

Curriculum Vitae

Address

Karlsruhe Institute of Technology
Department of Mathematics, Institute of Analysis
76128 Karlsruhe, Germany
Phone: +49-(0)721-608-48955/43727, Fax: +49-(0)721-608-47650
E-mail: schnaubelt@kit.edu
Homepage: <http://www.math.kit.edu/iana3/~schnaubelt/en>

Personal data

Date of birth: 19 January 1966
Place of birth: Ludwigsburg, Germany
Nationality: German
Marital status: Married

Education

8/76–7/85 ‘Gymnasium’ (High school) in Ludwigsburg
2/86–9/87 Community Service (as alternative to Military Service)
10/88–9/90 Study of Mathematics and Physics in Stuttgart
10/90–9/94 Study of Mathematics, Physics, and Philosophy in Tübingen
Languages German, English, French

Degrees

21 Sep 90 Vordiplom in Mathematics, University of Stuttgart
6 Sep 94 Diplom in Mathematics, University of Tübingen
10 July 96 Dr. rer.nat. (Ph.D.) in Mathematics, Univ. of Tübingen. Title of thesis:
Exponential bounds and hyperbolicity of evolution families
26 July 00 Habilitation in Mathematics, University of Tübingen. Title of thesis:
Exponential dichotomy of non-autonomous evolution equations

Employment

10/94–9/96 Assistant (‘Wissenschaftlicher Angestellter’), University of Tübingen
10/96–2/97 Research Assistant, University of Tübingen
6/98–9/98 Research Assistant, University of Tübingen
10/98–3/00 Assistant Professor (‘Wissenschaftlicher Assistent’), Univ. of Tübingen
4/00–4/06 Assistant Professor (since 7/01 ‘Oberassistent’), University of Halle
since 5/06 Professor, Karlsruhe Institute of Technology (until 2009: University of Karlsruhe)

Scholarships

- 9/95–11/95 DAAD scholarship for a research visit in the U.S.
3/97–2/98 DFG research scholarship
10/07 Scholarship as Miller’s Scholar in Residence, University of Missouri

Research projects

1. Principal investigator of the projects
A4: Time integration of Maxwell and wave-type equations (with M. Hochbruck),
A5: Qualitative behavior of nonlinear Maxwell equations,
A13: Dispersive estimates for wave-type equations with low regularity coefficients (with D. Frey, since 01.07.21)
during the three funding periods of the Collaborative Research Centre 1173 *Wave phenomena: analysis and numerics* (07/15 - 06/27), funded by DFG (Germany). Speaker of the integrated research training group. In the first funding period (07/15 - 06/19) also principal investigator of B2: Dispersion Management (with D. Hundertmark) and B5: Biharmonic wave maps (with T. Lamm).
2. Member of the Research Training Group 1294 *Analysis, Simulation and Design of Nanotechnological Processes* (10/10–03/15), funded by DFG (Germany).
3. Project *Qualitative behavior of parabolic problems with nonlinear dynamical and static boundary conditions* (04/09 – 03/11), funded by DFG (Germany).
4. Co-organisor of the German–Moroccan cooperation projects *Functional analytic methods for partial functional differential equations* (04/01–03/03; 06/04–05/06) and *Functional analytic methods for evolution equations* (05/07–04/09; 01/11–12/12) with L. Maniar and A. Rhandi, Université de Marrakech, funded by DFG (Germany) and CNRST (Morocco).
5. Co-organisor of the US-German cooperation project *Center manifolds and stability of nonlinear partial differential equations* with Y. Latushkin, University of Missouri–Columbia (2004/05), funded by DAAD (Germany) and NSF (USA).
6. Co-organisor of the Marie Curie exchange program *Asymptotics of Operator Semigroups* (11/12–10/16).
7. Support of *7th Workshop on Control of Distributed Parameter Systems* in Wuppertal (Germany), 18–22 July 2011, by DFG. Main applicant: B. Jacob, Wuppertal.
8. Support of the conference *Evolution Equations: Randomness and Asymptotics* in Bad Herrenalb (Germany), 10–14 October 2011, by Volkswagen Foundation.
9. Support of the conference *Parabolic Evolution Equations, Harmonic Analysis and Spectral Theory* in Bad Herrenalb (Germany), 6–10 May 2019, by DFG.

Editorial activities

1. Member of editorial board of *Nonlinear Differential Equations and Applications (NoDEA)*, since 01/24.
2. Co-editor of the proceedings volumes:

- Nonlinear Evolution Equations: Analysis and Numerics. *Oberwolfach Rep.* **11** (2014), pp. 781–868.
- Mathematics of Wave Phenomena (Proceedings Karlsruhe, 2018). Birkhäuser, 2020.
- Wave Phenomena: Mathematical Analysis and Numerical Approximation. *Oberwolfach Seminars* **49**. Birkhäuser, 2023.

Other scholar activities

1. Co-organisator of the workshop *Evolutionsgleichungen und Operatorhalbgruppen*, 4–7 December 1997, Blaubeuren, Germany.
2. Co-organisator of the Internetseminars on *Evolution Equations and Semigroups* 1997/98, 1998/99 and 1999/00.
3. Co-organisator of the *TULKA Conference on Semigroups and Evolution Equations*, 13–17 June 2001, Blaubeuren.
4. Co-organisator of *European–Maghreb Workshops on Semigroup Theory, Evolution Equations and Applications* in Marrakesch, Marokko, 17–23 March 2002 and in Freudenstadt, Germany, 29 March – 2 April 2004.
5. Co-organisator of the session *Operator Semigroups and Evolution Equations* of the *Joint International Meeting UMI – DMV* in Perugia, Italy, 18–22 June 2007.
6. Organisator of the mini-workshop *Evolution Equations* in Karlsruhe, Germany, 24 June 2008.
7. Co-organisator of the workshop *Semigroups Everywhere* in Tübingen, Germany, 20–22 November 2008.
8. Co-organisator of the session *Stability of Partial Differential Equations and Evolution Equations* of the *8th AIMS Conference on Dynamical Systems, Differential Equations and Applications*, 25–28 May 2010, Dresden, Germany.
9. Co-organisator of the *International Conference on Evolution Equations* in Schmitten, Germany, 11–15 October 2010.
10. Co-organisator of the *7th Workshop on Control of Distributed Parameter Systems* in Wuppertal, Germany, 18–22 July 2011.
11. Co-organisator of the conference *Evolution Equations: Randomness and Asymptotics* in Bad Herrenalb, Germany, 10–14 October 2011.
12. Co-organisator of the *8th Euro–Maghreb Workshop on Evolution Equations* in Lecce, 11–15 June 2012.
13. Co-organisator of the 16th internet seminar *Operator Semigroups and Dispersive Equations*, 2012/13.
14. Co-organisator of the conference *Nonlinear Evolution Equations: Analysis and Numerics* at the Mathematical Research Institute Oberwolfach, 16–22 March 2014.
15. Co-organisator of the *9th Euro–Maghreb Workshop on Evolution Equations* in Marrakesh, 22–26 September 2014.

16. Co-organisor of the summer school *Wave phenomena: Analysis and Numerics* in Karlsruhe, 12–16 September 2016.
17. Co-organisor of the *10th Euro-Maghrebian Workshop on Evolution Equations* in Blaubeuren, 26–30 September 2016.
18. Co-organisor of the *Conference on Mathematics of Wave Phenomena 2018* in Karlsruhe, 23–27 July 2018.
19. Co-organisor of the conference *Parabolic Evolution Equations, Harmonic Analysis and Spectral Theory* in Bad Herrenalb, 6–10 May 2019.
20. Co-organisor of the seminar *Wave Phenomena: Analysis and Numerics* at the Mathematical Research Institute Oberwolfach, 24–30 November 2019.
21. Co-organisor of the *Conference on Mathematics of Wave Phenomena 2022* in Karlsruhe, 14–18 February 2022.
22. Member of the steering committee of the *Internet Seminars on Evolution Equations*.
23. Member of the steering committee of the *Euro-Maghrebian Workshops on Evolution Equations*.
24. Reviewer for Mathematical Reviews.
25. Member of the Deutschen Mathematiker Vereinigung (DMV), Germany, and the American Mathematical Society.

Advisor for Ph.D. and other theses

Bachelor theses

1. Konvergenz der Lösungen von Reaktionsgleichungen. (04/12)
2. Virendynamik. (06/12)
3. Konvergenz im Grundmodell der Populationsgenetik. (07/12)
4. Das Verhalten von zweidimensionalen Populationsgleichungen. (07/12)
5. Einführung in die Distributionentheorie. (10/12)
6. Biochemische Oszillationen. (03/13)
7. Die komplexe Interpolationsmethode. (04/13)
8. Exponentielle Stabilität bei stochastischen Differentialgleichungen. (07/13)
9. Der Taubersche Satz von Wiener und seine Anwendung auf den Primzahlsatz. (10/13)
10. Der Gelfandsche Darstellungssatz für kommutative Banachalgebren. (10/13)
11. Stabilität von Equilibria im Grundmodell der Populationsgenetik. (10/13)
12. Schrödinger Gleichung und Fouriertransformation. (08/15)
13. Reelle Interpolationsräume. (09/15)
14. Die Sätze von Paley–Wiener und Titchmarsh. (10/15)
15. Der Satz von Malgrange–Ehrenpreis. (11/15)
16. Die Schrödingergleichung mit zeitabhängigen Hamiltonoperator. (07/16)
17. Lyapunov-Funktionen und chemische Reaktionssysteme. (08/18)
18. Biochemische Oszillationen und das Theorem von Poincaré–Bendixson. (08/18)
19. Der Rieszsche Darstellungssatz für stetige Funktionale. (08/18)
20. Fixpunktsätze und das Haarsche Maß. (08/18)

21. Die Methode von Lojasiewicz. (08/18)
22. Epidemie- und Endemiemodelle. (09/18)
23. Die Hopf-Verzweigung. (10/18)
24. Die Liénard-Gleichung. (04/19)
25. Lyapunov-Funktionen und Stabilität. (04/19)
26. Das Theorem von Poincaré-Bendixson und der Jordansche Kurvensatz. (04/19)
27. Stone–Čech compactification. (01/20)
28. Der Riemannsche Abbildungssatz. (04/21)
29. Maße auf polnischen Räumen und Wassersteinmetriken. (10/21)
30. Das Momentenproblem. (11/21)
31. Anwendungen des Satzes von Hahn-Banach. (01/23)
32. Der Schaudersche Fixpunktsatz und der Satz von Lomonosov. (01/23)
33. Die Darstellung des Duals von $C(X)$ durch signierte Maße. (04/23)
34. Hausdorff-Maß und Dimension. (05/23)
35. Der Hardy-Raum $H^1(\mathbb{R}^d)$ und sein Dualraum $BMO(\mathbb{R}^d)$. (12/23)
36. Rekurrenz und Ergodizität. (01/24)
37. Der Mittelergodensatz. (03/24)
38. Der Satz von La Salle und mathematische Genetik. (04/24)
39. Pseudodifferentialoperatoren und das Calderon-Vaillancourt Theorem. (04/24)

Diploma and master theses

1. Qualitative Eigenschaften von Markovhalbgruppen. (12/07)
2. Lokale und globale Hopf-Bifurkation. (11/08)
3. Starke Stabilität und Fastperiodizität von Operatorhalbgruppen. (03/09)
4. The Model Theory for Hilbert Space Contractions. (04/10)
5. Hyperzyklische Operatoren und deren Punktspektrum. (07/10)
6. Virenmodell mit Diffusion. (08/11)
7. Ein Darstellungssatz für nichtabschließbare Sesquilinearformen. (09/11)
8. Convergence to an equilibrium in gradient systems and the Lojasiewicz–Simon inequality. (05/12)
9. Globale Existenz der Lösungen von Reaktionsdiffusionsgleichungen. (08/12)
10. Well-posedness and stability of damped nonlinear wave type equations. (02/13)
11. The asymptotic behavior of a malaria model with diffusion and incubation period. (03/13)
12. Global attractor for a chemotaxis model with prevention of overcrowding. (05/13)
13. Lyapunov’s second method for random dynamical systems. (11/13)
14. An invariant manifold for a critical nonlinear Schrödinger equation. (12/13)
15. Der Funktionalkalkül für Streifenoperatoren und das Transferenzprinzip für Operatorgruppen. (04/14)
16. Analytische Fortsetzung und Stabilität von Operatorhalbgruppen. (05/14)
17. Geometrische Ergodizität von stochastischen Differentialgleichungen mit degeneriertem Rauschen. (06/14)
18. Scattering and blow-up for the energy-critical focusing nonlinear Schrödinger equa-

tion. (08/14)

19. Lokale Wohlgestelltheit und Instabilität von wandernden Wellen in einem chemotaktischen Modell. (10/15)
20. Globale Wohlgestelltheit einer Klasse gekoppelter Maxwellgleichungen. (11/15)
21. Maximale Regularität einer strukturell gedämpften Plattengleichung mit inhomogenen Randbedingungen. (03/16)
22. Allgemein und polynomial halb gleichmäßige Stabilität von stark stetigen Operatorhalbgruppen. (12/16)
23. Stabilitätserhaltende diskretisierte Approximationen gedämpfter Wellengleichungen. (09/17)
24. Stabilität von Solitonen im Fermi-Pasta-Ulam Gitter. (06/18)
25. Taubersche Sätze und Raten für den Energieabfall in L^p . (07/18)
26. Oberflächenmaße in unendlich dimensionalen Banachräumen. (10/20)
27. Resolventenabschätzungen für magnetische Schrödingeroperatoren. (12/20)
28. Kontrollierbarkeit und Beobachtbarkeit konservativer Systeme. (09/21)
29. Fehleranalyse eines Fourier-Integrators für die kubische Schrödinger Gleichung. (05/22)
30. Spectrum and convergence of eventually positive operator semigroups. (10/22)
31. Local wellposedness of derivative nonlinear Schrödinger equations. (06/23)
32. Decay of contraction damped semigroups. (08/23)
33. Ein allgemeiner Zugang zur Approximation von Operator-Halbgruppen. (09/23)

Ph.D theses

1. Esther Bleich: Global properties of kernels of transition semigroups. (11/10)
2. Martin Meyries: Maximal regularity in weighted spaces, nonlinear boundary conditions, and global attractors. (11/10)
3. Dominik Müller: Well-posedness for a general class of quasi-linear evolution equations – with applications to Maxwell’s equations. (07/14)
4. Heiko Hoffmann: Descriptive characterisation of the variational Henstock–Kurzweil–Stieltjes integral and applications. (12/14)
5. Lars Machinek: Additive control and observation systems. (05/17)
6. Johannes Eilinghoff: Error analysis of splitting methods for wave type equations. (07/17)
7. Martin Spitz: Local wellposedness of nonlinear Maxwell equations. (07/17)
8. Andreas Geyer-Schulz: Maxwell–Schrödinger system: well-posedness and standing waves. (10/19)
9. Konstantin Zerulla: ADI schemes for the time integration of Maxwell equations. (12/20)
10. Richard Nutt: Decay of solutions to Maxwell equations with conductivity. (since 01/21)
11. Christopher Bresch: Maxwell equations with nonlinear retarded material laws. (since 04/21)
12. Maximilian Ruff: Strichartz estimates and error analysis of time integration schemes for wave-type equations. (since 07/22)