Björn Sandstede

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Academic Positions

- Alumni-Alumnae University Professor of Applied Mathematics, Brown University 2022-present
- Professor of Applied Mathematics, Brown University 2008-2022
- Research Professor, Department of Mathematics, University of Surrey 2004-2008
- Professor, Department of Mathematics, Ohio State University 2004-2005
- Associate Professor, Department of Mathematics, Ohio State University 2000-2004
- Assistant Professor, Department of Mathematics, Ohio State University 1997-2000
- Research Fellow, Weierstrass Institute for Applied Analysis and Stochastics 1993-1997
- Research Assistant, Interdisciplinary Center for Scientific Computing, University of Heidelberg 1990-1991

Education

- PhD degree (Dr rer nat) with Distinction, University of Stuttgart, Germany 1993
- Master's degree (Diplom) with Distinction, University of Heidelberg, Germany 1990

Honors, Awards, and Fellowships

- Fellow, American Mathematical Society 2025
- Barrett Hazeltine Citation for Excellence in Teaching, Guidance, and Support, Brown University 2022
- Royce Family Professor of Teaching Excellence, Brown University 2017-2020
- Graduate School Faculty Award for Advising and Mentoring, Brown University 2017
- Philip J Bray Award for Excellence in Teaching in the Physical Sciences, Brown University 2016
- Elsevier Jack K Hale Award 2014
- Comfort and Urry Prize for Leadership, Career Advising, and Motivation, Brown University 2014
- Fellow, Society for Industrial and Applied Mathematics 2013
- Outstanding Paper Prize, Society for Industrial and Applied Mathematics (with A Scheel) 2007
- Royal Society Wolfson Research Merit Award 2004
- JD Crawford Prize, SIAM Activity Group on Applied Dynamical Systems 2001
- Alfred P Sloan Research Fellowship 2000-2002
- Feodor Lynen Fellowship, Alexander von Humboldt Foundation 1995-1996
- Fellowship, DFG Graduiertenkolleg, University of Stuttgart 1990-1993
- Fellowship, Studienstiftung des Deutschen Volkes 1989-1990

Publications

- 140+ peer-reviewed journal articles (h-index: 39) published in mathematics journals (e.g., Mem Amer Math Soc, Numer Math, SIAM J Appl Dynam Syst, SIAM J Math Anal, Trans Amer Math Soc), science journals (e.g., J Roy Soc Interface, Nature Comm, Sci Adv, PNAS), and disciplinary journals (e.g., Biophys J, J Comp Biol, Genetics, PLOS Comp Biol)

Advising and Mentoring

- Served as advisor and mentor for 2 MSc students, 30 PhD students, and 24 postdoctoral fellows
- Worked with 71 undergraduate research students
- Served as advisor for 12 honors theses
- Served as first-year, sophomore, concentration advisor at Brown University
- Served as faculty advisor for APMA Directed Reading Program and SIAM Brown Student Chapter

Diversity, Equity, Inclusion, and Teaching

- Chair, Departmental DEI Committee 2020-2023
- Panelist, Breakout session *Best Practices for Building a Diverse and Inclusive Academic Curriculum*, Professional Development Day, Brown University 2018
- Panelist, Workshop *Facilitating Controversial Discussions*, Sheridan Center, Brown University 2017
- Offered an undergraduate course on *Race and Gender in the Scientific Community* 2017-2019
- Developed and offer a summer bridge program for incoming graduate students 2017-2018
- Co-facilitate IMSD module on *Demystifying the PhD Experience* 2017-2018
- Transformed dynamical systems course into a WRIT class that satisfies Brown's writing requirement 2017
- Use active-learning problem-solving sessions in introductory differential equations courses 2015-present
- I make an effort to mentor researchers from groups historically underrepresented in STEM: 41 of my undergraduate research students, 14 of my PhD students, and 10 of my postdoctoral fellows are women

Selected Grants

- Secured $72M in grant income at Brown University (including $7.8M as PI) 2008-present
- *Institute for Computational and Experimental Research in Mathematics (ICERM)* (PI: Hassett; Co-PIs: Gomez Serrano, Klivans, Pipher, Sandstede), National Science Foundation 2010-2030
- *RTG: Mathematics of Information and Data with Applications to Science* (PI: Sandstede; Co-PIs: Harrison, Klivans, Menon, Ramanan), National Science Foundation 2021-2026
- *RTG: Integrating Dynamics and Stochastics* (PI: Sandstede; Co-PIs: Dupuis, Menon, Ramanan, Rozovsky), National Science Foundation 2012-2019
- *T32 Predoctoral Training Program in Biological Data Science at Brown University* (PI: Ramachandran; Co-PIs: Huerta-Sanchez, Sandstede), National Institutes of Health 2024-2029
- *TRIPODS: Foundations of Model Driven Discovery from Massive Data* (PI: Sandstede; Co-PIs: Brock, Geman, Hogan, Upfal), National Science Foundation 2017-2022

Selected Plenary Lectures

- Conference *Mathematics of Data, Dynamics, and Life Sciences*, Irvine/CA 2025
- Dynamics Days US 2025, Denver/USA 2025
- SIAM Conference *Applications of Dynamical Systems*, Snowbird/USA 2019
- SIAM Annual Meeting, Portland/USA 2018
- 10th East China Partial Differential Equations Conference, Shanghai/China 2015
- International Conference *Dynamics of Differential Equations*, Atlanta/USA 2013
- British Applied Mathematics Colloquium, Nottingham/UK 2009

Administrative Positions (Brown University)

- Department Chair, Division of Applied Mathematics 2020-2023
- Director of Undergraduate Certificate, Data Fluency 2019-2022
- Director, Data Science Initiative 2018-2020
- Department Chair, Division of Applied Mathematics 2011-2017
- Associate Director, Institute for Computational and Experimental Research in Mathematics 2010-2022
- Associate Chair, Division of Applied Mathematics 2010-2011
- Director, Lefschetz Center for Dynamical Systems 2010-2011

Committee Service (Brown University)

- Graduate School Advisory Board 2024-2025
- Ad Hoc Committee on Admissions Policies 2023-2024
- Goldwater Scholarship Committee 2021-2024
- Task Force on the Status of Women Faculty 2021-2023
- College Curriculum Council 2020-2022
- COVID-19 Appointments Extension Committee, Graduate School 2020-2022
- Tenure, Promotions, and Appointments Committee Spring 2018
- Task Force on Doctoral Advising, Graduate School 2017-2018
- Data Governance Committee 2016-2019
- Advising Working Group, Dean of the College's office 2015
- Data Science Rapid Planning Group, Provost's office Spring 2015
- Task Force on Institutional Data, Provost's office Spring 2015
- Advisory Board, Sheridan Center for Teaching and Learning 2012-2019
- Research Advisory Board (Vice Chair), Office of the Vice President for Research 2011-2013

Selected Professional Service

- American Mathematical Society (AMS)
  - Member, 2025 Mathematical Congress of the Americas Travel Grants Selection Committee 2024-2025
  - Member, Selection Committee, Frank and Brennie Morgan Prize 2023
- Society for Industrial and Applied Mathematics (SIAM)
  - Member, Committee on Committees and Appointments 2024-2026
  - Chair, Activity Group Analysis of Partial Differential Equations 2023-2024
  - Chair, Activity Group Nonlinear Waves and Coherent Structures 2007-2008
  - Program Director, Activity Group Applied Dynamical Systems 2004-2005
  - Steering Committee, Activity Group Nonlinear Waves and Coherent Structures 2003-2004
- External Committees
  - External Advisory Board, National Institute for Theory and Mathematics in Biology 2023-present
- Editor-in-Chief of
  - Frontiers in Applied Dynamical Systems 2015-2025
  - SIAM Journal on Applied Dynamical Systems 2012-2017

Arts Outreach

- Involved in arts project *Shape Shift–Landscape in motion* at Durlston National Park 2007
- Transparencies shown in the exhibition *Lines of Enquiry* at Kettle's Yard (Cambridge/UK) 2006

Advising and Mentoring

- **Postdoctoral Fellows (24)**
  - Daniela Peterhof (1996-1998), Myunghyun Oh (2001-2005), Bard Oldeman (2002-2003), Jeffrey Humpherys (2002-2004), Martin Wechselberger (2002-2005), Sara Maad (2005-2006), David Lloyd (2005-2007), Margaret Beck (2006-2009), Hermen Jan Hupkes (2008-2010), Peter van Heijster (2009-2011), Toan Nguyen (2010-2012), Yancong Xu (2011), Martina Chirilus-Bruckner (2011-2013), John Gemmer (2013-2016), Blake Barker (2014-2016), Katherine Kinnaird (2016-2018), Jason Bramburger (2017-2019), Sarah Brown (2018-2020), Linda Clark (2019-2021), Tony Wong (2021-2023), Wenjun Zhao (2021-2024), Katherine Slyman (2023-2024), Ryan Creedon (2024-present), Varun Khurana (2024-present)
- **PhD Students (26)**
  - Anna Ghazaryan (2005), Vahagn Manukian (2005), Man Tsoi (2006), Daniele Avitabile (2008), Scott McCalla (2011), Kelly McQuighan (2014), Laura Slivinski (2014), Andrew Nixon (2015), Elizabeth Makrides (2016), Paul Carter (2016), Alexandria Volkening (2017), Veronica Ciocanel (2017), Chao Xia (2017), Stephanie Dodson (2019), Xuefei Cao (2020), Melissa McGuirl (2020), Ross Parker (2020), Ang Li (2020), Milen Ivanov (2021), Kristina Mallory (2021), Rebecca Santorella (2022), Erik Bergland (2024), Timothy Roberts (2024), Moyi Tian (2024), Victoria Antonetti, Ezra Seidel, Presley Kimball, Stanley Nicholson, Yian Qian, Malindi Whyte
- **Undergraduate Research Students (71)**
  - Sorakrit Atcharanuwat, Wenhao Fang, Kesinee (Eve) Ninsuwan, Nadejda Drenska, Do Young Yoon, Thunwa Theerakarn, Chukiat Phonsom, Zeynep Yildirim, Bridget Fan, Courtney Cochrane, Emma Holmes, Jenna Parker, Joseph DeGuire, Melissa McGuirl, Patrick Murphy, Anne Schwartz, Christian Cofoid, Colin Wahl, Joshua Rubin Abrams, Mackenzie Simper, Nathaniel Ventura, Rose Nguyen, Emma Byrne, Bethany Dubois, Francesca Lim, Jacob Ruth, Neil Chandra, Tracy Chin, Aric Wheeler, Chloe Avery, Claire Qing Fan, Dorothy Catey, Madeline Abbott, Micah Pedrick, Philip Doldo, Ryan Utke, Surabhi Desai, Tharathep Sangsawang, Cassandra Cole, Carter Chain, Dylan Altshuler, Melissa Stadt, Rebecca Santorella, Emily Reed, Addie Harrison, Gil Parnon, Madison Russell, Gisela Hoxha, Berke Turkay, Nathan Elbaum, Sam Maffa, Shaun Kohli, Lee Ding, Lucas Mastromatteo, Sarah Reichfeld, Electa Cleveland, Stacey Xiang, Angela Zhu, Suany Barahona, Marchelle Beougher, Miles Mena, Shira Michel, Ashley Peake, Connor Shrader, Mia Busuladzic-Begic, Oscar Avalos, Alexandra Carr, Alessandra D'Arcy, Hunter Golemon, Allie Mikalatos, Leila Thompsky
- **PhD Student Accomplishments**
  - NSF GRFPs: Alexandria Volkening (2011), Kristina Mallory (2014), Stephanie Dodson (2015), Rebecca Santorella (2017)
  - David Gottlieb Memorial Award (Division of Applied Mathematics): Scott McCalla (2011)
  - Sigma Xi Award (Division of Applied Mathematics): Veronica Ciocanel (2017), Melissa McGuirl (2019)
  - Stella Dafermos Award (Division of Applied Mathematics): Kelly McQuighan (2013), Laura Slivinski (2014), Elizabeth Makrides (2016), Alexandria Volkening (2017), Stephanie Dodson (2019), Melissa McGuirl (2020), Rebecca Santorella (2021)
  - Larry S. Shu Prize (Division of Applied Mathematics): Timothy Roberts (2024)
  - Reginald D. Archambault Award for Teaching Excellence (Brown University): Veronica Ciocanel (2015), Melissa McGuirl (2018)
  - Deans Faculty Fellowship (Brown University): Elizabeth Makrides (2016), Ross Parker (2020)
  - SIAM Student Chapter Certificate of Recognition: Veronica Ciocanel (2016), Melissa McGuirl (2019), Rebecca Santorella (2020), Timothy Roberts (2022)
  - AWM Poster Prize: Stephanie Dodson (2018)
  - SIAG DS Red Sock Poster Award: Daniele Avitabile (2007), Veronica Ciocanel (2015), Stephanie Dodson (2017), Rebecca Santorella (2019)
  - SIAG NWCS Poster Prize: Kelly McQuighan (2012), Paul Carter (2014)

▷ SMB Lee A Segel Prize: Veronica Ciocanel (2024)

Björn Sandstede | Publications

Preprints

1. B Sandstede.
   Branches of localized patterned states.
2. L Hoogstra, K Slyman and B Sandstede.
   Quantitative metrics for trait and identity distributions.

Recent Conference Contributions

1. C Menghini, J Uhr, S Haddadan, A Champagne, B Sandstede and S Ramachandran.
   The drift of #MyBodyMyChoice discourse on Twitter.
   In: *14th ACM Web Science Conference*, 2022.
2. P Demetci, R Santorella, B Sandstede and R Singh.
   Unsupervised integration of single-cell multi-omics datasets with disproportionate cell-type representation.
   In: *RECOMB 2022: Research in Computational Molecular Biology*.
   Springer Lecture Notes in Computer Science **13278** (2022) 3–19.
3. B Hemmatian, S Feucht, R Avram, A Wey, M Garg, K Spitalnic, C Eickhoff, E Pavlick, B Sandstede and S Sloman.
   A novel corpus of discourse structure in humans and computers.
   In: *The 2nd Workshop on Computational Approaches to Discourse at EMNLP 2021*, 2021.

Journal Articles

1. CD Baker, TM Pham, P Demetci, QH Tran, I Redko, B Sandstede and R Singh.
   SCOT+: A comprehensive software suite for single-cell alignment using optimal transport.
   Bioinformatics Advances (2025), accepted.
2. S Dodson, R Goh and B Sandstede.
   Efficient numerical computation of spiral spectra with exponentially-weighted preconditioners.
   IMA Journal of Numerical Analysis (2025), accepted.
3. P Kimball, JS Casalegno, PP Martinez, AS Mahmud, B Sandstede and RE Baker.
   Urban contact patterns shape respiratory syncytial virus epidemics with implications for vaccination.
   Science Advances **11** (2025) eady5457.
4. T Roberts and B Sandstede.
   Homoclinic snaking of contact defects in reaction-diffusion equations.
   Nonlinearity **38** (2025) 115001.
5. W Zhao, S Maffa and B Sandstede.
   Data-driven continuation of patterns and their bifurcations.
   SIAM Journal on Applied Dynamical Systems **24** (2025) 1812–1850.
6. M Ivanov and B Sandstede.
   Spectral stability of contact defects on large bounded domains.
   Journal of Nonlinear Science **35** (2025) 69.
7. W Zhao, E Larschan, B Sandstede and R Singh.
   Optimal transport reveals dynamic gene regulatory networks via gene velocity estimation.
   PLOS Computational Biology **21** (2025) e1012476.

8. K Slyman, M Simper, J Gemmer and B Sandstede.
   Most probable escape paths in non-gradient systems.
   SIAM Journal on Applied Dynamical Systems **24** (2025) 1408–1421.
9. E Bergland, J Bramburger and B Sandstede.
   Localized synchronous patterns in weakly coupled bistable oscillator systems.
   Physica D **472** (2025) 134537.
10. C Topaz, H Z. Brooks, U Kan, B Sandstede and C Smith.
    Diversity, identity, and data.
    The American Mathematical Monthly **132** (2025) 36–47.
11. MV Ciocanel, L Ding, L Mastromatteo, S Reichheld, S Cabral, K Mowry and B Sandstede.
    Parameter identifiability in PDE models of fluorescence recovery after photobleaching.
    Bulletin of Mathematical Biology **86** (2024) 36.
12. T Chin, J Ruth, C Sanford, R Santorella, P Carter and B Sandstede.
    Enabling equation-free modeling via diffusion maps.
    Journal of Dynamics and Differential Equations **36** (2024) 415–434.
13. M Ivanov and B Sandstede.
    Truncation of contact defects in reaction-diffusion systems.
    SIAM Journal on Applied Dynamical Systems **23** (2024) 26–49.
14. E Cleveland, A Zhu, B Sandstede and A Volkening.
    Quantifying different modeling frameworks using topological data analysis: a case study with zebrafish patterns.
    SIAM Journal on Applied Dynamical Systems **22** (2023) 3233–3266.
15. D Bhaskar, WY Zhang, A Volkening, B Sandstede and IY Wong.
    Topological data analysis of spatial patterning in heterogeneous cell populations: I. Clustering and sorting with varying cell-cell adhesion.
    npj Systems Biology and Applications **9** (2023) 43.
16. B Sandstede and A Scheel.
    Spiral waves: linear and nonlinear theory.
    Memoirs of the American Mathematical Society **285/1413** (2023).
17. KRB Schmitt, L Clark, K Kinnaird, REH Wertz and B Sandstede.
    Evaluation of EDISON's data science competency framework through a comparative literature analysis.
    Foundations of Data Science **5** (2023) 177–198.
18. P Demetci, R Santorella, M Chakravarthy, B Sandstede and R Singh.
    SCOTv2: Single-cell multiomic alignment with disproportionate cell-type representation.
    Journal of Computational Biology **29** (2022) 1213–1228.
19. R Parker and B Sandstede.
    Periodic multi-pulses and spectral stability in Hamiltonian PDEs with symmetry.
    Journal of Differential Equations **334** (2022) 368–450.
20. S Dodson and B Sandstede.
    Behavior of spiral wave spectra with a rank-deficient diffusion matrix.
    SIAM Journal of Mathematical Analysis **54** (2022) 3789–3816.
21. P Demetci, R Santorella, B Sandstede, WS Noble and R Singh.
    SCOT: Single-cell multi-omics alignment with optimal transport.
    Journal of Computational Biology **29** (2021) 3–18.
22. P Demetci, R Santorella, B Sandstede, WS Noble and R Singh.
    Single-cell multiomics integration by SCOT.
    Journal of Computational Biology **29** (2021) 19–22.

23. M Tian, J Bramburger and B Sandstede.
    Snaking bifurcations of localized patterns on ring lattices.
    IMA Journal of Applied Mathematics **86** (2021) 1112–1140.
24. P Carter, JDM Rademacher and B Sandstede.
    Pulse replication and accumulation of eigenvalues.
    SIAM Journal on Mathematical Analysis **53** (2021) 3520–3576.
25. K Mallory, JR Abrams, A Schwartz, MV Ciocanel, A Volkening and B Sandstede.
    Influenza spread on context-specific social networks.
    Royal Society Open Science **8** (2021) 191876.
26. T Kapitula, R Parker and B Sandstede.
    A reformulated Krein matrix for star-even polynomial operators with applications.
    SIAM Journal on Mathematical Analysis **52** (2020) 4705–4750.
27. MR McGuirl, SP Smith, B Sandstede and S Ramachandran.
    Detecting shared genetic architecture among multiple phenotypes by hierarchical clustering of gene-level association statistics.
    Genetics **215** (2020) 511–529.
28. J Bramburger and B Sandstede.
    Localized patterns in planar bistable weakly coupled lattice systems.
    Nonlinearity **33** (2020) 3500–3525.
29. A Volkening, M Abbott, D Catey, N Chandra, B Dubois, F Lim and B Sandstede.
    Modeling stripe formation on growing zebrafish tailfins.
    Bulletin of Mathematical Biology **82** (2020) 56.
30. R Parker, PG Kevrekidis and B Sandstede.
    Existence and spectral stability of multi-pulses in discrete Hamiltonian lattice systems.
    Physica D **408** (2020) 132414.
31. J Bramburger and B Sandstede.
    Spatially localized structures in lattice dynamical systems.
    Journal of Nonlinear Science **30** (2020) 603–644.d
32. MR McGuirl, A Volkening and B Sandstede.
    Topological data analysis of zebrafish patterns.
    Proceedings of the National Academy of Sciences **117** (2020) 5113–5124.
33. S Dodson and B Sandstede.
    Determining the source of period-doubling instabilities in spiral waves.
    SIAM Journal on Applied Dynamical Systems **18** (2019) 2202–2226.
34. J Bramburger, D Altschuler, CI Avery, T Sangsawang, M Beck, P Carter and B Sandstede.
    Localized radial roll patterns in higher space dimensions.
    SIAM Journal on Applied Dynamical Systems **18** (2019) 1420–1453.
35. T Aougab, M Beck, P Carter, S Desai, B Sandstede, M Stadt and A Wheeler.
    Isolas versus snaking of localized rolls.
    Journal of Dynamics and Differential Equations **31** (2019) 1199–1222.
36. S Iyer and B Sandstede.
    Mixing in reaction-diffusion systems: Large phase offsets.
    Archive for Rational Mechanics and Analysis **233** (2019) 323–384.
37. X Cao, B Sandstede and X Luo.
    A functional data method for causal dynamic network modeling of task-related fMRI.
    Frontiers in Neuroscience **13** (2019) 127.

38. E Makrides and B Sandstede.
Existence and stability of spatially localized patterns.
Journal of Differential Equations **266** (2019) 1073–1120.
39. MV Ciocanel, B Sandstede, SP Jeschonek and KL Mowry.
Modeling microtubule-based transport and anchoring of mRNA.
SIAM Journal on Applied Dynamical Systems **17** (2018) 2855–2881.
40. HM McNamara, S Dodson, YL Huang, EW Miller, B Sandstede and AE Cohen.
Geometry-dependent instabilities in electrically excitable tissues.
Cell Systems **7** (2018) 359–370.
41. B de Rijk and B Sandstede.
Diffusive stability against nonlocalized perturbations of planar wave trains in reaction-diffusion systems.
Journal of Differential Equations **265** (2018) 5315–5351.
42. A Volkening and B Sandstede.
Iridophores as a source of robustness in zebrafish stripes and variability in Danio patterns.
Nature Communications **9** (2018) 3231.
43. P Carter and B Sandstede.
Unpeeling a homoclinic banana in the FitzHugh-Nagumo system.
SIAM Journal on Applied Dynamical Systems **17** (2018) 236–349.
44. B Barker, R Nguyen, B Sandstede, N Ventura and C Wahl.
Computing Evans functions numerically via boundary-value problems.
Physica D **367** (2018) 1–10.
45. MV Ciocanel, JA Kreiling, JA Gagnon, KL Mowry and B Sandstede.
Analysis of active transport by fluorescence recovery after photobleaching.
Biophysical Journal **112** (2017) 1714–1725.
46. C Xia, C Cochrane, J DeGuire, G Fan, E Holmes, M McGuirl, P Murphy, J Palmer, P Carter, L Slivinski and B Sandstede.
Assimilating Eulerian and Lagrangian data in traffic-flow models.
Physica D **346** (2017) 59–72.
47. P Carter, B de Rijk and B Sandstede.
Stability of traveling pulses with oscillatory tails in the FitzHugh-Nagumo system.
Journal of Nonlinear Science **26** (2016) 1369–1444.
48. EA Powrie, MV Ciocanel, JA Kreiling, JA Gagnon, B Sandstede and KL Mowry.
Using *in vivo* imaging to measure RNA mobility in *Xenopus laevis* oocytes.
Methods **98** (2016) 60–65.
49. B Sandstede and T Theerakarn.
Regularity of center manifolds via the graph transform.
Journal of Dynamics and Differential Equations **27** (2015) 989–1006.
50. A Volkening and B Sandstede.
Modeling stripe formation in zebrafish: an agent-based approach.
Journal of the Royal Society Interface **12** (2015) 20150812.
51. P Carter and B Sandstede.
Fast pulses with oscillatory tails in the FitzHugh-Nagumo system.
SIAM Journal on Mathematical Analysis **47** (2015) 3285–3441.
52. J Guckenheimer, B Krauskopf, HM Osinga and B Sandstede.
Invariant manifolds and global bifurcations.
Chaos **25** (2015) 097604.

53. L Slivinski, E Spiller, A Apte and B Sandstede.
A hybrid particle-ensemble Kalman filter for Lagrangian data assimilation.
Monthly Weather Review **143** (2015) 195–211.
54. P Carter, PL Christiansen, YB Gaididei, C Gorria, B Sandstede, MP Sorensen and J Starke.
Multi-jam solutions in traffic models with velocity-dependent driver strategies.
SIAM Journal on Applied Mathematics **74** (2014) 1895–1918.
55. K McQuighan and B Sandstede.
Oscillons in the planar Ginzburg–Landau equation with 2:1 forcing.
Nonlinearity **27** (2014) 3074–3116.
56. M Beck, T Nguyen, B Sandstede and K Zumbrun.
Nonlinear stability of source defects in the complex Ginzburg–Landau equation.
Nonlinearity **27** (2014) 739–786.
57. P van Heijster and B Sandstede.
Bifurcations to travelling planar spots in a three-component FitzHugh–Nagumo system.
Physica D **275** (2014) 19–34.
58. E Makrides and B Sandstede.
Predicting the bifurcation structure of localized snaking patterns.
Physica D **268** (2014) 59–78.
59. S McCalla and B Sandstede.
Spots in the Swift–Hohenberg equation.
SIAM Journal on Applied Dynamical Systems **12** (2013) 831–877.
60. HJ Hupkes and B Sandstede.
Stability of pulse solutions for the discrete FitzHugh–Nagumo system.
Transactions of the American Mathematical Society **365** (2013) 251–301.
61. P van Heijster and B Sandstede.
Coexistence of stable spots and fronts in a three-component FitzHugh–Nagumo system.
RIMS Kokyuroku Bessatsu **B31** (2012) 135–155.
62. B Sandstede and Y Xu.
Snakes and isolas in non-reversible conservative systems.
Dynamical Systems **27** (2012) 317–329.
63. B Sandstede, A Scheel, G Schneider and H Uecker.
Diffusive mixing of periodic wave trains in reaction-diffusion systems.
Journal of Differential Equations **252** (2012) 3541–3574.
64. M Beck, T Nguyen, B Sandstede and K Zumbrun.
Toward nonlinear stability of sources via a modified Burgers equation.
Physica D **241** (2012) 382–292.
65. P van Heijster and B Sandstede.
Planar radial spots in a three-component FitzHugh–Nagumo system.
Journal of Nonlinear Science **21** (2011) 705–745.
66. HJ Hupkes, D Pelinovsky and B Sandstede.
Propagation failure in the discrete Nagumo equation.
Proceedings of the American Mathematical Society **139** (2011) 3537–3551.
67. J Knobloch, DJB Lloyd, B Sandstede and T Wagenknecht.
Isolas of 2-pulse solutions in homoclinic snaking scenarios.
Journal of Dynamics and Differential Equations **23** (2011) 93–114.

68. G Derks, S Maad and B Sandstede.
    Perturbations of embedded eigenvalues for the planar bilaplacian.
    Journal of Functional Analysis **260** (2010) 340–398.
69. HJ Hupkes and B Sandstede.
    Travelling pulse solutions for the discrete FitzHugh-Nagumo system.
    SIAM Journal on Applied Dynamical Systems **9** (2010) 827–882.
70. D Avitabile, DJB Lloyd, J Burke, E Knobloch and B Sandstede.
    To snake or not to snake in the planar Swift–Hohenberg equation.
    SIAM Journal on Applied Dynamical Systems **9** (2010) 704–733.
71. S McCalla and B Sandstede.
    Snaking of radial solutions of the multi-dimensional Swift–Hohenberg equation: a numerical study.
    Physica D **239** (2010) 1581–1592.
72. D Obeid, JM Kosterlitz and B Sandstede.
    State selection in the noisy stabilized Kuramoto–Sivashinsky equation.
    Physical Review E **81** (2010) 066205.
73. M Beck, HJ Hupkes, B Sandstede and K Zumbrun.
    Nonlinear stability of semidiscrete shocks for two-sided schemes.
    SIAM Journal of Mathematical Analysis **42** (2010) 857–903.
74. M Beck, B Sandstede and K Zumbrun.
    Nonlinear stability of time-periodic viscous shocks.
    Archive for Rational Mechanics and Analysis **196** (2010) 1011–1076.
75. M Oh and B Sandstede.
    Evans functions for periodic waves on infinite cylindrical domains.
    Journal of Differential Equations **248** (2010) 544–555.
76. V Manukian, N Costanzino, CKRT Jones and B Sandstede.
    Existence of multi-pulses of the regularized short-pulse and Ostrovsky equations.
    Journal of Dynamics and Differential Equations **21** (2009) 607–622.
77. HJ Hupkes and B Sandstede.
    Modulated wave trains in lattice differential systems.
    Journal of Dynamics and Differential Equations **21** (2009) 417–485.
78. V Manukian and B Sandstede.
    Multi-hump pulses in systems with reflection and phase invariance.
    Journal of Differential Equations **247** (2009) 1866–1898.
79. M Beck, J Knobloch, DJB Lloyd, B Sandstede and T Wagenknecht.
    Snakes, ladders, and isolas of localised patterns.
    SIAM Journal on Mathematical Analysis **41** (2009) 936–972.
80. A Doelman, B Sandstede, A Scheel and G Schneider.
    The dynamics of modulated wave trains.
    Memoirs of the American Mathematical Society **199/934** (2009).
81. M Beck, A Ghazaryan and B Sandstede.
    Nonlinear convective stability of travelling fronts near Turing and Hopf instabilities.
    Journal of Differential Equations **246** (2008) 4371–4390.
82. BG Bale, N Kutz and B Sandstede.
    Optimizing waveguide array mode-locking for high-power fiber lasers.
    IEEE Journal of Selected Topics in Quantum Electronics **15** (2009) 220–231.

83. DJB Lloyd and B Sandstede.
Localized radial solutions of the Swift–Hohenberg equation.
Nonlinearity **22** (2009) 485–524.
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