This file contains a cv and a list of publications

December 2019

SHORT CURRICULUM VITAE OF PETER SJÖGREN

Degree "filosofie kandidat" 1968 in mathematics and mathematical physics, University of Gothenburg.

Ph.D. 1972, in mathematics, University of Gothenburg.

Degree of "docent" 1978, Uppsala University.

From 1988 until retirement in 2015, full professor at the University of Gothenburg.

Since 2015, professor emeritus at the University of Gothenburg.

Previous employments:

Postdoc grant in Nancy, France 1972-73
Attaché de recherche at CNRS, Paris 1973– 76
Forskarassistent at Uppsala University 1976–80
Docent at Umeå University 1980–81
Docent at the University of Gothenburg 1982–87
Högskolelektor at the University of Gothenburg 1987–88

Guest professor at the University of Padova in Italy during 6 months of 2016 and 4 months of 2017.

I have supervised seven graduate students to their Ph.D., and another two to the licentiate degree.

Other merits:

Awarded Edlund's prize from the Swedish Academy of Sciences in 1990, shared with M. Benedicks.

President of the Swedish Mathematical Society 1991–93.

Secretary and vice chairman of the Swedish National Committee for Mathematics 1987–95 and 1995–98, respectively.

Deputy dean of the School of Mathematics and Computing Sciences in Göteborg 1991–97.

In charge of gender equality issues at the Faculty of Science of the University of Gothenburg 1997–2000.

Coordinator of the EU network "Harmonic Analysis" 1998–2002, involving 7 countries. Within this and other networks I received many European postdocs.

Conferences organised:

First Göteborg Conference in Harmonic Analysis, 1990

Second Göteborg Conference in Harmonic Analysis and Partial Differential Equations, 2001

Five times the "opponent" at Swedish and Finnish thesis presentations.

Member of the "Council against research misconduct" at the University of Gothenburg 2006–2012.

Head of the research group HAPDE (Harmonic Analysis and Partial Differential Equations) at the Göteborg mathematics department 1990–2015.

Editor of Arkiv för matematik 2006–2016.

December 2019

PETER SJÖGREN'S LIST OF PUBLICATIONS

Mathematical papers

1. Ett matrislemma till Cochrans sats. Nord. Mat. Tidskr. 16 (1968), 157-158.

2. Estimates of mass distributions from their potentials and energies. Ark. mat. 10 (1972), 59–77.

3. On the regularity of the distribution of the Fekete points of a compact surface in R^n. Ark. mat. 11 (1973), 147–151.

4. On the adjoint of an elliptic linear differential operator and its potential theory. Ark. mat. 11 (1973), 153–165.

5. Harmonic spaces associated with adjoints of linear elliptic operators. Ann. Inst. Fourier 25 (1975), 509–518.

6. La convolution dans L^1 faible de R^n. Séminaire CHOQUET (Initiation à l'analyse), 13e année 1973/74, no 14, 10 p.

7. Noyaux singuliers positifs et ensembles exceptionnels. Séminaire CHOQUET (Initiation à l'analyse), 14e année 1974/75, no 8, 23 p.

8. Une propriété des fonctions harmoniques positives, d'après Dahlberg. Séminaire de Théorie du Potentiel, Paris, no 2. Lecture Notes in Mathematics (Springer) 563 (1976), 275–282.

9. Weak L^1 characterizations of Poisson integrals, Green potentials, and H^p spaces. Trans. Amer. Math. Soc. 233 (1977), 179–196.

10. Solution fondamentale d'un opérateur différentiel en dimension infinie. C. R. Acad. Sci. Paris 283 (1976), 305–307.

11. Complément à la note Solution fondamentale d'un opérateur différentiel en dimension infinie. Manuscript, Uppsala 1977.

12. Un contre-exemple pour le noyau reproduisant de la mesure gaussienne dans le plan complexe. Séminaire Paul KRÉE (Équations aux dérivées partielles en dimension infinie), 2e année 1975/76, no 10, 2 p.

13. Generalized Poisson integrals in a half-space and weak L^1. J. London Math. Soc. (2) 27 (1983), 85–96.

14. Characterizations of Poisson integrals on symmetric spaces. Math. Scand. 49 (1981), 229–249.

15. On the convergence of bilinear and quadratic forms in independent random variables. Studia Math. 71 (1982), 285–296.

16. Convergence of Riemann sums for stochastic integrals. Z. Wahrscheinlichkeitstheorie verw. Geb. 56 (1981), 181–193.

17. Riemann sums for stochastic integrals and L^p moduli of continuity. Z. Wahrscheinlichkeitstheorie verw. Geb. 59 (1982), 411–424.

18. A remark on finite-dimensional topological vector spaces. Short manuscript, Uppsala 1980.

19. (With P. Sjölin) Littlewood-Paley decompositions and Fourier multipliers with singularities on certain sets. Ann. Inst. Fourier 31 (1981), 157–175.

20. A weak spectral synthesis property for Hardy and Lipschitz spaces. In Harmonic Analysis, Proceedings, Minneapolis 1981. Lecture Notes in Mathematics (Springer) 908 (1982), 285–296.

21. (With A. Jonsson and H. Wallin) Hardy and Lipschitz spaces on subsets of R^n. Studia Math. 80 (1984), 141–166.

22. A remark on bases in Hardy spaces. Canadian Math. Bull. 27 (1984), 360–364.

23. A remark on the maximal function for measures in R^n. Amer. J. Math. 105 (1983), 1231–1233.

24. On the maximal function for the Mehler kernel. In Harmonic Analysis, Proceedings, Cortona 1982. Lecture Notes in Mathematics (Springer) 992 (1983), 73–82. CPL 156997

25. A Fatou theorem and a maximal function not invariant under translation. Recent progress in Fourier analysis, North-Holland 1984, 215–220.

26. Fatou theorems and maximal functions for eigenfunctions of the Laplace-Beltrami operator in a bidisk. J. reine angew. Math. 345 (1983), 93–110.

27. A Fatou theorem for eigenfunctions of the Laplace-Beltrami operator in a symmetric space. Duke Math. J. 51 (1984), 47–56.

28. Une remarque sur la convergence des fonctions propres du Laplacien à valeur propre critique. In Théorie du Potentiel, Proceedings, Orsay 1983. Lecture Notes in Mathematics (Springer) 1096 (1984), 544–548.

29. (With S. Madan) Poisson integrals of absolutely continuous and other measures. Math. Proc. Cambridge Phil. Soc. 95 (1984), 141–147.

30. (With H. Carlsson and J.-O. Strömberg) Multiparameter maximal functions along dilation-invariant hypersurfaces. Trans. Amer. Math. Soc. 292 (1985), 335–343.

31. (Med H. Carlsson) Estimates for maximal functions along hypersurfaces. Ark. mat. 25 (1987), 1–14.

32. Admissible convergence of Poisson integrals in symmetric spaces. Ann. of Math. 124 (1986), 313–335.

33. Admissible convergence at the Furstenberg boundary. Séminaire d'Analyse Harmonique 1984/85, Exposé 5, Publications Mathématiques d'Orsay 1986-02.

34. Convergence for the square root of the Poisson kernel. Pacific J. Math. 131 (1988), 361–391.

35. Asymptotic behaviour of generalized Poisson integrals in rank one symmetric spaces and in trees. Ann. Scuola Norm. Sup. Pisa, Sc. Fis. e Mat. Serie IV, vol 15 (1988), 99–113.

36. (With F. Ricci) Two-parameter maximal functions in the Heisenberg group. Math. Z. 199 (1988), 565–575.

37. (With P. Sjölin) Convergence properties for the time-dependent Schrödinger equation. Ann. Acad. Sci. Fenn. Ser. A I 14 (1989), 13–25.

38. How to recognize a discrete maximal function. Indiana Math. J. 37 (1988), 891–898.

39. (With S. Giulini) A note on maximal functions on a solvable group. Arch. Math. (Basel) 55 (1990), 156–160.

40. (With P. Sjölin) A maximal function estimate for the time-dependent Schrödinger equation with small potential. Research Report 1988-11, Dept. of Math., Chalmers University of Technology and University of Göteborg.

41. Translation-invariant operators on weak L^1. J. Funct. Anal. 89 (1990), 410–427.

42. (With M. Picardello) The minimal Martin boundary of a Cartesian product of trees. Proc. Centre Math. Anal., Australian Nat. Univ. 16 (1988), 226–246.

43. (With P. Sjölin) Local regularity of solutions to time-dependent Schrödinger equations with smooth potentials. Ann. Acad. Sci. Fenn. Ser. A I 16 (1991), 3-12.

44. Convolutors on Lorentz spaces $L^{1,q}$, $1 < q < \infty$. Proc. London Math. Soc. (3) 64 (1992), 397–417.

45. (With M. Picardello) Boundary behaviour of eigenfunctions of the Laplacian in a bitree. J. reine angew. Math. 424 (1992), 137–148.

46. A direct proof of an interpolation formula for Lorentz spaces. Preprint 1990-06, Dept. of Math., Chalmers University of Technology and University of Göteborg.

47. (With F. Soria) Weak type (1,1) estimates for some integral operators related to rough maximal functions. Israel J. Math. 95 (1996), 211–229.

48. (With G.I. Gaudry and T. Qian) Singular integrals associated to the Laplacian on the affine group $ax + b$. Ark. mat. 30 (1992), 259–281.

49. (With F. Soria) Rough maximal functions and rough singular integral operators applied to integrable radial functions. Revista Math. Iberoamer. 13 (1997), 1–18.

50. (With L. Colzani) Translation-invariant operators on Lorentz spaces $L(1, q)$ with $0 < q < 1$. Studia Math. 132 (1999), 101–124.

51. (With G. Gaudry) Singular integrals on Iwasawa NA groups of rank 1. J. reine angew. Math. 479 (1996), 39–66.

52. (With G. Gaudry) Singular integrals on the complex affine group. Colloq. Math. 75 (1998), 133–148.

53. An estimate for a first-order Riesz operator on the affine group. Trans. Amer. Math. Soc. 351 (1999), 3301–3314.

54. (With J. García-Cuerva, G. Mauceri and J. L. Torrea) Higher-order Riesz operators for the Ornstein-Uhlenbeck semigroup. Potential Anal. 10 (1999), 379–407.

55. Operators associated with the Hermite semigroup - a survey. Harmonic Analysis and PDE. Proceedings of a conference held at El Escorial, Spain, in June 1996. J. Fourier Anal. Appl. 3, Special issue (1997), 813–823.

56. Approach regions for the square root of the Poisson kernel and bounded functions. Bull. Austral. Math. Soc. 55 (1997), 521–527.

57. (With G. Gaudry) Haar-like expansions and boundedness of a Riesz operator on a solvable Lie group. Math. Z. 232 (1999), 241–256.

58. (With J. García-Cuerva, G. Mauceri and J. L. Torrea) Spectral multipliers for the Ornstein-Uhlenbeck semigroup. J. d'Analyse Math. 78 (1999), 281–305.

59. Riesz transforms on Iwasawa NA groups – a survey. To appear in Proceedings, 1999 Instructional Conference "Analysis on Lie Groups & Partial Differential Equations" ICMS, Edinburgh, April 7-16, 1999. [It seems that these proceedings will never be published.]

60. (With L. Forzani, R. Scotto and W. Urbina) On the L^p boundedness of the non-centered Gaussian Hardy-Littlewood maximal function. Proc. Amer. Math. Soc. 130 (2002), 73–79.

61. (With J. García-Cuerva, G. Mauceri, S. Meda and J. L. Torrea) Functional calculus for the Ornstein-Uhlenbeck semigroup. J. Funct. Anal. 183 (2001), 413–450.

62. (With J. García-Cuerva, G. Mauceri, S. Meda and J. L. Torrea) Maximal operators for the holomorphic Ornstein-Uhlenbeck semigroup. J. London Math. Soc. (2) 67 (2003), 219–234.

63. (With F. Soria) Sharp estimates for the non-centered maximal operator associated to Gaussian and other radial measures. Adv. Math. 181 (2004), 251–275.

64. Maximal operators related to the Ornstein-Uhlenbeck semigroup with complex time parameter. J. Funct. Anal. 237 (2006), 675–688.

65. (With G. Mauceri and S. Meda) Sharp estimates for the Ornstein-Uhlenbeck operator. Ann. Scuola Norm. Sup. Pisa Cl. Sci. (5), Vol. III (2004), 447–480.

66. (With J.-Ph. Anker and G. Gaudry) Boundedness of some Riesz operators on the NA group of $SL(3, C)$. Preprint 2004.

67. (With A. Nowak) Riesz transforms for Jacobi expansions. J. Anal. Math. 104 (2008), 341–369.

68. (With A. Nowak) Weak type (1, 1) estimates for maximal operators associated with various multi-dimensional systems of Laguerre functions. Indiana Univ. Math. J. 56 (2007), 417–436.

69. (With M. Vallarino) Boundedness from H^1 to L^1 of Riesz transforms on a Lie group of exponential growth. Ann. Inst. Fourier 58 (2008), 1117–1151.

70. (With S. Meda and M. Vallarino) On the $H^1 - L^1$ boundedness of operators. Proc. Amer. Math. Soc. 136 (2008), 2921–2931.

71. (With A. Nowak) The multi-dimensional pencil phenomenon for Laguerre heat-diffusion maximal operators. Math. Ann. 344 (2009), 213–248.

72. (With S. Meda and M. Vallarino) Atomic decompositions and operators on Hardy spaces. Rev. Un. Mat. Argentina 50:2 (2009), 15–22.

73. (With J.L. Torrea) On the boundary convergence of solutions to the Hermite-Schrödinger equation. Colloq. Math. 118 (2010), 161–174.

74. (With G. Mauceri and S. Meda) A maximal function characterization of the Hardy space for the Gauss measure. Proc. Amer. Math. Soc. 141 (2013), 1679–1692.
arXiv:1006.5551

75. (With G. Mauceri and S. Meda) Endpoint estimates for first-order Riesz transforms associated to the Ornstein-Uhlenbeck operator. Rev. Math. Iberoamericana 28.1 (2012), 77–91.
arXiv:1002.1240v1

76. (With A. Nowak) Calderón-Zygmund operators related to Jacobi expansions. J. Fourier Anal. Appl. 18:4 (2012), 717–749.
arXiv:1011.3615

77. (With A. Criado) Bounds for maximal functions associated with rotational invariant measures in high dimensions. J. Geom. Anal. 24 (2014), no. 2, 595-612.
arXiv:1111.4358

78. (With M. Vallarino) Heat maximal function on a Lie group of exponential growth. Ann. Acad. Sci. Fenn. 37 (2012), 491–507.
arXiv:1110.1713

79. (With A. Nowak) Sharp estimates of the Jacobi heat kernel. Studia Math. 218 (3) (2013), 219–244.
arXiv:1111.3145

80. (With A. Nowak and T.Z. Szarek) Analysis related to all admissible type parameters in the Jacobi setting. Constructive approximation 41 (2) (2015), 185-218, DOI 10.1007/s00365-015-9275-5.
arXiv:1211.3270

81. (With L. Liu) A characterization of the Gaussian Lipschitz space and sharp estimates for the Ornstein-Uhlenbeck Poisson kernel. To appear in Revista Math. Iberoamer.
arXiv:1401.4288

82. (With H.-Q. Li and Y.Wu) Weak type (1,1) of some operators for the Laplacian with drift. To appear in Math. Z. DOI 10.1007/s00209-015-1555-z.

83. (With M. Kemppainen and J.L. Torrea) Wave extension problem for the fractional Laplacian. Preprint 2014. Discrete and Continuous Dynamical Systems - Series A 35 (10) (2015), 4905 - 4929, DOI:10.3934/dcds.2015.35.4905.
arXiv:1410.6051v1

84. (With L. Liu) On the global Gaussian Lipschitz space. To appear in Proc. Edinb. Math. Soc.
arXiv:1504.03554

85. (With H.-Q. Li) Weak type $(1,1)$ for some operators related to the Laplacian with drift on real hyperbolic spaces. Potential Anal. 46 (2017) 463–484. DOI 10.1007/s11118-016-9590-x

86. (With A. Nowak and T.Z. Szarek) Maximal operators of exotic and non-exotic Laguerre and other semigroups associated with classical orthogonal expansions. Adv. Math. 318 (2017), 307–354. DOI 10.1016/j.aim.2017.07.026

87. (With H.-Q. Li) Sharp endpoint estimates for some operators associated with the Laplacian with drift in Euclidean space. Preprint 2017.
arXiv:1701.04936

88. (With V. Casarino and P. Ciatti) The maximal operator of a normal Ornstein–Uhlenbeck semigroup is of weak type (1,1).. To appear in Ann. Sc. Norm. Super. Pisa Cl. Sci. (5).
arXiv:1705.00833

89. (With A. Nowak and T.Z. Szarek) Sharp estimates of the spherical heat kernel. To appear in J. Math. Pures Appl.
arXiv 1802.09385

90. (With T.Z. Szarek) Analysis in the multidimensional ball. Mathematika 65 (2019), 190–212.
arXiv 1803.06195

91. (With V. Casarino and P. Ciatti) On the maximal operator of a general Ornstein–Uhlenbeck semigroup. Preprint 2019.
arXiv 1901.04823

92. (With A. Nowak and T.Z. Szarek) Genuinely sharp heat kernel estimates on compact rank-one symmetric spaces, for Jacobi expansions, on a ball and on a simplex. Preprint 2019.
arXiv:1905.10581

93. (With T. Bruno) On the Riesz transforms for the inverse Gauss measure.
arXiv 1906.03827

Writings with didactic purposes etc.

A. (With C. Wrobel) Olympiades suédoises 1961–1968. Soc. Math. de France 1973. Translation into French of problems and solutions for a Swedish high-school contest.

B. Sammanhangsfria grammatikor och ändliga automater. Manuscript, Uppsala 1980.

C. Lectures on atomic H^p space theory in R^n. Report 1981:5, Dept. of Math., Univ. of Umeå;
http://www.chalmers.se/math/SV/kontakt/personal/larare-och-forskare/sjogren-peter

D. Grundläggande harmonisk analys i R^n. Lecture Notes, Göteborg 1983.

E. Introduction aux intégrales de Poisson dans les espaces symétriques. Publications de l'I.R.M.A. no 3, Avril 1986, Univ. Nat. de Côte d'Ivoire.

F. Riemannska symmetriska rum. Lecture notes written by J. Råde, Göteborg 1987.

G. Om forskarhandledning. Manuscript discussing thesis supervision, Göteborg 1988.

H. Kurvlängd och geometri på en sfärisk yta. (For last year high-school students' individual work.) In Välj specialarbete i matematik, ed. D. Laksov, Institut Mittag-Leffler, THD AB, Bandhagen 1989.

I. En matematikers syn på svensk skolmatematik. Lecture given at the Mathematics Biennal in Göteborg 1992. Nämnaren 19:3 (1992), 12-19.

J. Topologiska vektorrum. Lecture notes written by M. Wängefors, Göteborg 1995.

K. Ornstein-Uhlenbeck theory in finite dimension. Lecture notes written by A. Andersson, Göteborg 2012. CPL 162696