of the Laplacian on graphs, “Geometry and Its Applications”, 1993, World Scientific, 21–27
4. K. Fujiwara, Convergence of the eigenvalues of Laplacians in a class of finite graphs, “Geometry of the Spectrum”, Contemporary Mathematics, vol 173, AMS, 1994, 115-120.
5. K. Fujiwara, Eigenvalues of Laplacians on a closed Riemannian manifold and its nets, **Proc. AMS.**, Vol 123, No 8, (1995), 2585 - 2594.
6. K. Fujiwara, Growth and the spectrum of the Laplacian of an infinite graph, **Tohoku Math J.** 48, (1996), 293-302.
7. K. Fujiwara, Laplacians on rapidly branching trees, **Duke Math Jour.** 83, no 1, (1996), 191-202.
8. D.B.A. Epstein, K. Fujiwara, The second bounded cohomology of word hyperbolic groups, **Topology** 36, (1997), 1275-1289.
9. K. Fujiwara, The second bounded cohomology of a group acting on a Gromov-hyperbolic space, **Proc. London Math. Soc.**(3) 76, no 1 (1998), 70-94.
10. K. Fujiwara, A. Nevo, Maximal and pointwise Ergodic Theorems for word-hyperbolic groups, **Erg. Th. and Dyn. Sys.** 18. No4, (1998), 843-874.
11. K.Fujiwara, On isometric actions of  $SL(n, \mathbb{Z})$  on visibility manifolds, **Geom. Dedicata**, vol 77 (1999) No2, 203-208.
12. K.Fujiwara, 3-manifold groups and property T of Kazhdan, **Proc. Japan Acad. Ser.A**, 75 (1999), no.7, 103–104.

13. K. Fujiwara, The second bounded cohomology of amalgamated free product of groups, **Trans. A.M.S.** 352 (2000), no.3, 1113–1129.
14. K.Fujiwara, On a theorem by Farb and Masur, **Proc. A.M.S.** 128 (2000), 3463-3464.
15. K. Fujiwara, K. Ohshika, The second bounded cohomology of 3-manifold groups, **Publ. Res. Inst. Math. Sci.** 38 (2002), no. 2, 347–354.
16. K.Fujiwara, T.Soma, Bounded classes in the cohomology of manifolds, **Geom. Dedicata.** 92, 73-85, (2002).
17. M.Bestvina, K.Fujiwara, Bounded cohomology of subgroups of mapping class groups. **Geometry and Topology**, Volume 6 (2002) 69–89.
18. K.Fujiwara, On the outer automorphism group of a hyperbolic group. **Israel J of Math.**131, (2002) 277-284.
19. K.Fujiwara, T.Shioya, S.Yamagata. Parabolic isometries of CAT(0) spaces and CAT(0)-dimensions. **Algebr. Geom. Topol.** 4 (2004), 861–892
20. K.Fujiwara. On non bounded generation of discrete subgroups in rank-1 Lie group. *Geometry, spectral theory, groups, and dynamics*, 153–156, *Contemp. Math.*, 387, Amer. Math. Soc., Providence, RI, 2005.
21. K.Fujiwara, P.Papasoglu, JSJ-decompositions of finitely presented groups and complexes of groups, **Geom. Funct. Anal.** 16 (2006), no. 1, 70–125.
22. K.Fujiwara, K.Nagano, T.Shioya. Fixed point sets of parabolic isometries of CAT(0)-spaces. **Comment. Math. Helv.** 81 (2006), no. 2, 305–335.
23. M.Bestvina, K.Fujiwara. Quasi-homomorphisms on mapping class groups. **Glasnik Matematicki**, Vol. 42, No.1 (2007), 213-236.
24. K.Fujiwara, K.Whyte. A note on spaces of asymptotic dimension one. **Algebraic and Geometric Topology** 7 (2007) 1063-1070.
25. G.Bell, K.Fujiwara. The asymptotic dimension of a curve graph is finite. **J. London Math. Soc.** 77 (2008) 33-50.

26. K.Fujiwara, Subgroups generated by two pseudo-Anosov elements in a mapping class group. I. Uniform exponential growth. “Groups of Diffeomorphisms”, 283-296, ASPM 52, 2008, Mathematical Society of Japan.
27. K.Fujiwara, Quasi homomorphisms on mapping class groups, “Handbook of Teichmuller Theory, Volume II”. 241-270. 2009, EMS.
28. M.Bestvina, K.Fujiwara. A characterization of higher rank symmetric spaces via bounded cohomology. **Geom. and Funct. Anal.**, 19, no 1. (2009), 11-40.
29. Francois Dahmani, Koji Fujiwara, Copies of a one-ended group in a Mapping Class Group. **Groups, Geometry, and Dynamics**, Volume 3, Issue 3, (2009) pp. 359-377.
30. Danny Calegari, K.Fujiwara. Stable commutator length in word-hyperbolic groups. **Groups, Geometry, and Dynamics**. Volume 4, Issue 1, (2010), pp. 59-90
31. Danny Calegari, Koji Fujiwara. Combable functions, quasimorphisms, and the central limit theorem. **Ergodic Theory and Dynamical Systems** 30 (2010), 1343-1369.
32. Pierre-Emmanuel Caprace, Koji Fujiwara. Rank one isometries of buildings and quasi-morphisms of Kac-Moody groups. **Geom. and Funct. Anal.** 19, Number 5 (2010) 1296-1319.
33. Koji Fujiwara, Jason Fox Manning. CAT(0) and CAT(-1) fillings of hyperbolic manifolds. **Jour. Diff. Geometry** 85, No. 2 (2010), 229-270.
34. Koji Fujiwara, Jason Fox Manning. Simplicial volume and fillings of hyperbolic manifolds. **Algebraic & Geometric Topology**. 11 (2011) 2237-2264.
35. Koji Fujiwara, Tetsu Toyoda, Random groups have fixed points on CAT(0) cube complexes, **Proc. Amer. Math. Soc.** Volume 140, Number 3, (2012), 1023-1031.

36. K. Fujiwara, Geometry of the Funk metric on Weil-Petersson spaces, **Math. Zeit.** (2013), Volume 274, Issue 1-2, pp 647-665.
37. Francois Dahmani, Koji Fujiwara, Vincent Guirardel. Free groups of interval exchange transformations are rare. **Groups, Geometry, and Dynamics.** Volume 7, Issue 4, (2013), pp. 883-910.
38. M. Bestvina, K. Bromberg, K. Fujiwara, J. Souto. Shearing coordinates and convexity of length functions on Teichmueller space. **Amer. Jour. Math.** Volume 135, Number 6, (2013). pp. 1449-1476.
39. K. Fujiwara. Subgroups generated by two pseudo-Anosov elements in a mapping class group. II. Uniform bound on exponents. **Trans. Amer. Math. Soc.** 367 (2015). 4377-4405.
40. D. Calegari, K. Fujiwara, Counting subgraphs in hyperbolic graphs with symmetry. **Journal of the Mathematical Society of Japan** (2015) 1213-1226.
41. Mladen Bestvina, Kenneth Bromberg, Koji Fujiwara. Constructing group actions on quasi-trees and applications to mapping class groups. **Publ. Math. Inst. Hautes Etudes Sci.** 122 (2015), 1-64.
42. Koji Fujiwara. Asymptotically isometric metrics on relatively hyperbolic groups and marked length spectrum. **Journal of Topology and Analysis** 7, no 2, 2015, 345-359.
43. Bestvina, Mladen; Bromberg, Ken; Fujiwara, Koji. Bounded cohomology with coefficients in uniformly convex Banach spaces. **Comment. Math. Helv.** 91 (2016), no. 2, 203-218.
44. Bestvina, Mladen; Bromberg, Ken; Fujiwara, Koji. Stable commutator length on mapping class groups. **Ann. Inst. Fourier** 66 (2016), no. 3, 871-898.
45. Fujiwara, Koji. Can one hear the shape of a group? Geometry and topology of manifolds, 139-146, Springer Proc. Math. Stat., 154, Springer, 2016.
46. Fujiwara, Koji; Kapovich, Michael. On quasihomomorphisms with noncommutative targets. **Geom. Funct. Anal.** 26 (2016), no. 2, 478-519.

47. Bestvina, Mladen; Fujiwara, Koji. Handlebody subgroups in a mapping class group. In the tradition of Ahlfors-Bers. VII, 29-50, *Contemp. Math.*, 696, Amer. Math. Soc., Providence, RI, 2017.
48. Bestvina, Mladen; Bromberg, Kenneth; Fujiwara, Koji. The verbal width of acylindrically hyperbolic groups. ***Algebr. Geom. Topol.*** 19 (2019), no. 1, 477-489.