

# CURRICULUM VITAE

## Michael (Michail) Th. Rassias

### Contact Information

Address: Institute of Mathematics  
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### Personal data

Date of birth: August 3, 1987, Athens, Greece  
Nationality: Greek

### Education

Ph.D. from ETH-Zürich, Department of Mathematics, 2011-2014.  
Dissertation title: *Analytic investigation of cotangent sums related to the Riemann zeta function.*  
Thesis advisor: Professor Emmanuel Kowalski (ETH-Zurich).  
Co-supervisor: Professor Helmut Maier (University of Ulm).

Master of Advanced Study in Mathematics from the University of Cambridge, 2010-2011.

Diploma from the School of Electrical and Computer Engineering, National Technical University of Athens (NTUA), 2005-2010.

### Research Interests

My research interests lie in mathematical analysis, analytic number theory and more specifically in exponential / trigonometric sums, zeta functions, approximation theory, functional equations and analytic inequalities. I am also interested in the distribution of prime numbers and the analytic investigation of elliptic curves.

**My h-index:** 11

## Academic Employment

Since September 1, 2015, I have been a researcher with teaching duties (I have also been Forschungskredit researcher for 2016-2017) at the Institute of Mathematics of the University of Zürich and a visiting researcher at the Program in Interdisciplinary Studies of the Institute for Advanced Study, Princeton.

During the academic year 2014-2015, I was a postdoctoral researcher at the Department of Mathematics of Princeton University and the Department of Mathematics of ETH-Zürich, conducting research at Princeton with support granted from ETH-Zürich. While at Princeton, I collaborated with Professor John F. Nash, Jr. for the preparation of the volume entitled “Open Problems in Mathematics”, Springer, 2016.

## Publications

### I. Papers / Articles

#### *In Journals*

1. H. Maier and M. Th. Rassias, *A criterion related to the Riemann Hypothesis*, preprint.
2. H. Maier and M. Th. Rassias, *Asymptotics for moments of certain cotangent sums for arbitrary exponents*, Houston Journal of Mathematics (to appear).
3. M. Th. Rassias, *From a cotangent sum to a generalized totient function*, Applicable Analysis and Discrete Mathematics (to appear).
4. M. Th. Rassias and B. Yang, *Equivalent properties of a Hilbert-type integral inequality with the best constant factor related to the Hurwitz zeta function*, Annals of Functional Analysis (to appear).
5. M. Th. Rassias and B. Yang, *A half-discrete Hilbert-type inequality in the whole plane related to the Riemann zeta function*, Applicable Analysis, DOI: 10.1080/00036811.2017.1313411.
6. Y. -H. Lee, S. -M. Jung and M. Th. Rassias, *Uniqueness theorems on functional inequalities concerning cubic-quadratic-additive equation*, Journal of Mathematical Inequalities (to appear).
7. H. Maier and M. Th. Rassias, *The maximum of cotangent sums related to Estermann's zeta function in rational numbers in short intervals*, Applicable Analysis and Discrete Mathematics, 11(2017), 166–176.
8. H. Maier and M. Th. Rassias, *Asymptotics for moments of certain cotangent sums*, Houston Journal of Mathematics, 43(1)(2017), 207-222.
9. M. Th. Rassias and B. Yang, *Equivalent conditions of a Hardy-type integral inequality related to the extended Riemann zeta function*, Advances in Operator Theory, 2(3)(2017), 237- 256.
10. H. Maier and M. Th. Rassias, *Large gaps between consecutive prime numbers containing perfect  $k$ -th powers of prime numbers*, Journal of Functional Analysis, 272(2017) 2659-2696.

11. H. Maier and M. Th. Rassias, *The ternary Goldbach problem with a prime and two isolated primes*, Proceedings of the Steklov Institute of Mathematics, 296(2017), 183-197. Also translated in Russian and published in Trudy Matematich. Instituta im. V.A. Steklova, 296(2017), 192-206.
12. H. Maier and M. Th. Rassias, *Generalizations of a cotangent sum associated to the Estermann zeta function*, Communications in Contemporary Mathematics, 18(1)(2016), 89 pages, DOI: 10.1142/S0219199715500789.
13. M. R. Abdollahpoura, R. Aghayaria, M. Th. Rassias, *Hyers-Ulam stability of associated Laguerre differential equations in a subclass of analytic functions*, Journal of Mathematical Analysis and Applications, 437(2016), 605- 612.
14. H. Maier and M. Th. Rassias, *The rate of growth of moments of certain cotangent sums*, Aequationes Mathematicae, 2015, 90(3)(2016), 581- 595.
15. H. Maier and M. Th. Rassias, *Large gaps between consecutive prime numbers containing square-free numbers and perfect powers of prime numbers*, Proceedings of the American Mathematical Society, 144(2016), 3347 - 3354.
16. M. Th. Rassias and B. Yang, *On a Hardy-Hilbert-type inequality with a general homogeneous kernel*, International Journal of Nonlinear Analysis and Applications, 7(1)(2016), 249-269.
17. H. Maier and M. Th. Rassias, *The order of magnitude for moments for certain cotangent sums*, Journal of Mathematical Analysis and Applications, 429(1)(2015), 576-590.
18. M. Th. Rassias and B. Yang, *A Hilbert-type integral inequality in the whole plane related to the hypergeometric function and the Beta function*, Journal of Mathematical Analysis and Applications, 428(2)(2015), 1286-1308.
19. S. -M. Jung, M. Th. Rassias and C. Mortici, *On a functional equation of trigonometric type*, Applied Mathematics and Computation, 252(2015), 294-303.
20. C. Mortici and M. Th. Rassias, *On the growth rate of divergent series*, Journal of Number Theory, 147(2015), 499–507.
21. M. Th. Rassias, *On the representation of the number of integral points of an elliptic curve modulo a prime number*, The Ramanujan Journal, Springer, 36(3)(2015), 483–499.
22. M. Th. Rassias and B. Yang, *On a multidimensional Hilbert-type integral inequality associated to the Gamma function*, Applied Mathematics and Computation, 249(2014), 408-418.
23. C. Mortici, M. Th. Rassias and S. -M. Jung, *On the stability of a functional equation associated with the Fibonacci numbers*, Abstract and Applied Analysis, Volume 2014 (2014), Article ID 546046, 6 pages.
24. M. Th. Rassias and B. Yang, *On a multidimensional half-discrete Hilbert-type inequality related to the hyperbolic cotangent function*, Applied Mathematics and Computation, 242(2014), 800–813.
25. S. -M. Jung and M. Th. Rassias, *A linear functional equation of third order associated to the Fibonacci numbers*, Abstract and Applied Analysis, Volume 2014 (2014), Article ID 137468.
26. M. Th. Rassias, *A cotangent sum related to zeros of the Estermann zeta function*, Applied Mathematics and Computation, 240(2014), 161–167.
27. S. -M. Jung, D. Popa and M. Th. Rassias, *On the stability of the linear functional equation in a single variable on complete metric groups*, Journal of Global Optimization, 59(2014), 165–171.

28. Y. -H. Lee, S. -M. Jung and M. Th. Rassias, *On an  $n$ -dimensional mixed type additive and quadratic functional equation*, Applied Mathematics and Computation, 228(2014), 13–16.
29. M. Th. Rassias and B. Yang, *A multidimensional half-discrete Hilbert-type inequality and the Riemann zeta function*, Applied Mathematics and Computation, 225(2013), 263–277.
30. M. Th. Rassias and B. Yang, *On half-discrete Hilbert's inequality*, Applied Mathematics and Computation, 220(2013), 75–93.
31. G. V. Milovanović and M. Th. Rassias, *Some properties of a hypergeometric function which appear in an approximation problem*, Journal of Global Optimization, 57(2013), 1173–1192.
32. P. Mihăilescu and M. Th. Rassias, *Public key cryptography, number theory and applications*, Newsletter, European Mathematical Society, 86(2012), 25–30.

### ***In collected volumes***

1. M. Th. Rassias and B. Yang, *A half-discrete Hardy-Hilbert-type inequality with a best possible constant factor related to the Hurwitz zeta function*, In: Progress in Approximation Theory and Applicable Complex Analysis: In the Memory of Q. I. Rahman, Springer, 183-218.
2. H. Maier and M. Th. Rassias, *Asymptotics and equidistribution of cotangent sums associated to the Estermann and Riemann zeta functions*, In: From Arithmetic to Zeta-Functions. Number Theory in Memory of Wolfgang Schwarz, Springer, Basel, 2016, 277-293.
3. M. Th. Rassias and L. Tóth, *Trigonometric representations of generalized Dedekind and Hardy sums via the discrete Fourier transform*, In: Analytic Number Theory. In honor of Helmut Maier's 60th birthday, Springer, New York, 2015, 329-343.
4. B. Tams, M. Th. Rassias and P. Mihăilescu, *Current challenges for IT security with focus on Biometry*, In: Computation, Cryptography, and Network Security, Springer, New York, 2015, 461-491.
5. B. Yang and M. Th. Rassias, *Parameterized Yang-Hilbert-type integral inequalities and their operator expressions*, In: Computation, Cryptography, and Network Security, Springer, New York, 2015, 635-736.
6. M. Th. Rassias and B. Yang, *A multidimensional Hilbert-type integral inequality related to the Riemann zeta function*, In: Applications of Mathematics and Informatics in Science and Engineering, Springer, New York, 2014, 417–433.
7. P. Mihăilescu and M. Th. Rassias, *Computational number theory and cryptography*, In: Applications of Mathematics and Informatics in Science and Engineering, Springer, New York, 2014, 349–373.

## II. Books / Volumes

1. J. F. Nash, Jr. and M. Th. Rassias (eds.), *Open Problems in Mathematics*, Springer, New York, 2016.
2. M. Th. Rassias, *Goldbach's Problem: Selected Topics*, Springer, New York, 2017.
3. H. L. Montgomery, A. Nikeghbali and M. Th. Rassias (eds.), *Exploring the Riemann Zeta Function: 190 years from Riemann's birth*, (Preface by Freeman J. Dyson), Springer, New York, 2017 (to appear).
4. M. Th. Rassias, *Harmonic Analysis and Applications*, Springer (under preparation).
5. M. Th. Rassias and L. Tóth, *Topics on Dedekind Sums, Hardy Sums, and Ramanujan Sums*, SpringerBriefs, Springer, New York (under preparation).
6. C. Pomerance and M. Th. Rassias (eds.), *Analytic Number Theory*, Springer, New York, 2015.
7. N. J. Daras and M. Th. Rassias (eds.), *Computation, Cryptography, and Network Security*, Springer, New York, 2015.
8. G. V. Milovanović and M. Th. Rassias (eds.), *Analytic Number Theory, Approximation Theory and Special Functions*, New York, 2014.
9. M. Th. Rassias, *Problem-Solving and Selected Topics in Number Theory: In the Spirit of the Mathematical Olympiads*, Springer, New York, 2011. (Foreword by Preda V. Mihăilescu)

## Teaching

- Functional Analysis, University of Zürich
- Analytic Number Theory, University of Zürich
- Topics in Analytic Inequalities, University of Zürich
- Elements of Analytic Number Theory, University of Zürich
- Algebra I, ETH-Zürich
- Prime Numbers I (Analytic Number Theory), ETH-Zürich
- Introduction to Number Theory, ETH-Zürich

## Conferences & Talks

1. Invited lecture at the National Technical University of Athens, June 9, 2017.
2. Conference on Approximation and Optimization: Algorithms, Complexity, and Applications, National and Kapodistrian University of Athens, Plenary lecture, June 29-30, 2017.
3. Analysis in the Large – Calculus of Variations, Dynamics, Geometry. In honor of Helmut Hofer, June 6-10, 2016.
4. 3<sup>rd</sup> International Conference on Cryptography, Cyber-Security and Information, May 26-27, 2016, ΣΣΕ, Athens, Greece (Opening Plenary lecture of the conference).
5. Frontiers in Analysis and Probability, March 3-4, 2016, University of Strasbourg, France.

6. Frontiers in Analysis and Probability, October 29-30, 2015, University of Zurich, Switzerland.
7. Celebration of the Life and Work of John F. Nash, Jr., Princeton University, October 24, 2015.
8. Elementary, Analytic, and Algorithmic Number Theory: In Honor of Carl Pomerance's 70th Birthday, University of Georgia, Athens, GA, June 9-11, 2015 (Invited. Talk delivered by Professor Helmut Maier on joint work).
9. Analysis, Spectra, and Number Theory, Princeton University, Department of Mathematics, December 15-19, 2014.
10. Workgroup Diophantine Analysis Seminar, Princeton University, Department of Mathematics, October 15, 2014 (Invited Talk).
11. Analytic Number Theory Workshop, July 9-23, 2014, Institut des Hautes Études Scientifiques (IHÉS), Bures-sur-Yvette, France.
12. EPFL/ETHZ Number Theory Days 2014, March 7-8, 2014, ETH-Zürich, Switzerland.
13. Number Theory and Galois Representations, December 21-22, 2013, SASTRA University, Srinivasa Ramanujan Centre, India (Invited Talk).
14. Analytic Number Theory, October 20-26, 2013, Mathematisches Forschungsinstitut Oberwolfach, Germany.
15. Number Theory Seminar, June 25, 2013, Department of Mathematics, University of Ulm, Germany (Invited Talk).
16. Second International Conference on Applications of Mathematics and Informatics, April 11-12, 2013, ΣΣΕ, Athens, Greece (Invited Talk).
17. Arithmetic & Geometry: 25 Years Number Theory Seminar, June 3-7, 2013, ETH-Zürich, Switzerland.
18. Equidistribution in Number Theory and Dynamics, March 18-22, 2013, ETH-Zürich, Switzerland.
19. EPFL/ETHZ Number Theory Days 2013, March 15-16, 2013, EPFL Lausanne, Switzerland.
20. EPFL/ETHZ Number Theory Days 2012, March 30-31, 2012, ETH-Zürich, Switzerland.
21. Ramanujan 125 Conference, November 5-7, 2012, University of Florida, USA (Invited Talk).
22. The International Jubileum Conference for the 60th birthday of Samuel J. Patterson: A Conference on Analytic Number Theory, July 26-August 2, 2009, Göttingen, Germany.
23. International Congress of Mathematicians, August 22-30, 2006, Madrid, Spain.

### **Grants & Scholarships**

1. Scholarship from the Hellenic National Scholarships Foundation (IKY), 2012-2014.
2. Scholarship from the Leventis Foundation, 2011-2012.
3. Scholarship from the A. S. Onassis Foundation, 2010-2011.
4. NTUA Grant for Academic Merit, 2008.
5. NTUA Rector's Council Grant of Excellence, 2006 and 2009.

## **Awards / Prizes**

1. Certificate of Special Recognition for contributions to Mathematics and its Applications, Hellenic Military Academy, 2016.
2. Notara Prize, Academy of Athens, 2014.
3. National Technical University of Athens Rector's Council Grant of Excellence, 2009
4. First Prize: József Wildt International Mathematical Competition, Brasov, Romania, 2008.
5. National Technical University of Athens Grant for Academic Merit, 2008.
6. C. Papakyriakopoulos Prize, National Technical University of Athens, 2007.
7. National Technical University of Athens Rector's Council Grant of Excellence, 2006-2007.
8. First Prize: József Wildt International Mathematical Competition, Brasov, Romania, 2005.
9. Silver Medal: 44th International Mathematical Olympiad (IMO), Tokyo, Japan, 2003.
10. First Prize (Gold Medal): 20th Pan-Hellenic Mathematical Olympiad "ARCHIMEDES", 2003
11. First Prize (Gold Medal): 63rd Pan-Hellenic Mathematical Competition "EUCLID", 2003
12. Silver Medal: 6th Junior Balkan Mathematical Olympiad, Targu Mures, Romania, 2002.
13. First Prize (Gold Medal): 19th Pan-Hellenic Mathematical Olympiad "ARCHIMEDES", 2002.

## **Member of Editorial Boards**

- Newsletter of the European Mathematical Society
- Journal of Mathematical Analysis
- The Australian Journal of Mathematical Analysis and Applications
- International Journal of Nonlinear Analysis and Applications
- Journal of Advances in Applied Mathematics

## **Reviewer**

- Mathematical Reviews
- Zentralblatt MATH

## **Referee**

- Acta Arithmetica
- Advances in Applied Clifford Algebras
- Advances in Difference Equations
- Applied Mathematics and Computation
- Applied Mathematics & Information Sciences Letters
- Bulletin of the Australian Mathematical Society
- Communications of the Korean Mathematical Society

- Complex Analysis and Operator Theory
- Computational and Applied Mathematics
- Integral Transforms and Special Functions
- International Journal of Analysis
- International Journal of Number Theory
- Jordan Journal of Mathematics & Statistics
- Journal of Applied Analysis
- Journal of Fixed Point Theory and Applications
- Journal of Inequalities and Applications
- Journal of Number Theory
- Indian Journal of Mathematics
- Kodai Mathematical Journal
- Linear and Multilinear Algebra
- Matematicki Vesnik
- Mathematical Communications
- Mathematische Nachrichten
- National Academy Science Letters
- Proceedings of the Steklov Institute of Mathematics
- Publications de l'Institut Mathématique (Beograd)
- Publicationes Mathematicae Debrecen
- Quarterly Journal of Mathematics
- Results in Mathematics
- Scientia, Series A: Mathematical Sciences
- SpringerPlus Journal
- Tokyo Journal of Mathematics
- Turkish Journal of Mathematics