

Curriculum Vitae for Henrik L. Pedersen

Born in 1964, married, two children

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Working experience and education

2012 – Professor, Department of Mathematics, University of Copenhagen (KU).
2010 – 2012 Professor, Department of Basic Sciences and Environment (IGM), KU.
2002 – 2010 Associate professor, IGM.
January 1996 PhD, McGill University, Montréal, Canada. Advisor Paul Koosis.
January 1991 Cand. scient, KU. Advisor Christian Berg.

Grants, external funding and scholarships

Participation in “Complex Methods in Dynamical Systems and Special Functions” (Danish Research Council 2008–2010, 2011–2013), and in “Geometry and global analysis and applications” (1998–2006).

Fellowship from the Carlsberg Foundation (2001–2004). Scholarship (Danish Research Council) for studying at McGill University (1991–1995).

Scientific qualifications and international relations

Special functions, approximation theory, and orthogonal polynomials, methods from complex analysis. My publications include 35 published papers. Guest editor for Journal of Computational and Applied Mathematics (2005). Associate editor of Computational Methods and Function Theory (2014–).

Main organizer of “The Real Worls is Complex” (2015), Co-organization of two large meetings, “International Symposium on Orthogonal Polynomials and Special Functions – a Complex Analytic perspective” (2012) and “Seventh International Symposium on Orthogonal Polynomials, Special Functions and Applications” (2003), as well as “Workshop on Special Functions and their Applications” (2013), “Workshop on Integral Transforms, Positivity and Applications” (2010), and “Workshop on Orthogonal Polynomials, Hankel and Jacobi Matrices” (2009). These events were supported by the aforementioned grants, the Royal Academy of Sciences and Letters, NordForsk, and the Carlsberg Foundation.

Supervisor of Dimitrios Askitis (PhD student, 2015-2018). External examiner of a PhD thesis and supervision of masters and bachelor students.

Invited stay at the “Mittag-Leffler Institute”, Sweden (1999–2000). Invited lectures at the Danish Mathematical Society (1997), NORDAN, Norway (2001), “Difference Equations and Special Functions”, Germany (2002), “Conference in honor of Paul Koosis”, Canada (2003), “Complex Days of the North”, Iceland (2005), Lund-workshop, Sweden (2008), FoCM’11, Hungary (2011), and RIMS, Japan (2013).

Participation/talks at more than 15 international conferences and numerous seminars in Denmark.

Academic leadership

Head of research group at IGM (2006–2012). Acting head of department at IGM (November 2011–June 2012). Head of scientific committees for hiring associate professors.

List of publications

- [1] C. Berg and H. L. Pedersen. Nevanlinna extremal measures and zeros of entire functions. *Linear and Complex Analysis Problem Book 3, Part II*, V. P. Havin and N. K. Nikolski (Eds.). Springer, 1994, 89-91, *Lecture Notes in Mathematics* 1574.
- [2] H. L. Pedersen. The Nevanlinna matrix of entire functions associated with a shifted indeterminate Hamburger moment problem. *Math. Scand.* 74 (1994), 152-160.
- [3] C. Berg and H. L. Pedersen, On the order and type of the entire functions associated with an indeterminate Hamburger moment problem, *Ark. Mat.* 32 (1994), 1-11.
- [4] C. Berg and H. L. Pedersen, Nevanlinna matrices of entire functions, *Math. Nachr.* 171 (1995), 29-52.
- [5] H. L. Pedersen, Stieltjes moment problems and the Friedrichs extension of a positive definite operator, *J. Approx. Theory* 83 (1995), 289-307.
- [6] H. L. Pedersen, Uniform estimates of polynomials by logarithmic sums, Ph.D. thesis at McGill University 1996.
- [7] H. L. Pedersen, La paramétrisation de Nevanlinna et le problème des moments de Stieltjes indéterminé, *Expo. Math.* 15 (1997), 273-278.
- [8] H. L. Pedersen, Uniform estimates of entire functions by logarithmic sums, *J. Funct. Anal.* (146) 1997, 517-556.
- [9] H. L. Pedersen, Entire functions having small logarithmic sums over certain discrete subsets, *Ark. Mat.* (36) 1998, 119-130.
- [10] H. L. Pedersen, On Krein's theorem for indeterminacy of the classical moment problem, *J. Approx. Theory* (95) 1998, 90-100.
- [11] P. Koosis and H. L. Pedersen, Lower bounds on the values of an entire function of exponential type at certain integers, in terms of a least superharmonic majorant, *St. Petersburg Math. J.* 10 (1999), 429-439.
- [12] H. L. Pedersen, Entire functions and logarithmic sums over nonsymmetric sets of the real line, *Ann. Acad. Sci. Fenn. Math.* 25 (2000), 351-388.
- [13] C. Berg and H. L. Pedersen, A completely monotone function related to the Gamma function, *J. Comp. Appl. Math.* 133 (2001), 219-231.
- [14] C. Berg og H. L. Pedersen. Pick functions related to the Gamma function, *Rocky Mountain J. of Math.* 32, no. 2 (Summer 2002).
- [15] H. L. Pedersen. On estimates of entire functions of exponential type less than π in terms of logarithmic sums over Duffin and Schaeffer sequences, *Potential Analysis* 19, 2003, 251-260.

- [16] H. L. Pedersen. On estimation of polynomials in terms of logarithmic sums over powers of integers, *Rendiconti del Circolo Matematico di Palermo, Serie II, Suppl.* 68 (2002), 739-748.
- [17] H. L. Pedersen. Pick functions related to entire functions having negative zeros, *ETNA (Kent State University)* 27 (2007), 94-112. Internet: <http://etna.mcs.kent.edu/vol.27.2007/pp94-112.dir/pp94-112.pdf>
- [18] H. L. Pedersen. The double gamma function and related Pick functions, *J. Comp. Appl. Math.* 153 (2003), 361-369.
- [19] H. L. Pedersen. Canonical products of small order and related Pick functions, *J. Comp. Appl. Math.* 175 (2005), 245-263.
- [20] H. L. Pedersen. On the remainder in an asymptotic expansion of the double gamma function, *Mediterr. J. Math.* 2 (2005), 171-178.
- [21] H. L. Pedersen. Appendix in Per Hoerfelt "The Moment Problem for some Wiener Functionals; Corrections to Previous Proofs" (3 pages), *J. Appl. Probab.* 42 (2005), 851-860.
- [22] C. Berg and H. L. Pedersen. The Chen-Rubin conjecture in a continuous setting, *Methods and Applications of Analysis* 13 (2006), 63-88.
- [23] C. Berg and H. L. Pedersen (with an appendix by Walter Hayman). Logarithmic order and type of indeterminate moment problems, *Difference Equations, Special Functions and Orthogonal Polynomials (Proceedings)* World Scientific Publishing Co. Pte. Ltd. (2007), 51-80.
- [24] H. L. Pedersen. The remainder in Ruijsenaars' asymptotic expansion of Barnes double gamma function, *Mediterr. J. Math.* 4 (2007), 419-433.
- [25] C. Berg and H. L. Pedersen, Convexity of the median in the gamma distribution, *Ark. Mat.* 46 (2008), 1-6.
- [26] Anne Louise Gimsing, Jes Leisgaard Poulsen, Henrik L. Pedersen and Hans Christian Bruun Hansen, Formation and degradation kinetics of the biofumigant benzyl isothiocyanate in soil, *Environ. Sci. Technol.* 41 (2007), 4271-4276.
- [27] H. L. Pedersen, Logarithmic order and type of indeterminate moment problems II, *J. Comp. Appl. Math.* 233 (2009), 808-814.
- [28] S. Koumandos and H. L. Pedersen, Completely monotonic functions of positive order and asymptotic expansions of the logarithm of Barnes double gamma function and Euler's gamma function, *J. Math. Anal. Appl.* 355 (2009), 33-40.
- [29] S. Koumandos and H. L. Pedersen, On the asymptotic expansion of the logarithm of Barnes triple gamma function, *Math. Scand.* 105 no. 2 (2009), 287-306.
- [30] S. Koumandos and H. L. Pedersen, Absolutely monotonic functions related to Euler's gamma function and Barnes' double and triple gamma function, *Monatsh. Math.* (2011), 163:51-69.

- [31] H. L. Pedersen, Pre Stieltjes Functions, *Mediterr. J. Math.* 8 (2011), 113-122.
- [32] C. Berg and H. L. Pedersen, A one-parameter family of Pick functions defined by the Gamma function and related to the volume of the unit ball in n -space, *Proc. Amer. Math. Soc.* 139 (2011), no. 6, 2121–2132.
- [33] H. L. Pedersen, Completely monotonic functions related to logarithmic derivatives of entire functions, *Anal. Appl. (Singap.)* 9 (2011), no. 4, 409–419.
- [34] C. Berg and H. L. Pedersen, A Completely Monotonic Function Used in an Inequality of Alzer, *Comput. Methods and Funct. Theory* 12 (2012), 329-341.
- [35] S. Koumandos and H. L. Pedersen, Turán type inequalities for the partial sums of the generating functions of Bernoulli and Euler numbers, *Math. Nachr.* 285 (2012), 2129–2156 (DOI: 10.1002/mana201100299).
- [36] H. L. Pedersen, Extension of Inverses of Entire Functions of Genus 1 and 2 to the Upper Half Plane, *Comput. Methods Funct. Theory* 13 (2013), 263–275 (DOI 10.1007/s40315-013-0020-4).
- [37] H. L. Pedersen, Inverses of Gamma Functions, *Const. Approx.* 41 (2015), 251-267 (DOI 10.1007/s00365-014-9239-1).
- [38] H. L. Pedersen, Pick Functions as a Tool in the Theory of Special Functions, *RIMS Symposium series*, (to appear, mainly expository).
- [39] H. L. Pedersen and M. Uchiyama, Inverses of operator convex functions, in *Ordered Structures and Applications, Trends in Mathematics: Positivity VII* (Birkhäuser), 363-370.
- [40] H. L. Pedersen and S. Koumandos, On Asymptotic Expansions of Generalized Stieltjes Functions, *Comput. Methods Funct. Theory* 15 (2015), 93-115 (DOI 10.1007/s40315-014-0094-7).
- [41] G. Lyngsie, C.J. Penn, H.L. Pedersen, O.K. Borggaard and H.C.B. Hansen, Modelling of phosphate retention by Ca- and Fe-rich filter materials under flow-through conditions, *Ecological Engineering* 75 (2015), 93-102 (DOI: dx.doi.org/10.1016/j.ecoleng.2014.11.009).
- [42] H. L. Pedersen and S. Koumandos, On the Asymptotic Expansion of the Logarithm of Barnes Triple Gamma Function, II, *Math. Scand.* (to appear).