

VITA

Philippe MICHEL

Born 23 jan. 23 1969, LYON 4ème

Married, 3 children

CONTACT

EPFL/SB/IMB/TAN, Station 8
Ecole Polytechnique Fédérale de Lausanne
CH-1015, LAUSANNE, SUISSE

Tel: +41 21693 2576

Fax: +41 21693 5839

Email : philippe.michel@epfl.ch

webpage: <http://tan.epfl.ch/~pmichel>

EDUCATION

1998: Habilitation à diriger les recherches de l'Université Paris-Sud.

1995: Doctorat de Mathématiques pures Paris-Sud sous la direction de E. Fouvry.

1993-1994: Assistant Moniteur Normalien à l' Université Paris-Sud.

1989-1993: École Normale Supérieure de Cachan.

1987-1989: Classe Préparatoires (Sup. & M') au Lycée Public du Parc, Lyon.

MILITARY SERVICE

1994-1995: 99ème Régiment d' Infanterie de Sathonay-Camp.

POSITIONS

2008- : Professeur Ordinaire, École Polytechnique Fédérale de Lausanne.

2003-2008: Professeur de 1ère classe, Université Montpellier II.

1998-2003: Professeur de 2ème classe, Université Montpellier II.

1999-2000: member, Institute for Advanced Studies, Princeton.

1995-1998: Maître de Conférences de 2ème classe, Université Paris-Sud.

DISTINCTIONS

2009-2014: Advanced Grant, European Research Council, principal investigator (joint project with M. Einsiedler, E. Lindenstrauss and A. Venkatesh).

2006: Invited speaker (number theory section), ICM Madrid.

2001-2003: ACI Young Researcher, Principal investigator.

1999-2004: Member of Institut Universitaire de France.

1999: Prix PECCOT-VIMONT, Collège de France.

SELECTED LECTURES

- Jan. 2010: Colloquium, Univ. Tuebingen.
Oct. 2009: Lecture, Journées de la Société Mathématique Suisse, Porrentruy.
Oct. 2009: Colloquium, Univ. Fribourg.
Sept-Dec 2009: Nachdiplomvorlesung, 14 weeks lecture series, ETH Zuerich.
Apr. 2009, Colloquium, Université de Genève.
Feb. 2009, Southern California Number Theory Day, Caltech, Pasadena.
May 2008: “Analytic number theory in higher rank”, Courant Institute, New York.
Feb. 2008: Colloquium, Univ. Neuchatel.
May 2007: “L-functions and Automorphic forms” for D. Goldfeld’s 60th birthday, Columbia University.
Sept. 2006: International Arithmetic Algebraic Geometry conference, Madrid.
Août 2006: ICM Madrid.
Apr. 2006: Hahn Lectures, Yale University.
Apr. 2006: Number Theory Days, ETH. Zürich.
Jan. 2006: Colloquium, Stanford University.
Nov. 2005: Colloquium, EPF Lausanne.
June 2005: Gauss/Dirichlet conference (for the 150-th anniversary of C. F. Gauss’s death and the 200-th anniversary of P. L. Dirichlet’s birth), Goettingen.
Feb. 2004: Colloquium ”Deutsch-Französischer Diskurs”, Université de Saarbruecken.
Dec. 2003: ”Arithmetic Geometry and Number Theory”, N. M. Katz’s 60th birthday, Princeton University.
May 2002: ”Zeta-Functions and Associated Riemann Hypotheses”, Courant Institute NYU, New York.
Jul. 2001: Plenary lecture. Journées Arithmétiques 2001, Lille.
June 2001: Journées de la Société Mathématique Suisse, Neuchâtel.
March 2001: Séminaire BOURBAKI.
Jan. 2001: Colloquium, Université Lyon 1.
Apr. 2000: “Recent Trends in Analytic Number Theory”, Institute for Advanced Studies, Princeton.
March 1999: Cours Peccot, Collège de France.
March 1998: Séminaire BOURBAKI.
Jul. 1997: International conférence in number theory, A. Schinzel’s 60-th birthday, Zakopane.

PhD Students

- 2009- : H. Wu.
2005- 2008 :N. Templier.
2004-2008 : B. Louvel (jointly with S. J. Patterson).
2004-2007 : D. Trotabas.
2001-2004 : G. Ricotta.
1998-2001 : E. Royer (jointly with E. Fouvry)

Editorial Board

- 2007- :Journal of Number Theory.
2006- :Journal de Théorie des Nombres de Bordeaux.
2004- :Archiv des Mathematik.
2004-2007 :International Journal of Number Theory.

Papers

In preparation

- [1] M. Einsiedler, E. Lindenstrauss, Ph. Michel, and A. Venkatesh, *Distribution of periodic torus orbits on homogeneous spaces II: Duke's theorem for quadratic fields*.

Preprints

- [2] J. Ellenberg, Ph. Michel, and A. Venkatesh, *Linnik's ergodic method and the distribution of integral points on spheres*. (2010).

Published papers

- [3] M. Einsiedler, E. Lindenstrauss, Ph. Michel, and A. Venkatesh, *Distribution of periodic torus orbits on homogeneous spaces III: Duke's theorem for cubic fields*, Ann. of Math. (to appear) (2010). <http://arxiv.org/abs/0708.1113>.
- [4] Ph. Michel and A. Venkatesh, *The subconvexity problem for GL_2* , Publ. Math. IHES (to appear) (2009). <http://arxiv.org/abs/0903.3591>.
- [5] Ph. Michel and D. Ramakrishnan, *Consequences of the Gross/Zagier formulae: Stability of average L -values, subconvexity, and non-vanishing mod p* , Lang memorial volume (to appear) (2007). <http://arxiv.org/abs/0709.4668>.
- [6] J. Bourgain, E. Lindenstrauss, Ph. Michel, and A. Venkatesh, *Some effective results for $\times a \times b$* , Ergodic Theory and Dynamical Systems **29** (2009), 1705-1722.
- [7] M. Einsiedler, E. Lindenstrauss, Ph. Michel, and A. Venkatesh, *Distribution of periodic torus orbits on homogeneous spaces I*, Duke Math. Journal **148** (2009), no. 1, 119-174. <http://arxiv.org/abs/math/0607815>.
- [8] V. Blomer, G. Harcos, and Ph. Michel, *Bounds for modular L -functions in the level aspect*, Ann. Sci. École Norm. Sup. (4) **40** (2007), no. 5, 697-740.
- [9] E. Fouvry and Ph. Michel, *Sur le changement de signe des sommes de Kloosterman*, Ann. of Math. (2) **165** (2007), no. 3, 675-715.
- [10] Ph. Michel and A. Venkatesh, *Heegner points and non-vanishing of Rankin/Selberg L -functions*, Analytic number theory, Clay Math. Proc., vol. 7, Amer. Math. Soc., Providence, RI, 2007, pp. 169-183.
- [11] V. Blomer, G. Harcos, and Ph. Michel, *A Burgess-like subconvex bound for twisted L -functions*, Forum Math. **19** (2007), no. 1, 61-105. Appendix 2 by Z. Mao.
- [12] Ph. Michel, *Analytic number theory and families of automorphic L -functions*, Automorphic forms and applications (Park City, UT, 2002), IAS/Park City Math. Ser., vol. 12, Amer. Math. Soc., Providence, RI, 2007, pp. 179-296.
- [13] Ph. Michel and A. Venkatesh, *Equidistribution, L -functions and ergodic theory: on some problems of Yu. Linnik*, International Congress of Mathematicians. Vol. II, Eur. Math. Soc., Zürich, 2006, pp. 421-457.
- [14] Ph. Michel, *Some recent applications of Kloostermania*, Physics and number theory, IRMA Lect. Math. Theor. Phys., vol. 10, Eur. Math. Soc., Zürich, 2006, pp. 225-251.
- [15] G. Harcos and Ph. Michel, *The subconvexity problem for Rankin-Selberg L -functions and equidistribution of Heegner points. II*, Invent. Math. **163** (2006), no. 3, 581-655.
- [16] Ph. Michel, *Some specimens of L -functions*, Recent perspectives in random matrix theory and number theory, London Math. Soc. Lecture Note Ser., vol. 322, Cambridge Univ. Press, Cambridge, 2005, pp. 357-424.
- [17] Ph. Michel, *The subconvexity problem for Rankin-Selberg L -functions and equidistribution of Heegner points*, Ann. of Math. (2) **160** (2004), no. 1, 185-236.
- [18] E. Fouvry, Ph. Michel, J. Rivat, and A. Sárközy, *On the pseudorandomness of the signs of Kloosterman sums*, J. Aust. Math. Soc. **77** (2004), no. 3, 425-436.
- [19] J. Cogdell and Ph. Michel, *On the complex moments of symmetric power L -functions at $s = 1$* , Int. Math. Res. Not. **31** (2004), 1561-1617.
- [20] E. Fouvry and Ph. Michel, *Crible asymptotique et sommes de Kloosterman*, Proceedings of the Session in Analytic Number Theory and Diophantine Equations, Bonner Math. Schriften, vol. 360, Univ. Bonn, Bonn, 2003, pp. 27.
- [21] Ph. Michel, *Familles de fonctions L de formes automorphes et applications*, J. Théor. Nombres Bordeaux **15** (2003), no. 1, 275-307. Les XXIIèmes Journées Arithmétiques (Lille, 2001).
- [22] E. Fouvry and Ph. Michel, *Sommes de modules de sommes d'exponentielles*, Pacific J. Math. **209** (2003), no. 2, 261-288.

- [23] Ph. Michel, *Répartition des zéros des fonctions L et matrices aléatoires*, Astérisque **282** (2002), Exp. No. 887, viii, 211–248. Séminaire Bourbaki, Vol. 2000/2001.
- [24] E. Kowalski and Ph. Michel, *Zeros of families of automorphic L -functions close to 1*, Pacific J. Math. **207** (2002), no. 2, 411–431.
- [25] Ph. Michel and J. Vanderkam, *Simultaneous nonvanishing of twists of automorphic L -functions*, Compositio Math. **134** (2002), no. 2, 135–191.
- [26] Ph. Michel and A. Venkatesh, *On the dimension of the space of cusp forms associated to 2-dimensional complex Galois representations*, Int. Math. Res. Not. **38** (2002), 2021–2027.
- [27] E. Kowalski, Ph. Michel, and J. Vanderkam, *Rankin-Selberg L -functions in the level aspect*, Duke Math. J. **114** (2002), no. 1, 123–191.
- [28] É. Fouvry and Ph. Michel, *À la recherche de petites sommes d'exponentielles*, Ann. Inst. Fourier (Grenoble) **52** (2002), no. 1, 47–80.
- [29] L. Merel, *Sur la nature non-cyclotomique des points d'ordre fini des courbes elliptiques*, Duke Math. J. **110** (2001), no. 1, 81–119. With an appendix by E. Kowalski and Ph. Michel.
- [30] H. Iwaniec and Ph. Michel, *The second moment of the symmetric square L -functions*, Ann. Acad. Sci. Fenn. Math. **26** (2001), no. 2, 465–482.
- [31] E. Kowalski and Ph. Michel, *Deux théorèmes de non-annulation de valeurs spéciales de fonctions L* , Manuscripta Math. **104** (2001), no. 1, 1–19.
- [32] E. Kowalski, Ph. Michel, and J. Vanderkam, *Mollification of the fourth moment of automorphic L -functions and arithmetic applications*, Invent. Math. **142** (2000), no. 1, 95–151.
- [33] E. Kowalski and Ph. Michel, *Explicit upper bound for the (analytic) rank of $J_0(q)$* , Israel J. Math. **120** (2000), 179–204.
- [34] E. Kowalski, Ph. Michel, and J. Vanderkam, *Non-vanishing of high derivatives of automorphic L -functions at the center of the critical strip*, J. Reine Angew. Math. **526** (2000), 1–34.
- [35] E. Kowalski and Ph. Michel, *A lower bound for the rank of $J_0(q)$* , Acta Arith. **94** (2000), no. 4, 303–343.
- [36] Ph. Michel and J. Schneider, *Approximation simultanée de réels par des nombres rationnels et noyau de collision de l'équation de Boltzmann*, C. R. Acad. Sci. Paris Sér. I Math. **330** (2000), no. 9, 857–862.
- [37] D. R. Heath-Brown and Ph. Michel, *Exponential decay in the frequency of analytic ranks of automorphic L -functions*, Duke Math. J. **102** (2000), no. 3, 475–484.
- [38] Ph. Michel and J. Vanderkam, *Non-vanishing of high derivatives of Dirichlet L -functions at the central point*, J. Number Theory **81** (2000), no. 1, 130–148.
- [39] E. Kowalski and Ph. Michel, *The analytic rank of $J_0(q)$ and zeros of automorphic L -functions*, Duke Math. J. **100** (1999), no. 3, 503–542.
- [40] Ph. Michel, *Sur les zéros de fonctions L sur les corps de fonctions*, Math. Ann. **313** (1999), no. 2, 359–370.
- [41] Ph. Michel, *Progrès récents du crible et applications (d'après Duke, Fouvry, Friedlander, Iwaniec)*, Astérisque **252** (1998), Exp. No. 842, 4, 185–209. Séminaire Bourbaki. Vol. 1997/98.
- [42] Ph. Michel, *Minorations de sommes d'exponentielles*, Duke Math. J. **95** (1998), no. 2, 227–240.
- [43] Ph. Michel and E. Ullmo, *Points de petite hauteur sur les courbes modulaires $X_0(N)$* , Invent. Math. **131** (1998), no. 3, 645–674.
- [44] Ph. Michel, *Autour de la conjecture de Sato-Tate pour les sommes de Kloosterman. II*, Duke Math. J. **92** (1998), no. 2, 221–254.
- [45] E. Fouvry and Ph. Michel, *Sur certaines sommes d'exponentielles sur les nombres premiers*, Ann. Sci. École Norm. Sup. (4) **31** (1998), no. 1, 93–130.
- [46] Ph. Michel, *Le rang de familles de variétés abéliennes*, J. Algebraic Geom. **6** (1997), no. 2, 201–234.
- [47] Ph. Michel, *Rang moyen de familles de courbes elliptiques et lois de Sato-Tate*, Monatsh. Math. **120** (1995), no. 2, 127–136.
- [48] Ph. Michel, *Autour de la conjecture de Sato-Tate pour les sommes de Kloosterman. I*, Invent. Math. **121** (1995), no. 1, 61–78.