Roland Schnaubelt March 20, 2020

Karlsruhe Institute of Technology, Department of Mathematics

1. Books, survey and expository papers (peer reviewed)

1. J. Prüss, R. Schnaubelt and Rico Zacher, *Mathematische Modelle in der Biologie. Deterministische homogene Systeme.* Birkhäuser, 2008.

2. R. Schnaubelt, *Semigroups for nonautonomous Cauchy problems.* In: K. Engel and R. Nagel, "One–Parameter Semigroups for Linear Evolution Equations," Springer-Verlag, 2000, pp. 477–496.

3. R. Schnaubelt, *Well–posedness and asymptotic behaviour of non–autonomous linear evolution equations.* In: A. Lorenzi and B. Ruf (Eds.), "Evolution Equations, Semigroups and Functional Analysis," Birkhäuser, 2002, pp. 311–338.

4. R. Schnaubelt, *Asymptotic behaviour of parabolic nonautonomous evolution equations.* In: M. Iannelli, R. Nagel and S. Piazzera (Eds.), "Functional Analytic Methods for Evolution Equations," Springer-Verlag, 2004, pp. 401–472.

2. Research papers (peer reviewed)

5. F. Räbiger and R. Schnaubelt, *The spectral mapping theorem for evolution semigroups on spaces of vector–valued functions.* Semigroup Forum **52** (1996), 225–239.

6. F. Räbiger, A. Rhandi and R. Schnaubelt, *Perturbation and an abstract characterization of evolution semigroups.* J. Math. Anal. Appl. **198** (1996), 516–533.

7. G. Nickel and R. Schnaubelt, *An extension of Kato's stability condition for nonautonomous Cauchy problems.* Taiwanese J. Math. **2** (1998), 483–496.

8. Y. Latushkin, T. Randolph and R. Schnaubelt, *Exponential dichotomy and mild solutions of nonautonomous equations in Banach spaces.* J. Dynam. Differential Equations **10** (1998), 489–510.

9. Nguyen Van Minh, F. Räbiger and R. Schnaubelt, *Exponential stability, exponential expansiveness, and exponential dichotomy of evolution equations on the half-line.* Integral Equations Operator Theory **32** (1998), 332–353.

10. F. Räbiger and R. Schnaubelt, *Absorption evolution families and exponential stability of non–autonomous diffusion equations.* Differential Integral Equations **12** (1999), 41–65.

11. R. Schnaubelt, *Sufficient conditions for exponential stability and dichotomy of evolution equations.* Forum Math. **11** (1999), 543–566.

12. A. Rhandi and R. Schnaubelt, *Asymptotic behaviour of a non-autonomous population equation with diffusion in L^1.* Discrete Contin. Dyn. Syst. **5** (1999), 663–683.

13. Y. Latushkin and R. Schnaubelt, *The spectral mapping theorem for evolution semigroups on L^p associated with strongly continuous cocycles.* Semigroup Forum **59** (1999), 404–414.

14. Y. Latushkin and R. Schnaubelt, *Evolution semigroups, translation algebras, and exponential dichotomy of cocycles.* J. Differential Equations **159** (1999), 321–369.

15. G. Lumer and R. Schnaubelt, *Local operator methods and time dependent parabolic equations on non-cylindrical domains.* In: M. Demuth, E. Schrohe, B.-W. Schulze and J.

Sjöstrand (Eds.), "Evolution Equations, Feshbach Resonances, Singular Hodge Theory," Mathematical Topics Vol. 16, Wiley, 1999, pp. 58–130.

16. R. Schnaubelt and J. Voigt, *The non–autonomous Kato class.* Arch. Math. **72** (1999), 454–460.

17. F. Räbiger, A. Rhandi, R. Schnaubelt and J. Voigt, *Non–autonomous Miyadera perturbations.* Differential Integral Equations **13** (2000), 341–368.

18. G. Metafune, A. Rhandi and R. Schnaubelt, *Spectrum of the infinite-dimensional Laplacian.* Archiv Math. **75** (2000), 280–282.

19. R. Schnaubelt, *A sufficient condition for exponential dichotomy of parabolic evolution equations.* In: G. Lumer and L. Weis (Eds.), "Evolution Equations and their Applications in Physical and Life Sciences (Proceedings Bad Herrenalb, 1998)," Marcel Dekker, 2001, pp. 149–158.

20. R. Schnaubelt, *Asymptotically autonomous parabolic evolution equations.* J. Evol. Equ. **1** (2001), 19–37.

21. J. Prüss and R. Schnaubelt, *Solvability and maximal regularity of parabolic evolution equations with coeffcients continuous in time.* J. Math. Anal. Appl. **256** (2001), 405–430.

22. G. Lumer and R. Schnaubelt, *Time–dependent parabolic problems on non–cylindrical domains with inhomogeneous boundary conditions.* J. Evol. Equ. **1** (2001), 291–309.

23. G. Gühring, F. Räbiger and R. Schnaubelt, *A characteristic equation for nonautonomous partial functional differential equations.* J. Differential Equations **181** (2002), 439–462.

24. G. Metafune, J. Prüss, A. Rhandi and R. Schnaubelt, *The domain of the Ornstein–Uhlenbeck operator on an L^p–space with invariant measure.* Ann. Scuola Norm. Sup. Pisa Cl. Sci. (5) **1** (2002), 471–485.

25. R. Schnaubelt, *Feedbacks for non–autonomous regular linear systems.* SIAM J. Control Optim. **41** (2002), 1141–1165.

26. L. Maniar and R. Schnaubelt, *Almost periodicity of inhomogeneous parabolic evolution equations.* In: G. Ruiz Goldstein, R. Nagel and S. Romanelli (Eds.), "Recent Contributions to Evolution Equations", Marcel Dekker, 2003, pp. 299–318.

27. R. Schnaubelt, *Parabolic evolution equations with asymptotically autonomous delay.* Trans. Amer. Math. Soc. **356** (2004), 3517–3543.

28. A. Bátkai and R. Schnaubelt, *Asymptotic behaviour of parabolic problems with delays in the highest order derivatives.* Semigroup Forum **69** (2004), 369–399.

29. Y. Latushkin, T. Randolph and R. Schnaubelt, *Regularization and frequency–domain stability of well–posed control systems.* Math. Control Signals Systems **17** (2005), 128–151.

30. G. Metafune, J. Prüss, A. Rhandi and R. Schnaubelt, *L^p–regularity for elliptic operators with unbounded coefficients.* Adv. Differential Equations **10** (2005), 1131–1164.

31. G. Metafune, D. Pallara, J. Prüss and R. Schnaubelt, *L^p-theory for elliptic operators on $\mathbb{R}^n$ with singular coefficients.* Z. Anal. Anwendungen **24** (2005), 497–521.

32. D. Di Giorgio, A. Lunardi and R. Schnaubelt, *Optimal regularity and Fredholm properties of abstract parabolic operators in L^p spaces on the real line.* Proc. London Math. Soc. **91** (2005), 703–737.

33. G. Metafune and R. Schnaubelt, *The domain of the Schrödinger operator $-\Delta + x^2y^2$.* Note Mat. **25** (2005/06), 97–103.

34. J. Prüss, A. Rhandi and R. Schnaubelt, *The domain of elliptic operators on $L^p(\mathbb{R}^d)$ with unbounded drift coefficients.* Houston J. Math. **32** (2006), 563–576.

35. R. Schnaubelt, *Exponential and polynomial dichotomies of operator semigroups in Banach spaces.* Studia Math. **175** (2006), 121–138.

36. A. Bátkai, K.–J. Engel, J. Prüss and R. Schnaubelt, *Polynomial asymptotic stability of operator semigroups.* Math. Nachr. **279** (2006), 1425–1440.

37. Y. Latushkin, J. Prüss and R. Schnaubelt, *Stable and unstable manifolds for quasilinear parabolic systems with fully nonlinear boundary conditions.* J. Evol. Equ. **6** (2006), 537–576.

38. B. Jacob and R. Schnaubelt, *Observability of polynomially stable systems.* Systems Control Lett. **56** (2007), 277–284.

39. L. Maniar and R. Schnaubelt, *The Fredholm alternative for parabolic evolution equations with inhomogeneous boundary conditions.* J. Differential Equations **235** (2007), 308–339.

40. Y. Latushkin, A. Pogan and R. Schnaubelt, *Dichotomy and Fredholm properties of evolution equations.* J. Operator Theory **58** (2007), 387–414.

41. S. Hadd, A. Rhandi and R. Schnaubelt, *Feedbacks for time varying regular linear systems with input and state delays.* IMA J. Math. Control Inform. **25** (2008), 85–110.

42. L. Maniar and R. Schnaubelt, *Robustness of Fredholm properties of parabolic evolution equations under boundary perturbations.* J. Lond. Math. Soc. (2) **77** (2008), 558–580.

43. Y. Latushkin, J. Prüss and R. Schnaubelt, *Center manifolds and dynamics near equilibria of quasilinear parabolic systems with fully nonlinear boundary conditions.* Discrete Contin. Dyn. Syst. Ser. B **9** (2008), 595–633.

44. J. Prüss, R. Schnaubelt and Rico Zacher, *Global asymptotic stability of equilibria in models for virus dynamics.* Math. Model. Nat. Phenom. **3** (2008), 126–142.

45. M. Hieber, L. Lorenzi, J. Prüss, A. Rhandi and R. Schnaubelt, *Global properties of generalized Ornstein–Uhlenbeck operators on $L^p(\mathbb{R}^N, \mathbb{R}^N)$ with more than linearly growing coefficients.* J. Math. Anal. Appl. **350** (2009), 100–121.

46. M. Baroun, L. Maniar and R. Schnaubelt, *Almost periodicity and Fredholmity of parabolic evolution equations with inhomogeneous boundary values.* Integral Equations Operator Theory **65** (2009), 169–193.

47. G. Metafune, D. Pallara, P.J. Rabier and R. Schnaubelt, *Uniqueness for elliptic operators on $L^p(\mathbb{R}^N)$ with unbounded coefficients.* Forum Math. **22** (2010), 583–601.

48. M. Geissert, L. Lorenzi and R. Schnaubelt, *L^p–regularity for parabolic operators with unbounded time–dependent coefficients.* Ann. Mat. Pura Appl. (4) **189** (2010), 303–333.

49. R. Schnaubelt and M. Veraar, *Structurally damped plate and wave equations with random point force in arbitrary space dimensions.* Differential Integral Equations **23** (2010), 957–988.

50. R. Schnaubelt and G. Weiss, *Two classes of passive time–varying well–posed linear systems.* Math. Control Signals Systems **21** (2010), 265–301.

51. R. Schnaubelt and M. Veraar, *Stochastic equations with boundary noise.* In: J. Escher et.al. (Eds.), "Parabolic Problems: Herbert Amann Festschrift," Birkhäuser, 2011, pp. 609–629.

52. S. Fornaro, G. Metafune, D. Pallara and R. Schnaubelt, *Degenerate operators of Tricomi type in L^p–spaces and in spaces of continuous functions.* J. Differential Equations **252** (2012), 1182–1212.

53. M. Meyries and R. Schnaubelt, *Interpolation, embeddings and traces of anisotropic fractional Sobolev spaces with temporal weights.* J. Funct. Anal. **262** (2012), 1200–1229.

54. L. Maniar and R. Schnaubelt, *Stability of periodic solutions to parabolic problems with nonlinear boundary conditions.* Adv. Differential Equations **17** (2012), 557–604.

55. M. Meyries and R. Schnaubelt, *Maximal regularity with temporal weights for parabolic problems with inhomogeneous boundary conditions.* Math. Nachr. **285** (2012), 1032–1051.

56. S. Fornaro, G. Metafune, D. Pallara and R. Schnaubelt, *One-dimensional degenerate operators in L^p–spaces.* J. Math. Anal. Appl. **402** (2013), 308-318.

57. M. Baroun, B. Jacob, L. Maniar and R. Schnaubelt, *Semilinear observation systems.* Systems Control Lett. **62** (2013), 924–929.

58. R. Johnson, Y. Latushkin and R. Schnaubelt, *Reduction principle and asymptotic phase for center manifolds of parabolic systems with nonlinear boundary conditions.* J. Dynam. Differential Equations **26** (2014), 243–266.

59. R. Schnaubelt, *Center manifolds and attractivity for quasilinear parabolic problems with fully nonlinear dynamical boundary conditions.* Discrete Contin. Dyn. Syst. Ser. A **35** (2015), 1193–1230.

60. S. Fornaro, G. Metafune, D. Pallara and R. Schnaubelt, *Second order elliptic operators in L^2 with first order degeneration at the boundary and outward pointing drift.* Commun. Pure Appl. Anal. **14** (2015), 407–419.

61. M. Hochbruck, T. Jahnke and R. Schnaubelt, *Convergence of an ADI splitting for Maxwells equations.* Numer. Math. **129** (2015), 535–561.

62. D. Hundertmark, P. Kunstmann and R. Schnaubelt, *Stability of the dispersion managed solitons for vanishing average dispersion.* Archiv Math. **104** (2015), 283–288.

63. R. Denk and R. Schnaubelt, *A structurally damped plate equation with Dirichlet-Neumann boundary conditions.* J. Differential Equations **259** (2015), 1323–1353.

64. E.M. Ait Benhassi, S. Boulite, L. Maniar and R. Schnaubelt, *Polynomial internal and external stability of wellposed linear systems.* In: W. Arendt, R. Chill and Y. Tomilov (Eds.), "Operator Semigroups meet Complex Analysis, Harmonic Analysis and Mathematical Physics (Proceedings Herrnhut 2013)," Birkhäuser, 2015, pp. 1–16.

65. W. Dörfler, H. Gerner and R. Schnaubelt, *Local wellposedness of a quasilinear wave equation.* Appl. Anal. **95** (2016), 2110–2123.

66. L. Lorenzi, A. Lunardi and R. Schnaubelt, *Strong convergence of solutions to nonautonomous Kolmogorov equations.* Proc. Amer. Math. Soc. **144** (2016), 3903–3917.

67. J. Eilinghoff, R. Schnaubelt and K. Schratz, *Fractional error estimates of splitting schemes for the nonlinear Schrödinger equation.* J. Math. Anal. Appl. **442** (2016), 740–760.

68. R. Schnaubelt, *Stable and unstable manifolds for quasilinear parabolic problems with fully nonlinear dynamical boundary conditions.* Adv. Differential Equations **22** (2017), 541–592.

69. L. Maniar, M. Meyries and R. Schnaubelt, *Null controllability for parabolic problems with dynamic boundary conditions.* Evol. Equ. Control Theory **6** (2017), 381–407.

70. R. Schnaubelt and M. Veraar, *Regularity of stochastic Volterra equations by functional calculus methods.* J. Evol. Equ. **17** (2017), 523–536.

71. Y. Latushkin, R. Schnaubelt and Xinyao Yang, *Stable foliations near a traveling front for reaction diffusion systems.* Discrete Contin. Dyn. Syst. Ser. B. **22** (2017), 3145–3165.

72. T. Jahnke, M. Mikl and R. Schnaubelt, *Strang splitting for a semilinear Schrödinger equation with damping and forcing.* J. Math. Anal. Appl. **455** (2017), 1051–1071.

73. M. Hochbruck, T. Pažur and R. Schnaubelt, *Error analysis of implicit Runge–Kutta methods for quasilinear hyperbolic evolution equations.* Numer. Math. **138** (2018), 557–579.

74. P. D'Ancona, S. Nicaise and R. Schnaubelt, *Blow-up for nonlinear Maxwell equations.* Electron. J. Differential Equations 2018, paper No. 73, 9 pp.

75. J. Eilinghoff and R. Schnaubelt, *Error analysis of an ADI splitting scheme for the inhomogeneous Maxwell equations.* Discrete Contin. Dyn. Syst. Ser. A **38** (2018), 5685–5709.

76. Ł. Rzepnicki and R. Schnaubelt, *Polynomial stability for a system of coupled strings.* Bull. London Math. Soc. **50** (2018), 1117–1136.

77. J. Eilinghoff, T. Jahnke and R. Schnaubelt, *Error analysis of an energy preserving ADI splitting scheme for the Maxwell equations.* SIAM J. Numer. Anal. **57** (2019), 1036–1057.

78. S. Herr, T. Lamm and R. Schnaubelt, *Biharmonic wave maps into spheres.* Proc. Amer. Math. Soc. **148** (2020), 787–796.

79. M. Pokojovy and R. Schnaubelt, *Boundary stabilization of quasilinear Maxwell equations.* J. Differential Equations **268** (2020), 784–812.

80. S. Herr, T. Lamm, T. Schmid and R. Schnaubelt, *Biharmonic wave maps: Local wellposedness in high regularity.* Nonlinearity **33** (2020), 2270–2305.

81. I. Lasiecka, M. Pokojovy and R. Schnaubelt, *Exponential decay of quasilinear Maxwell equations with interior conductivity.* NoDEA Nonlinear Differential Equations Appl., to appear.

82. R. Schnaubelt and M. Spitz, *Local wellposedness of quasilinear Maxwell equations with absorbing boundary conditions.* Evol. Equ. Control Theory, to appear.

3. Submitted papers

83. J. Eilinghoff and R. Schnaubelt, *Error estimates in L^2 of an ADI splitting scheme for the inhomogeneous Maxwell equations.*

84. R. Schnaubelt and M. Spitz, *Local wellposedness of quasilinear Maxwell equations with conservative interface conditions.*

85. S. Fornaro, G. Metafune, D. Pallara and R. Schnaubelt, *L^p-spectrum of degenerate hypoelliptic Ornstein-Uhlenbeck operators.*