Morten S. Risager
Curriculum Vitae

Department of Mathematical Sciences
University of Copenhagen
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Research Interests

Analytic number theory, Spectral theory of automorphic forms, Spectral deformations, Mathematical physics, Quantum chaos, Modular symbols, Eisenstein series, Riemann surfaces, Free groups. Lattice theory.

Education

Ph.D., Mathematics, June 18th 2003. University of Aarhus. Advisors: E. Balslev and A. B. Venkov. Thesis: *Automorphic forms and modular symbols*.

Cand. Scient, Jan 2001. U. of Aarhus. Mathematics (major) and Philosophy (minor).

Employment

7/2009–present	Associated professor (tenured) at the Dept. of Mathematical Sciences, U. of Copenhagen.
8/2008–6/2009	Assistant professor at University of Copenhagen
8/2005–7/2008	Steno Research Fellow at University of Aarhus.
8/2004–7/2005	Member at Institute for Advanced Study, Princeton.
8/2003–7/2004	Assistant professor (Adjunkt) at University of Aarhus.
6/2003–7/2003	Post Doc at Network in Mathematical Physics and Stochastics (MaPhySto), Aarhus.
1/2002–7/2002	Visiting scholar at Max Planck Institut for Mathematics in Bonn.

Qualifications

Evaluated qualified as "lektor" (Associate professor) at the University of Copenhagen (2009) and University of Aarhus (2006).

Grants etc.

Individual Sapere Aude grant "Automorphic forms and deformation" from FNU (2012-2015) – 1060 K €
Prof. T. Bonnesen and wife's award (2011) – 200 €
Part of Rammebevilling "Arithmetical group actions on symmetric spaces" from FNU (2011-2013) – 426 K €
Part of Rammebevilling "Spherical functions" from FNU (2009-2011) – 470K €.
Copenhagen University Faculty Research Grant (2008-2009) – 134 K €.
Steno Individual Research Grant from the Danish Research Council (FNU) (2005-08) – 235K €.
Carlsberg Individual Research Grant (2004-05) – 47K €.

Students/mentee

Postdoc
  Piotr Maciak (2014–2017)
  Anders Södergren (2013-2016)
  Oscar Marmon (2015-2017)

PhD
  Giacomo Cherubini, 2013–

Flemming von Essen, Automorphic forms - Multiplier Systems and Taylor Coefficients, 2011–2014

Jimi Lee Truelsen, Distribution results in automorphic forms and analytic number theory, 2005 – 2009. Received 2008 the Elite researchers travel award from the Danish Minister of Science, Technology and Development. 1st. postdoc in Cambridge.

Master projects
Jens Siegstad
Camilla Frantzen, 2014, The Bombieri-Vinogradov theorem.
Christina Slaatorn, 2013, Vinogradov's three prime theorem.
Bo Malling Christensen, 2012, The Lindelöf Conjecture.
Martin Damhus & Rune Bak, 2008, Tate's thesis.

Bachelor
Asbjørn Nordentoft, 2015, Gaps between primes
Anders Aagaard, 2015, The Bombieri-Vinogradov theorem
Bjarke Østergaard Nielsen, 2015, Dirichlets unit theorem
Hector Hougaard, 2015, The Hasse-Minkowski theorem
Rikke Langhede, 2014, Higher reciprocity laws
Mathilde Kjær Pedersen, 2014, The AKS algorithm
Kristoffer Holm Nielsen, 2014, Pell's equation and Archimedes' revenge.
Mathis Elmgaard Isaksen, 2013, Phragmen Lindelöf Princippet
Freja Elbro, 2013, Modular forms
Nilin Abrahamsen, 2013, A central limit theorem for the free group
Niels Andreas Hvitved, 2011, Billing-Mahlers theorem
Peter Humphries, 2009, Elementary proof of the prime number theorem.
Diana Bertelsen, 2007, The prime number theorem.
Jesper Vejgaard Knudsen, 2006, Primes in Arithmetic Progressions.

Selected talks

2015	Rencontre Daboussi, Institut Henri Poincaré, Paris
	Kolloquium, Göttingen
	Hamburg
2014	Analytic number theory workshop, Turku, Finland
2013	Arithmetic of modular forms and related topics, Copenhagen, Denmark
2012	Automorphic forms and L-functions, IMAR, Bucharest, Romania
	Holomorphic Day, Copenhagen, Denmark
2011	Oberwolfach, Germany
2010	75'th birthday conference for E. Balslev, University of Aarhus, Denmark
	Number theory seminar, Humboldt Universität, Berlin, Germany
2009	65'th birthday conference for R. Bruggeman, University of Utrecht, The Netherlands
	Number Theory Seminar, University of Copenhagen, Denmark
2008	60'th birthday conference for D. Hejhal, University of Uppsala, Sweden
	Number theory seminar, University of Bristol, England
	Math Colloquium, University of Copenhagen, Denmark
2007	Number theory seminar, U. of Tel Aviv, Israel.
	DNA seminar, U. of Uppsala, Sweden.
	Analysis seminar, U. of Aarhus, Denmark.
2006	Kolloquium Mathematische Physik, Clausthal, Germany.
	Differential Geometry and Lie Theory Seminar. CUNY Graduate Center, USA.
2005	Number theory Lunch seminar, Max Planck institute for Mathematics, Germany.
	Math Colloquium, Lehigh U., USA.
	Number theory seminar, Johns Hopkins U., USA.

2004	Differential Geometry and Analysis Seminar. CUNY Graduate Center, USA. Workshop on Spectral Theory and Automorphic Forms, CRM, Montreal, Canada.
2003	Topology seminar, U. of Aarhus, Denmark.
2002	Number theory lunch seminar, Max Planck institute for Mathematics, Germany.

Teaching and pedagogical studies

2014	Elementary number theory, Introduction to analytic number theory.
2013	Elementary number theory, Fuchsian groups and number theory.
2012	Introduction to analytic number theory,
2011	Linear Algebra, Fuchsian groups and number theory. Introduction to analytic number theory
2010	Linear Algebra, Elliptic curves
2009	Undergraduate course: Linear algebra (400+ students) Graduate course: Introduction to Analytic number theory, Took a one year "Higher Education Teaching and Teaching Practice Programme for assistant professors and post docs" at the University of Copenhagen
2008	Linear Algebra, Calculus TA
2006	Introduction to analytic number theory, Pedagogical course for mathematicians at Sandbjerg gods. 3 days. Organized by the University Educational Development Unit Aarhus. Teaching graduate course Introduction to analytic number theory.
2005	Advanced analysis.
2004	In charge of the Mathematical Laboratory, U. of Aarhus.
2003	In charge of the Mathematical Laboratory, U. of Aarhus Took pedagogics course for university lecturers at Sandbjerg gods. 4 days organized by the University Educational Development Unit Aarhus.
1995-2002	Teaching Assistant (Instructor), U. of Aarhus: Mat. α, Mat. β , Mat 10 (Linear Algebra), Mat 11 (Calculus), Algebra, Analysis (Lebesgue theory and real analysis), Geometry, Complex Analysis.

Professional services

Department Travel Board (2014–)

Department Council (2013–)

Department Library Board (2010–)

University Student Grant Board (2010–)

Department Teaching Board (2009–)

Biographical	Born May 20th 1973 in Frederikshavn, Denmark. Danish citizen. Married to Sigrid. Children: Karl (2001), Niels (2004), and Johan (2012).

Publications

[1] Morten S. Risager and Anders Södergren. Angles in hyperbolic lattices : The pair correlation density. *http://arxiv.org/abs/1409.5683*, 2014.

[2] Yiannis N. Petridis, Morten S. Risager, and with an appendix by Niko Laaksonen. Local average in hyperbolic lattice point counting. *http://arxiv.org/abs/1408.5743*, 2014.

[3] Yiannis N. Petridis, Nicole Raulf, and Morten S. Risager. Double Dirichlet series and quantum unique ergodicity of weight one-half Eisenstein series. *Algebra Number Theory*, 8(7):1539–1595, 2014.

[4] Yiannis N. Petridis, Nicole Raulf, and Morten S. Risager. Quantum Limits of Eisenstein Series and Scattering States. *Canad. Math. Bull.*, 56(4):814–826, 2013.

[5] Yiannis N. Petridis and Morten S. Risager. Dissolving of cusp forms: Higher order fermi's golden rule. *Mathematika*, 59(2):269–301, July 2013.

[6] Cormac O'Sullivan and Morten S. Risager. Non-vanishing of Taylor coefficients and Poincaré series. *Ramanujan J.*, 30(1):67–100, 2013.

[7] Yiannis N. Petridis and Morten S. Risager. Instability of cuspidal eigenvalues for hyperbolic surfaces. In Y. Gon and T. Moriyama, editors, *Automorphic forms, trace formulas and zeta functions*, volume 1767, pages 146–160. RIMS Kôkyûroku, 2011.

[8] Morten S. Risager. On Selberg's small eigenvalue conjecture and residual eigenvalues. *J. Reine Angew. Math.*, 656:179–211, 2011.

[9] Morten S. Risager and Richard Sharp. Pairs of periodic orbits with fixed homology difference. *Proc. Edinb. Math. Soc. (2)*, 53(3):799–808, 2010.

[10] Morten S. Risager and Jimi L. Truelsen. Distribution of angles in hyperbolic lattices. *Q. J. Math.*, 61(1):117–133, 2010.

[11] Yiannis N. Petridis and Morten S. Risager. Hyperbolic lattice-point counting and modular symbols. *Journal de Théorie des Nombres de Bordeaux*, 21(3):719–732, 2009.

[12] Morten S. Risager and Zeév Rudnick. On the statistics of the minimal solution of a linear Diophantine equation and uniform distribution of the real part of orbits in hyperbolic spaces. In *Spectral analysis in geometry and number theory*, volume 484 of *Contemp. Math.*, pages 187–194. Amer. Math. Soc., Providence, RI, 2009.

[13] Yiannis N. Petridis and Morten S. Risager. Equidistribution of geodesics on homology classes and analogues for free groups. *Forum Mathematicum*, 20(5):783–815, 2008.

[14] Yiannis N. Petridis and Morten S. Risager. Discrete logarithms in free groups. *Proc. Amer. Math. Soc.*, 134(4):1003–1012 (electronic), 2006.

[15] Yiannis N. Petridis and Morten S. Risager. The distribution of values of the Poincaré pairing for hyperbolic Riemann surfaces. *J. Reine Angew. Math.*, 579:159–173, 2005.

[16] Morten S. Risager. On the distribution of modular symbols for compact surfaces. *Int. Math. Res. Not.*, (41):2125–2146, 2004.

[17] Yiannis N. Petridis and Morten S. Risager. Modular symbols have a normal distribution. *Geom. Funct. Anal.*, 14(5):1013–1043, 2004.

[18] Morten S. Risager. Asymptotic densities of Maass newforms. *J. Number Theory*, 109(1):96–119, 2004.

Unpublished

[1] Morten S. Risager. On pairs of prime geodesics with fixed homology difference. Preprint arXiv.org:math/0604275, 2006.

[2] Morten S. Risager. *Automorphic forms and modular symbols*. PhD thesis, University of Aarhus, Feb 2003.

All papers can be accessed from `http://www.math.ku.dk/~risager/`

April 9, 2015