

# Publications of Michael Langenbruch

74) *P. Domański and M. Langenbruch*, Surjectivity of Euler type differential operators on spaces of smooth functions, preprint 2016.

73) *P. Domański and M. Langenbruch*, Multiplier projections on spaces of real analytic functions in several variables, *Complex Var. Elliptic Equ.*, to appear.

72) *P. Domański and M. Langenbruch*, Euler type partial differential operators on real analytic functions, *J. Math. Anal. Appl.* **443** (2016), 652–674.

71) *M. Langenbruch*, On the diametral dimension of weighted spaces of analytic germs, *Studia Math.* **233**(1) (2016), 85–100.

70) *P. Domański and M. Langenbruch*, Interpolation of holomorphic functions and surjectivity of Taylor coefficient multipliers, *Adv. Math.* **293** (2016), 782–855.

69) *P. Domański, M. Langenbruch and D. Vogt*, Hadamard type operators on spaces of real analytic functions in several variables, *J. Funct. Anal.* **269**(12) (2015), 3868–3913.

68) *P. Domański and M. Langenbruch*, Hadamard multipliers of spaces of real analytic functions, *Adv. Math.* **240** (2013), 575–612.

67) *M. Langenbruch*, Convolution operators on spaces of real analytic functions, *Math. Nachr.* **286**, Issue 8-9, (2013), 908–920.

66) *M. Langenbruch*, Bases in spaces of analytic germs, *Ann. Polon. Math.* **106** (2012), 223–243.

65) *P. Domański and M. Langenbruch*, Algebra of multipliers on the space of real analytic functions of one variable, *Studia Math.* **212**, No. 2, (2012) 155–171.

64) *P. Domański and M. Langenbruch*, Representation of multipliers on spaces of real analytic functions, *Analysis* **32** (2012), 137–162.

63) *P. Domański and M. Langenbruch*, On the abstract Cauchy problem for operators in locally convex spaces, *Rev. R. Acad. Cien. Serie A.Mat.* **106**, No. 2, (2012), 247–273.

62) *P. Domański, M. Golinski and M. Langenbruch*, A note on composition operators on spaces of real analytic functions, *Ann. Pol. Math.* **103**, No. 2, (2012), 209–216.

61) *M. Langenbruch*, Asymptotic Fourier and Laplace transformation for hyperfunctions, *Stud. Math.* **205**, No. 1, (2011), 41–69.

60) *M. Langenbruch*, Continuous linear decomposition of analytic functions, *Bull. Belg. Math. Soc. - Simon Stevin* **18**, No. 3, (2011), 543–555.

59) *M. Langenbruch*, Extension of Sato's hyperfunctions, *Funct. Approx. Comment. Math.* **44**, No. 1, (2011), 33–44.

58) *P. Domański and M. Langenbruch*, On the Laplace transform for vector valued hyperfunctions, *Funct. Approx. Comment. Math.*, **43**, No. 2, (2010), 129–159.

57) *M. Langenbruch*, Characterization of surjective convolution operators on Sato' hyperfunctions, *Banach Center Publ.* **88** (2010), 185–193.

56) *M. Langenbruch*, Right inverses for differential operators on Fourier ultra-hyperfunctions and the property (DN), *Contemp. Math.* **481** (2009), 81–104.

55) *P. Domański and M. Langenbruch*, Vector valued hyperfunctions and boundary values of vector valued harmonic and holomorphic functions, *Publ. Res. Inst. Math. Sci.* **44(4)** (2008), 1097-1142.

54) *M. Langenbruch*, Right inverses for partial differential operators on Fourier hyperfunctions, *Studia Math.* **183(3)** (2007), 273–299.

53) *M. Langenbruch*, Generalized Fourier expansion in kernels of convolution operators on Fourier hyperfunctions, *Analysis München* **27(2-3)** (2007), 227–249.

52) *M. Langenbruch*, Division problems for Fourier ultra-hyperfunctions, *Bull. Belg. Math. Soc.-Simon Stevin* **14(3)** (2007), 521–530.

51) *P. Domanski and M. Langenbruch*, Composition operators with closed image on spaces of real analytic functions, *Bull. London Math. Soc.* **38(4)** (2006), 636–646.

50) *M. Langenbruch*, Hermite functions and weighted spaces of generalized functions, *Manuscripta Math.* **119** (2006) 269–285.

49) *M. Langenbruch*, Surjective partial differential operators on real analytic functions defined on a half space, *Note Mat.* **25(2)** (2005/2006) 39–56.

48) *P. Domanski and M. Langenbruch*, Coherent analytics sets and composition of real analytic functions, *J. Reine Angew. Math.* **282** (2005) 41–59.

- 47) *M. Langenbruch*, Inheritance of surjectivity for partial differential operators on spaces of real analytic functions, *J. Math. Anal. Appl.* **297** (2004) 696–719.
- 46) *M. Langenbruch*, Characterization of surjective partial differential operators on spaces of real analytic functions, *Studia Math.* **162(1)** (2004) 53–96.
- 45) *P. Domanski and M. Langenbruch*, Composition operators on spaces of real analytic functions, *Math. Nachr.* **254-255** (2003) 68–86.
- 44) *M. Langenbruch*, A general approximation theorem of Whitney type, *Rev. R. Acad. Cien. Serie A. Mat* **97(2)** (2003) 287–303.
- 43) *M. Langenbruch*, Laurent series expansion for solutions of hypoelliptic equations, *Ann. Polon. Math.* **78.3** (2002) 277–289.
- 42) *M. Langenbruch and J. Voigt*, On Banach spaces invariant under differentiation, *Bull. Soc. Roy. Sci. Liege* **69** (2000) 383–393.
- 41) *M. Langenbruch*, Solvability of systems of partial differential equations for functions defined on nonconvex sets, *Arch. Math.* **75** (2000) 358–369.
- 40) *M. Langenbruch*, Surjective partial differential operators on real analytic functions defined on open convex sets, *Manuscripta Math.* **103** (2000) 241–263.
- 39) *M. Langenbruch*, Localization of partial differential operators and surjectivity on real analytic functions, *Studia Math.* **140(1)** (2000) 15–40.
- 38) *M. Langenbruch*, Analytic extension of smooth functions, *Result. Math.* **36** (1999) 281–296.
- 37) *M. Langenbruch*, Surjectivity of partial differential operators on Gevrey classes and extension of regularity, *Math. Nachr.* **196** (1998) 103–140.
- 36) *M. Langenbruch*, Extension of analyticity for solutions of partial differential operators, *Note Math.* **17** (1997) 29–59.
- 35) *M. Langenbruch*, Surjectivity of partial differential operators on Gevrey classes and their localizations at infinity, *Lin. Top. Spaces and Compl. Anal.* **3** (1997) 95–111.
- 34) *M. Langenbruch*, Surjective partial differential operators on spaces of ultradifferentiable functions of Roumieu type, *Result. Math.* **29** (1996) 254–275.
- 33) *M. Langenbruch*, Continuation of Gevrey regularity for solutions of partial differential operators, in "Functional analysis", S. Dierolf et al. (Edn.), 249–280, W. de Gruyter

1996.

32) *M. Langenbruch*, Continuous linear right inverses for partial differential operators, *Diss. Math.* **140** (1995), 163-181.

31) *M. Langenbruch*, Hyperfunction fundamental solutions of surjective convolution operators on real analytic functions, *J. Functional Anal.* **131** (1995) 78–93.

30) *M. Langenbruch*, Continuous linear right inverses for convolution operators in spaces of real analytic functions, *Studia Math.* **110** (1994) 65–82.

29) *M. Langenbruch*, Extension of ultradifferentiable functions, *Manuscripta Math.* **83** (1994) 123-143.

28) *M. Langenbruch*, Differentiable functions and the  $\bar{\partial}$ -complex, in "Functional analysis", Bierstedt, Pietsch, Ruess, Vogt (Edn.), *Lecture Notes in Pure and Applied Math.* **150** (1994) 415-434.

27) *M. Langenbruch*, The splitting condition for the weighted  $\bar{\partial}$ -complex, *Result. Math.* **22** (1992) 560-597.

26) *M. Langenbruch and S. Momm*, Complemented submodules in weighted spaces of analytic functions, *Math. Nachr.* **157** (1992) 263–276.

25) *M. Langenbruch*, Splitting of the  $\bar{\partial}$ -complex in weighted spaces of square integrable functions, *Rev. Mat. Univ. Complutense* **5** (1992), 201-223.

24) *M. Langenbruch*, Surjectivity of partial differential operators in classes of ultradifferentiable functions of Roumieu type, *Note Mat.* **10** Suppl. No. 2 (1990) 369-388.

23) *M. Langenbruch*, Real roots of polynomials and right inverses for partial differential operators in the space of tempered distributions, *Proc. Roy. Soc. Edinburgh* **114A** (1990) 169-179.

22) *M. Langenbruch*, Solution operators for partial differential equations in weighted Gevrey spaces, *Michigan Math. J.* **37** (1990) 3–24.

21) *M. Langenbruch*, Tame right inverses for partial differential equations, in "Advances in the Theory of Frechet-spaces", T. Terzioglu (Ed.), *NATO ASI Series (C)* **287** (1989) 79-114.

20) *M. Langenbruch*, Ultradifferentiable functions on compact intervals, *Math. Nachr.* **140** (1989) 109-126.

19) *M. Langenbruch*, Extension of ultradifferentiable functions of Roumieu type, *Arch.*

Math. **51** (1988) 353-362.

18) *M. Langenbruch*, Bases in spaces of ultradifferentiable functions with compact support, Math. Ann. **281** (1988) 31-42.

17) *M. Langenbruch*, Complemented kernels of partial differential operators in weighted spaces of (generalized) functions, Studia Math. **89** (1988) 37-63.

16) *M. Langenbruch*, Power series spaces and weighted solution spaces of partial differential equations, Math. Z. **194** (1987) 71-88.

15) *M. Langenbruch*, Bases in solution sheaves of systems of partial differential equations, J. Reine Angew. Math. **373** (1987) 1-36.

14) *M. Langenbruch*, Sequence space representations for weighted solution spaces of hypoelliptic systems of partial differential operators, Rend. Circ. Mat. Palermo **35** (1986) 169-202.

13) *M. Langenbruch*, Partial differential equations without solution operators in weighted spaces of (generalized) functions, Manuscripta Math. **56** (1986) 353-374.

12) *M. Langenbruch*, Sequence space representations for solution spaces of partial differential equations, Tr. J. Math. **10** (1986) 167-175.

11) *M. Langenbruch*, Kolmogorov diameters in solution spaces of systems of partial differential equations, Manuscripta Math. **53** (1985) 35-64.

10) *M. Langenbruch*, On the functional dimension of solution spaces of hypoelliptic partial differential operators, Math. Ann. **272** (1985) 217-229.

9) *M. Langenbruch*, Isomorphieklassen von Lösungsräumen partieller Differentialgleichungssysteme, Habilitationsschrift, Münster 1984.

8) *M. Langenbruch*, Fundamental solutions with partially bounded support, J. Math. Anal. Appl. **95(2)** (1983) 467-489.

7) *M. Langenbruch*, Differentiability and growth of solutions of partial differential equations, Manuscripta Math. **39** (1982) 297-312.

6) *M. Langenbruch*, Dualraum und Topologie der (lokal) langsam wachsenden Nulllösungen hypoelliptischer Differentialoperatoren Manuscripta Math. **32** (1980), 29-49.

5) *M. Langenbruch*, Darstellung von Distributionen endlicher Ordnung als Randwerte zu hypoelliptischen Differentialoperatoren, Math. Ann. **248** (1980) 1-17.

4) *M. Langenbruch*, Fortsetzung von Randwerten zu hypoelliptischen Differentialoperatoren und partielle Differentialgleichungen, *J. Reine Angew. Math.* **311/312** (1979) 57–79.

3) *M. Langenbruch*, P-Funktionale und Randwerte zu hypoelliptischen Differentialoperatoren, *Math. Ann.* **239** (1979) 55–74.

2) *M. Langenbruch*, Randverteilungen von Nulllösungen hypoelliptischer Differentialgleichungen, *Manuscripta Math.* **26** (1978) 17–35.

1) *M. Langenbruch*, Randwerte von Nulllösungen hypoelliptischer Differentialoperatoren, Dissertation, Mainz 1976.

Michael Langenbruch,  
Department of Mathematics,  
University of Oldenburg,  
D-26111 Oldenburg, GERMANY  
E-mail: Michael.Langenbruch@uni-oldenburg.de