Björn Sandstede

Director, Data Science Initiative, Brown University
182 George Street, Providence, RI 02912, USA

✉ bjorn_sandstede@brown.edu
⌂ http://bjornsandstede.com

Academic Positions

○ Professor of Applied Mathematics, Brown University	2008–present
○ 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

○ 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

Advising and Mentoring

- ○ Served as advisor and mentor for 2 MSc students, 21 PhD students, and 18 postdoctoral fellows
- ○ Worked with 49 undergraduate research students
- ○ Served as advisor for 8 honors theses
- ○ Served as first-year, sophomore, concentration advisor at Brown University

Diversity, Inclusion, and Teaching

- 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
- Offer an undergraduate course on *Race and Gender in the Scientific Community*   2017–present
- Developed and offer a summer bridge program for incoming graduate students   2017–present
- 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 historically underrepresented groups:
  25 of my undergraduate research students, 13 of my PhD students, and 7 of my postdoctoral fellows are women

Selected Grants

- *T32 Predoctoral Training Program in Biological Data Science at Brown University*
  (PI: Ramachandran; Co-PIs: Sandstede, Upfal, Wu), National Institutes of Health   2018-2023
- *TRIPODS: Foundations of Model Driven Discovery from Massive Data*
  (PI: Sandstede; Co-PIs: Brock, Geman, Hogan, Upfal), National Science Foundation   2017–2020
- *Dynamics and stability of spatially extended patterns*, National Science Foundation   2017–2020
- *Training and Teaching for Transforming Big Data to Knowledge*
  (PI: Sarkar; Co-PIs: Brock, Gatsonis, Istrail, Sandstede), National Institutes of Health   2017-2020
- *Institute for Computational and Experimental Research in Mathematics (ICERM)*
  (PI: Pipher; Co-PIs: Brock, Hoffstein, Sandstede), National Science Foundation   2010-2020

Selected Plenary Lectures

- 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
- Equadiff, Vienna/Austria   2007
- SIAM Conference *Nonlinear Waves and Coherent Structures*, Seattle/USA   2006
- AIMS Conference *Dynamical Systems and Differential Equations*, Poitiers/France   2006
- XXII. Dynamics Days Europe, Heidelberg/Germany   2002
- SIAM Conference *Pacific Rim Dynamical Systems*, Maui/USA   2000

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

Administrative Positions (Brown University)

- Director, Data Science Initiative — 2018–present
- Department Chair, Division of Applied Mathematics — 2011–2017
- Associate Director, Institute for Computational and Experimental Research in Mathematics — 2010–present
- Associate Chair, Division of Applied Mathematics — 2010–2011
- Director, Lefschetz Center for Dynamical Systems — 2010–2011

Committee Service (Brown University)

- College Curriculum Council — Fall 2020–present
- Tenure, Promotions, and Appointments Committee — Spring 2018
- Task Force on Doctoral Advising, Graduate School — 2017–2018
- Executive Committee, Data Science Initiative — 2016–present
- 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

- Editor-in-Chief of
  - Frontiers in Applied Dynamical Systems — 2015–present
  - SIAM Journal on Applied Dynamical Systems — 2012–2017
- Editorial Board Membership
  - Discrete and Continuous Dynamical Systems B — 2001–2008
  - Pacific Journal of Mathematics for Industry — 2015–present
  - Physica D — 2005–2019
  - Quarterly of Applied Mathematics — 2010–present
  - SIAM Journal on Applied Dynamical Systems — 2002–2018
  - SIAM Journal on Mathematical Analysis — 2003–2015 & 2017–2018
  - Zeitschrift für Analysis und ihre Anwendungen — 2006–present
- SIAM Committees
  - Chair, SIAG Nonlinear Waves and Coherent Structures — 2007–2008
  - Program Director, SIAG Applied Dynamical Systems — 2004–2005
  - Steering Committee, SIAG Nonlinear Waves and Coherent Structures — 2003–2004
- External Committees
  - Steering Committee, Bristol Centre for Applied Nonlinear Mathematics — 2002–2005
  - NSF-DMS Committee of Visitors — 2007
- Conference Organization:
  - Organizer, Kobe-Brown Summer School on High Performance Simulations, Providence/Kobe — 2013–2015
  - Co-Chair, Equadiff, Loughborough — 2011
  - Co-Chair, SIAM Conference on Applications of Dynamical Systems, Snowbird — 2005
  - Organizing Committee, Equadiff, Leiden — 2019
  - Organizing Committee, Equadiff, Lyons — 2015
  - Organizing Committee, SIAM Conference on Applications of Dynamical Systems, Snowbird — 2015

Björn Sandstede | Publications

Preprints

1. B Sandstede and A Scheel.
   Spiral waves: linear and nonlinear theory.
2. 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 (2020), (accepted).
3. X Cao, J Ke, B Sandstede and X Luo.
   Time-dependent canonical correlation analysis for multilevel time series.
4. MR McGuirl, SP Smith, B Sandstede and S Ramachandran.
   Hierarchical clustering of gene-level association statistics reveals shared and differential genetic architecture among traits in the UK Biobank.
5. T Kapitula, R Parker and B Sandstede.
   A reformulated Krein matrix for star-even polynomial operators with applications.
6. JR Abrams, A Schwartz, MV Ciocanel, A Volkening and B Sandstede.
   Influenza spread on context-specific social networks.

Peer-Reviewed Journal Articles

1. J Bramburger and B Sandstede.
   Localized patterns in planar bistable weakly coupled lattice systems.
   Nonlinearity (2020), (accepted).
2. R Parker, PG Kevrekidis and B Sandstede.
   Existence and spectral stability of multi-pulses in discrete hamiltonian lattice systems.
   Physica D (2020), (accepted).
3. J Bramburger and B Sandstede.
   Spatially localized structures in lattice dynamical systems.
   Journal of Nonlinear Science (2019), (accepted).
4. MR McGuirl, A Volkening and B Sandstede.
   Topological data analysis of zebrafish patterns.
   Proceedings of the National Academy of Sciences **117** (2020) 5113–5124.
5. 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.
6. 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.
7. 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.
8. S Iyer and B Sandstede.
   Mixing in reaction-diffusion systems: Large phase offsets.
   Archive for Rational Mechanics and Analysis **233** (2019) 323–384.

9. 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.

10. 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.

11. E Makrides and B Sandstede.
    Existence and stability of spatially localized patterns.
    Journal of Differential Equations **266** (2018) 1073–1120.

12. 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.

13. 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.

14. A Volkening and B Sandstede.
    Iridophores as a source of robustness in zebrafish stripes and variability in Danio patterns.
    Nature Communications **9** (2018) 3231.

15. P Carter and B Sandstede.
    Unpeeling a homoclinic banana in the FitzHugh-Nagumo system.
    SIAM Journal on Applied Dynamical Systems **17** (2018) 236–349.

16. 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.

17. 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.

18. 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.

19. 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.

20. 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.

21. B Sandstede and T Theerakarn.
    Regularity of center manifolds via the graph transform.
    Journal of Dynamics and Differential Equations **27** (2015) 989–1006.

22. A Volkening and B Sandstede.
    Modeling stripe formation in zebrafish: an agent-based approach.
    Journal of the Royal Society Interface **12** (2015) 20150812.

23. P Carter and B Sandstede.
    Fast pulses with oscillatory tails in the FitzHugh-Nagumo system.
    SIAM Journal on Mathematical Analysis **47** (2015) 3285–3441.

24. J Guckenheimer, B Krauskopf, HM Osinga and B Sandstede.
    Invariant manifolds and global bifurcations.
    Chaos **25** (2015) 097604.

25. 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.

26. 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.

27. K McQuighan and B Sandstede.
    Oscillons in the planar Ginzburg–Landau equation with 2:1 forcing.
    Nonlinearity **27** (2014) 3074–3116.

28. 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.

29. P van Heijster and B Sandstede.
    Bifurcations to travelling planar spots in a three-component FitzHugh–Nagumo system.
    Physica D **275** (2014) 19–34.

30. E Makrides and B Sandstede.
    Predicting the bifurcation structure of localized snaking patterns.
    Physica D **268** (2014) 59–78.

31. S McCalla and B Sandstede.
    Spots in the Swift–Hohenberg equation.
    SIAM Journal on Applied Dynamical Systems **12** (2013) 831–877.

32. 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.

33. 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.

34. B Sandstede and Y Xu.
    Snakes and isolas in non-reversible conservative systems.
    Dynamical Systems **27** (2012) 317–329.

35. 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.

36. 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.

37. P van Heijster and B Sandstede.
    Planar radial spots in a three-component FitzHugh–Nagumo system.
    Journal of Nonlinear Science **21** (2011) 705–745.

38. HJ Hupkes, D Pelinovsky and B Sandstede.
    Propagation failure in the discrete Nagumo equation.
    Proceedings of the American Mathematical Society **139** (2011) 3537–3551.

39. 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.

40. G Derks, S Maad and B Sandstede.
   Perturbations of embedded eigenvalues for the planar bilaplacian.
   Journal of Functional Analysis **260** (2010) 340–398.

41. HJ Hupkes and B Sandstede.
   Travelling pulses for the discrete FitzHugh-Nagumo system.
   SIAM Journal on Applied Dynamical Systems **9** (2010) 827–882.

42. 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.

43. 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.

44. D Obeid, JM Kosterlitz and B Sandstede.
   State selection in the noisy stabilized Kuramoto–Sivashinsky equation.
   Physical Review E **81** (2010) 066205.

45. 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.

46. M Beck, B Sandstede and K Zumbrun.
   Nonlinear stability of time-periodic viscous shocks.
   Archive for Rational Mechanics and Analysis **196** (2010) 1011–1076.

47. M Oh and B Sandstede.
   Evans functions for periodic waves on infinite cylindrical domains.
   Journal of Differential Equations **248** (2010) 544–555.

48. 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.

49. HJ Hupkes and B Sandstede.
   Modulated wave trains in lattice differential systems.
   Journal of Dynamics and Differential Equations **21** (2009) 417–485.

50. V Manukian and B Sandstede.
   Multi-hump pulses in systems with reflection and phase invariance.
   Journal of Differential Equations **247** (2009) 1866–1898.

51. 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.

52. A Doelman, B Sandstede, A Scheel and G Schneider.
   The dynamics of modulated wave trains.
   Memoirs of the American Mathematical Society **199/934** (2009).

53. 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.

54. 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.

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

56. DJB Lloyd, B Sandstede, D Avitabile and AR Champneys.
Localized hexagon patterns of the planar Swift–Hohenberg equation.
SIAM Journal on Applied Dynamical Systems **7** (2008) 1049–1100.

57. G Derks, S Maad and B Sandstede.
Perturbations of embedded eigenvalues for the bilaplacian on a cylinder.
Discrete and Continuous Dynamical Systems A **21** (2008) 801–821.

58. B Sandstede and A Scheel.
Hopf bifurcation from viscous shock waves.
SIAM Journal on Mathematical Analysis **39** (2008) 2033–2052.

59. N Kutz and B Sandstede.
Theory of passive harmonic mode-locking using waveguide arrays.
Optics Express **16** (2008) 636–650.

60. B Sandstede and A Scheel.
Relative Morse indices, Fredholm indices, and group velocities.
Discrete and Continuous Dynamical Systems A **20** (2008) 139–158.

61. B Sandstede.
Evans functions and nonlinear stability of travelling waves in neuronal network models.
International Journal of Bifurcation and Chaos **17** (2007) 2693–2704.

62. B Sandstede and A Scheel.
Period doubling of spiral waves and defects.
SIAM Journal on Applied Dynamical Systems **6** (2007) 494–547.

63. A Ghazaryan and B Sandstede.
Nonlinear convective instability of Turing-unstable fronts near onset: A case study.
SIAM Journal on Applied Dynamical Systems **6** (2007) 319–347.

64. JDM Rademacher, B Sandstede and A Scheel.
Computing absolute and essential spectra using continuation.
Physica D **229** (2007) 166–183.

65. J Humpherys, B Sandstede and K Zumbrun.
Efficient computation of analytic bases in Evans function analysis of large systems.
Numerische Mathematik **103** (2006) 631–642.

66. B Sandstede and A Scheel.
Curvature effects on spiral spectra: Generation of point eigenvalues near branch points.
Physical Review E **73** (2006) 016217.

67. G Samaey and B Sandstede.
Determining stability of pulses for partial differential equations with time delays.
Dynamical Systems **20** (2005) 201–222.

68. T Kapitula, PG Kevrekidis and B Sandstede.
Addendum: Counting eigenvalues via the Krein signature in infinite-dimensional Hamiltonian systems.
Physica D **201** (2005) 199–201.

69. E Grenier, CKRT Jones, F Rousset and B Sandstede.
    Viscous perturbations of marginally stable Euler flow and finite-time Melnikov theory.
    Nonlinearity **18** (2005) 465–483.

70. B Sandstede and A Scheel.
    Basin boundaries and bifurcations near convective instabilities: A case study.
    Journal of Differential Equations **208** (2005) 176–193.

71. B Sandstede and A Scheel.
    Absolute instabilities of standing pulses.
    Nonlinearity **18** (2005) 331–378.

72. T Kapitula, N Kutz and B Sandstede.
    The Evans function for nonlocal equations.
    Indiana University Mathematics Journal **53** (2004) 1095–1126.

73. T Kapitula, PG Kevrekidis and B Sandstede.
    Counting eigenvalues via the Krein signature in infinite-dimensional Hamiltonian systems.
    Physica D **195** (2004) 263–282.

74. MD Groves and B Sandstede.
    A plethora of three-dimensional periodic travelling gravity-capillary water waves with multipulse transverse profiles.
    Journal of Nonlinear Science **14** (2004) 297–340.

75. B Sandstede and A Scheel.
    Evans function and blow-up methods in critical eigenvalue problems.
    Discrete and Continuous Dynamical Systems **10** (2004) 941–964.

76. B Sandstede and A Scheel.
    Defects in oscillatory media: toward a classification.
    SIAM Journal on Applied Dynamical Systems **3** (2004) 1–68.

77. A Doelman, B Sandstede, A Scheel and G Schneider.
    Propagation of hexagonal patterns near onset.
    European Journal of Applied Mathematics **14** (2003) 85–110.

78. J Härterich, B Sandstede and A Scheel.
    Exponential dichotomies for linear non-autonomous functional differential equations of mixed type.
    Indiana University Mathematics Journal **51** (2002) 1081–1109.

79. J O'Neil, N Kutz and B Sandstede.
    Theory and simulations of the dynamics and stability of actively modelocked lasers.
    IEEE Journal of Quantum Electronics **38** (2002) 1412–1419.

80. T Kapitula, N Kutz and B Sandstede.
    Stability of pulses in the master-modelocking equation.
    Journal of the Optical Society of America B **19** (2002) 740–746.

81. T Kapitula and B Sandstede.
    Edge bifurcations for near integrable systems via Evans function techniques.
    SIAM Journal on Mathematical Analysis **33** (2002) 1117–1143.

82. B Sandstede and A Scheel.
    On the structure of spectra of modulated travelling waves.
    Mathematische Nachrichten **232** (2001) 39–93.

83. R Moore, WL Kath, B Sandstede, CKRT Jones and JC Alexander.
    Stability of multiple pulses in optical fibers with phase-sensitive amplification and noise.
    Optics Communications **195** (2001) 127–139.

84. B Sandstede and A Scheel.
Essential instabilities of fronts: bifurcation, and bifurcation failure.
Dynamical Systems **16** (2001) 1–28.

85. B Sandstede and A Scheel.
On the stability of periodic travelling waves with large spatial period.
Journal of Differential Equations **172** (2001) 134–188.

86. B Sandstede and A Scheel.
Superspiral structures of meandering and drifting spiral waves.
Physical Review Letters **86** (2001) 171–174.

87. B Sandstede and A Scheel.
Absolute and convective instabilities of waves on unbounded and large bounded domains.
Physica D **145** (2000) 233–277.

88. B Sandstede and A Scheel.
Absolute versus convective instability of spiral waves.
Physical Review E **62** (2000) 7708–7714.

89. B Sandstede.
Center manifolds for homoclinic solutions.
Journal of Dynamics and Differential Equations **12** (2000) 449–510.

90. B Sandstede and A Scheel.
Gluing unstable fronts and backs together can produce stable pulses.
Nonlinearity **13** (2000) 1465–1482.

91. B Sandstede, S Balasuriya, CKRT Jones and P Miller.
Melnikov theory for finite-time vector fields.
Nonlinearity **13** (2000) 1357–1377.

92. GJ Lord, D Peterhof, B Sandstede and A Scheel.
Numerical computation of solitary waves in infinite cylindrical domains.
SIAM Journal on Numerical Analysis **37** (2000) 1420–1454.

93. B Sandstede and A Scheel.
Spectral stability of modulated travelling waves bifurcating near essential instabilities.
Proceedings of the Royal Society of Edinburgh A **130** (2000) 419–448.

94. AC Yew, B Sandstede and CKRT Jones.
Instability of multiple pulses in coupled nonlinear Schrodinger equations.
Physical Review E **61** (2000) 5886–5892.

95. B Sandstede and A Scheel.
Essential instability of pulses and bifurcations to modulated travelling waves.
Proceedings of the Royal Society of Edinburgh A **129** (1999) 1263–1290.

96. D Peterhof and B Sandstede.
All-optical clock recovery using multisection distributed-feedback lasers.
Journal of Nonlinear Science **9** (1999) 575–613.

97. B Sandstede, A Scheel and C Wulff.
Bifurcations and dynamics of spiral waves.
Journal of Nonlinear Science **9** (1999) 439–478.

98. T Kapitula and B Sandstede.
Stability of bright solitary-wave solutions to perturbed nonlinear Schrodinger equations.
Physica D **124** (1998) 58–103.

99. T Kapitula and B Sandstede.
    Instability mechanism for bright solitary-wave solutions to the cubic-quintic Ginzburg–Landau equation.
    Journal of the Optical Society of America B **15** (1998) 2757–2762.
100. U Bandelow, L Recke and B Sandstede.
    Frequency regions for forced locking of self-pulsating multi-section DFB lasers.
    Optics Communications **147** (1998) 212–218.
101. S Balasuriya, CKRT Jones and B Sandstede.
    Viscous perturbations of vorticity-conserving flows and separatrix splitting.
    Nonlinearity **11** (1998) 47–77.
102. B Sandstede.
    Stability of multiple-pulse solutions.
    Transactions of the American Mathematical Society **350** (1998) 429–472.
103. B Sandstede.
    Stability of N-fronts bifurcating from a twisted heteroclinic loop and an application to the FitzHugh–Nagumo equation.
    SIAM Journal on Mathematical Analysis **29** (1998) 183–207.
104. B Sandstede, A Scheel and C Wulff.
    Dynamics of spiral waves on unbounded domains using center-manifold reductions.
    Journal of Differential Equations **141** (1997) 122–149.
105. D Peterhof, B Sandstede and A Scheel.
    Exponential dichotomies for solitary-wave solutions of semilinear elliptic equations on infinite cylinders.
    Journal of Differential Equations **140** (1997) 266–308.
106. B Sandstede.
    Instability of localized buckling modes in a one-dimensional strut model.
    Philosophical Transactions of the Royal Society of London A **355** (1997) 2083–2097.
107. B Sandstede.
    Convergence estimates for the numerical approximation of homoclinic solutions.
    IMA Journal of Numerical Analysis **17** (1997) 437–462.
108. B Sandstede, CKRT Jones and JC Alexander.
    Existence and stability of N-pulses on optical fibers with phase-sensitive amplifiers.
    Physica D **106** (1997) 167–206.
109. B Sandstede.
    Constructing dynamical systems having homoclinic bifurcation points of codimension two.
    Journal of Dynamics and Differential Equations **9** (1997) 269–288.
110. JC Alexander, MG Grillakis, CKRT Jones and B Sandstede.
    Stability of pulses on optical fibers with phase-sensitive amplifiers.
    Zeitschrift für Angewandte Mathematik und Physik **48** (1997) 175–192.
111. B Sandstede, A Scheel and C Wulff.
    Center-manifold reduction for spiral waves.
    Comptes Rendus de l'Académie des Sciences I **324** (1997) 153–158.
112. M Krupa, B Sandstede and P Szmolyan.
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