Curriculum Vitae
of Tobias Hansson

RESEARCH POSITIONS

(2018-) Research fellow (biträdande universitetslektor), Department of Physics, Chemistry and Biology (IFM), Linköping University, Sweden

At present, I am a research fellow at Linköping University, Sweden. This position is funded by a starting grant from the Swedish Research Council. My research activities concern nonlinear optics, photonics and electromagnetic modeling, with particular emphasis on the theoretical modeling of the spatio-temporal dynamics of optical frequency combs, mode-locked lasers and microresonator devices.

(2017-2018) Postdoctoral researcher (assegnista di ricerca), Dipartimento di Ingegneria dell'Informazione, Università degli Studi di Brescia, Italy

Between July 2017 and May 2018 I worked as a postdoctoral fellow with the University of Brescia, Italy. During the part of this period, from November 2017 to May 2018, I was a Marie S.-Curie fellow with a grant from the MULTIPLY COFUND action. My research was primarily focused on modeling of the nonlinear dynamics of optical frequency combs in microresonator devices featuring cubic and quadratic nonlinearities.

(2016 - 2017) Postdoctoral researcher, Institut National de la Recherche Scientifique, Centre Énergie, Matériaux, Télécommunications, Canada

Between June 2016 and May 2017 I worked as a postdoctoral fellow in the ultra-fast optical processing group, led by Prof. Roberto Morandotti, at INRS-EMT in Canada. My research activities were concerned with the theoretical modeling of mode-locked lasers and microresonator feedback systems, as well as the study of light-matter interaction in biological suspensions.

(2014 - 2016) Postdoctoral researcher, Department of Applied Physics, Chalmers University of Technology, Sweden

Between June 2014 and May 2016, I worked as an International Postdoc with Chalmers University of

Technology in Sweden. This was a self-funded research position with a mobility requirement that part of the employment be spent abroad. During this period I worked in Italy (University of Brescia), Canada (INRS) and Sweden (Chalmers) on developing theory for the nonlinear dynamics of optical frequency combs in microresonator devices. I performed research on topics such as the modeling of microresonators with quadratic nonlinearities and the investigation of high-power comb generation beyond the mean-field approximation.

(2012 - 2014) Postdoctoral researcher (assegnista di ricerca), Dipartimento di Ingegneria dell'Informazione, Università degli Studi di Brescia, Italy

Between June 2012 and May 2014, I worked as a postdoctoral fellow at the University of Brescia, Italy. My research was mainly focused on the modeling of silicon based microresonator devices and wideband optical frequency comb generation for the mid-infrared spectral range. This work was done in collaboration with Prof. Stefan Wabnitz.

(2012) Project employed postdoctoral researcher at the department of Physics, Umeå University, Sweden

Following the completion of my PhD I held a short-term position as a visiting researcher at the Physics Department of Umeå University, Sweden. I worked on including optical polarization effects into a scalar Wigner formalism, in analogy with the inclusion of spin effects in the description of quantum plasmas.

(2007 - 2012) PhD position, Department of Earth and Space Sciences, Chalmers University of Technology, Sweden

During my PhD studies at Chalmers University of Technology I did theoretical worked on partially coherent optical waves in non-instantaneous nonlinear media. Most of my work was focused on applying the Wigner formalism of partial coherence that can be used to describe the self-trapping and formation of partially coherent spatial solitons in photorefractive crystals. In my research I managed among other things to show that the evolution equations describing partial coherent wave propagation are integrable using the inverse scatting method, and I developed a generalized dressing method for the explicit construction of partially coherent soliton solutions.

EDUCATION

(2011) Doctor of Philosophy, Chalmers University of Technology

After completing my MSc I was employed as a PhD student in nonlinear optics at the department of Earth and Space Sciences, Chalmers University of Technology, Sweden, in the Nonlinear Electrodynamics group under the supervision of Prof. Dan Anderson and Prof. Mietek Lisak. I completed the five-year PhD program in October 2011 after defending the thesis "Nonlinear theory of partially coherent optical waves", based on a collection of 9 of my research articles. During my PhD I also had the opportunity to participate in a number of international conferences and to work three months at the Nonlinear Physics Centre of the Australian National University, in Canberra, Australia.

(2006) Master of Science in Engineering Physics, Chalmers University of Technology

My undergraduate studies were carried out at Chalmers University of Technology in Gothenburg, Sweden. I obtained the Master of Science degree in Engineering Physics in 2006. The thesis work for this degree was on the subject of electromagnetic field theory and was completed during a six months stay at Dartmouth College, in Hanover, USA, under the supervision of Prof. Ulf Österberg. The thesis was entitled "Time-domain methods for optical propagation in dispersive media" and concerned the development and implementation of numerical time-domain methods, particularly finite difference time domain (FDTD).

RELATED PROFESSIONAL EXPERIENCE

As a part of my PhD employment I did systems administration work for Unix and Windows. I was the sole responsible for the planning and acquisition, installation and configuration as well as the daily maintenance of two servers and a dozen clients belonging to two research groups.

TEACHING

I have participated in teaching in a variety of courses at both the graduate and undergraduate level. During my master thesis work at Dartmouth College I worked as a teaching assistant for "Fourier Transforms and Complex Variables" and for "Numerical Methods in Computation". During my PhD employment at Chalmers University of Technology I worked as a teaching assistant for a course in "High-Frequency Technology" and as well as a laboratory assistant for several courses in "Electrical Measurement Techniques" and "Physics B".

GRANTS

In 2013 I won a two-year International Postdoc grant from the Swedish Research Council on "Theory and modeling of optical microresonator frequency combs". This grant is awarded to about 80 people a year and is open to researchers from all academic disciplines with a recent PhD from a Swedish university. The grant covers salary and research expenses and requires the recipient to be employed by a Swedish university but to work outside of Sweden during part of the grant period.

In 2015 I won a grant for a short-term research fellowship from Fonds de la Recherche du Québec - Nature et Technologies, Canada for the project "A mean-field formalism for optical microresonator sources with feedback". Work on the project was carried out during the autumn of 2015 at the Institut National de la Recherche Scientifique (INRS) in Montréal, Canada.

In 2017 I won a grant for a Marie S.-Curie postdoctoral fellowship within the MULTIPLY Programme, which is a Marie Skłodowska-Curie COFUND Action coordinated by Aston University. The fellowship was carried out during 2017-2018 at the University of Brescia in Italy.

In 2017 I won a starting grant from the Swedish Research Council. The title of my project is "QUADCOMB - Nonlinear dynamics of cubic and quadratic optical frequency combs".

PUBLICATIONS

1. *T. Hansson*, D. Anderson, M. Lisak, V. E. Semenov and U. Österberg, "Quasilinear evolution and saturation of the modulational instability of partially coherent optical waves," Phys. Rev. A **78**, 011807 (2008).

2. *T. Hansson*, D. Anderson, M. Lisak, V. E. Semenov and U. Österberg, "Propagation of partially coherent light beams with parabolic intensity distribution in noninstantaneous nonlinear Kerr media," J. Opt. Soc. Am. B, **25**, 1780 (2008).

3. A. V. Kim, S. A. Skobelev, D. Anderson, *T. Hansson* and M. Lisak, "Extreme nonlinear optics in a Kerr medium: exact soliton solutions for a few cycles," Phys. Rev. A 77, 043823 (2008).

4. V. Semenov, M. Lisak, D. Anderson, *T. Hansson*, L. Helczynski-Wolf and U. Österberg, "Mathematical basis for analysis of partially coherent wave propagation in nonlinear, non-instantaneous, Kerr media," J. Phys. A: Math. Theor. **41**, 335207 (2008).

5. *T. Hansson*, D. Anderson and M. Lisak, "Propagation of partially coherent solitons in saturable logarithmic media: a comparative analysis," Phys. Rev. A **80**, 033819 (2009).

6. H. Jeong, U. Österberg and *T. Hansson*, "Evolution of Sommerfeld and Brillouin precursors in intermediate spectral regimes," J. Opt. Soc. Am. B. **26,** 2455 (2009).

7. *T. Hansson*, D. Anderson and M. Lisak, "Soliton interaction in logarithmically saturable media," Opt. Comm. **283**, 318 (2010).

8. F. Cattani, A. Kim, *T. Hansson*, D. Anderson and M. Lisak, "Multihump soliton-like structures in interactions of lasers and Bose-Einstein condensates," Europhysics Lett. (EPL) **94**, 53003 (2011).

9. *T. Hansson*, D. Anderson, M. Desaix and M. Lisak, "Self-similar collapse and blow up of laser beams in nonlinear Kerr media – revisited," Opt. Comm. **284**, 3422 (2011).

10. *T. Hansson*, M. Lisak and D. Anderson, "Generalized dressing method for nonlinear evolution equations describing partially coherent wave propagation in noninstantaneous Kerr media," Phys. Rev. E **84**, 056601 (2011).

11. *T. Hansson*, M. Lisak and D. Anderson, "Integrability and conservation laws for the nonlinear evolution equations of partially coherent waves in noninstantaneous Kerr media," Phys. Rev. Lett. **108**, 063901 (2011)

12. *T. Hansson*, E. Wallin, G. Brodin and M. Marklund, "A scalar Wigner theory for polarized light in nonlinear Kerr media," J. Opt. Soc. Am. B **30**, 1765 (2013) (arXiv:1210.7107 [physics.optics]).

13. *T. Hansson*, D. Modotto and S. Wabnitz, "Dynamics of the modulational instability in microresonator frequency combs," Phys. Rev. A **88**, 023819 (2013) (arXiv:1306.5558 [physics.optics]).

14. *T. Hansson*, D. Modotto and S. Wabnitz, "On the numerical simulation of Kerr frequency combs using coupled mode equations," Opt. Comm. **312**, 134 (2013) (arXiv:1307.3428 [physics.optics]).

15. *T. Hansson*, D. Modotto, S. Wabnitz, "Nonlinear dynamics of comb generation in optical microresonators," Proceedings of SPIE - The International Society for Optical Engineering 8960 (2014).

16. A. Picozzi, J. Garnier, *T. Hansson*, P. Suret, S. Randoux, G. Millot, D.N. Christodoulides, "Optical wave turbulence: toward a unified nonequilibrium thermodynamic formulation of statistical nonlinear optics," Phys. Reports **542**, 1 (2014).

17. *T. Hansson*, D. Modotto, S. Wabnitz, "Analytical approach to the design of microring resonators for nonlinear four-wave mixing applications," J. Opt Soc. Am. B **31**, 1109 (2014).

18. *T. Hansson* and S. Wabnitz, "Bichromatically pumped microresonator frequency combs," Phys. Rev. A **90**, 013811 (2014) (arXiv:1404.2792 [physics.optics]).

19. *T. Hansson*, D. Modotto, S. Wabnitz, "Mid-infrared soliton and Raman frequency comb generation in silicon microrings," Opt. Lett. **39**, 6747 (2014) (arXiv:1404.3047 [physics.optics]).

20. *T. Hansson* and S. Wabnitz, "Frequency comb generation beyond the Lugiato-Lefever equation: multi-stability and super cavity solitons," J. Opt. Soc. Am. B **32**, 1259 (2015) (arXiv:1503.03274 [physics.optics]).

21. *T. Hansson*, D. Modotto, and S. Wabnitz, "Complex temporal dynamics in optical cavities," IEEE Proceedings: Spatiotemporal Complexity in Nonlinear Optics (SCNO) 2015 (2015).

22. F. Leo, *T. Hansson*, I. Ricciardi, M. De Rosa, S. Coen, S. Wabnitz, and M. Erkintalo, "Walk-off-induced modulation instability, temporal pattern formation, and frequency comb generation in cavity-enhanced second-harmonic generation," Phys. Rev. Lett. **116**, 033901 (2016) (arXiv:1510.04261 [physics.optics]).

23. F. Leo, *T. Hansson*, I. Ricciardi, M. De Rosa, S. Coen, S. Wabnitz, and M. Erkintalo, "Frequency comb formation in doubly resonant second-harmonic generation," Phys. Rev. A **93**, 043831 (2016) (arXiv:1602.03517 [physics.optics]).

24. *T. Hansson*, F. Leo, M. Erkintalo, J. Anthony, S. Coen, I. Ricciardi, M. De Rosa, and S. Wabnitz, "Single envelope equation modeling of multi-octave comb arrays in microresonators with quadratic and cubic nonlinearities," J. Opt. Soc. Am B **33**, 1207 (2016) (arXiv:1602.08087 [physics.optics]).

25. *T. Hansson* and S. Wabnitz, "Dynamics of microresonator frequency comb generation: models and stability," Nanophotonics **5**, 231 (2016).

26. D. Ceoldo, A. Bendahmane, J. Fatome, G. Millot, *T. Hansson*, D. Modotto, S. Wabnitz, and B. Kibler, "Multiple four-wave mixing and Kerr combs in a bichromatically pumped nonlinear fiber ring cavity," Opt. Lett. **41**, 5462 (2016).

27. J. M. Chávez Boggio, A. Ortega Moñux, D. Modotto, T. Fremberg, D. Bodenmüller, D. Giannone, M. M. Roth, *T. Hansson*, S. Wabnitz, E. Silvestre, and L. Zimmermann, "Dispersion-optimized multicladding silicon nitride waveguides for nonlinear frequency generation from ultraviolet to mid-infrared," J. Opt. Soc. Am. B **33**, 2402 (2016).

28. *T. Hansson*, F. Leo, M. Erkintalo, S. Coen, I. Ricciardi, M. De Rosa, and S. Wabnitz, "Singly resonant second-harmonic-generation frequency combs," Phys. Rev. A **95**, 013805 (2017).

29. M. Kues, C. Reimer, B. Wetzel, P. Roztocki, B. E. Little, S. T. Chu, *T. Hansson*, E. A. Viktorov, D. J. Moss, and R. Morandotti, "Passively mode-locked laser with an ultra-narrow spectral width," Nat. Photon. **11**, 159 (2017).

30. A. Bezryadina, *T. Hansson*, R. Gautam, B. Wetzel, G. Siggins, A. Kalmbach, J. Lamstein, D. Gallardo, E. J. Carpenter, A. Ichimura, R. Morandotti, and Z. Chen, "Nonlinear self-action of light through biological suspensions," Phys. Rev. Lett. **119**, (2017).

31. M. Parisi, N. Morais, I. Ricciardi, S. Mosca, *T. Hansson*, S. Wabnitz, G. Leo, and M. D. Rosa, "AlGaAs waveguide microresonators for efficient generation of quadratic frequency combs," J. Opt. Soc. Am. B **34**, 1842 (2017).

32. A. Pasquazi, M. Peccianti, L. Razzari, D. J. Moss, S. Coen, M. Erkintalo, Y. K. Chembo, *T. Hansson*, S. Wabnitz, P. Del'Haye, X. Xue, A. M. Weiner, and R. Morandotti, "Micro-combs: A novel generation of optical sources," Phys. Rep. **729**, 1 (2018).

33. *T. Hansson*, M. Bernard, and S. Wabnitz, "Modulational instability of nonlinear polarization mode coupling in microresonators," J. Opt. Soc. Am. B **35**, 835 (2018).

34. S. Mosca, M. Parisi, I. Ricciardi, F. Leo, *T. Hansson*, M. Erkintalo, P. Maddaloni, P. De Natale, S. Wabnitz, and M. De Rosa, "Modulation instability induced frequency comb generation in a continuously pumped optical parametric oscillator," Phys. Rev. Lett. **121**, 093903 (2018).

35. *T. Hansson*, P. Parra-Rivas, M. Bernard, F. Leo, L. Gelens, and S. Wabnitz, "Quadratic soliton combs in doubly resonant second-harmonic generation," Opt. Lett. **43**, 6033 (2018).

36. R. Gautam, Y. Xiang, J. Lamstein, Y. Liang, A. Bezryadina, G. Liang, *T. Hansson*, B. Wetzel, D. Preece, A. White, M. Silverman, S. Kazarian, J. Xu, R. Morandotti, and Z. Chen, "Optical force-induced nonlinearity and self-guiding of light in human red blood cell suspensions," Light Sci. Appl. **8**, 31 (2019).

37. P. Parra-Rivas, L. Gelens, *T. Hansson*, S. Wabnitz, and F. Leo, "Frequency comb generation through the locking of domain walls in doubly resonant dispersive optical parametric oscillators," Opt. Lett. **44**, 2004 (2019).

CONFERENCE CONTRIBUTIONS

1. H. Jeong, U. Österberg and *T. Hansson*, "Transitional characteristics of optical precursors between two different parameter regimes," Progress in Electromagnetics Research Symposium (PIERS), Cambridge USA, June 2008.

2. *T. Hansson*, D. Anderson, M. Lisak and V. Semenov, "Parabolic similarity solutions of the nonlinear Schrödinger and Wigner-Moyal equations," SIAM Conference on Nonlinear Waves and Coherent Structures, Rome Italy, July 2008.

3. *T. Hansson*, D. Anderson and M. Lisak, "Propagation of partially coherent light in nonlinear media," Progress in Electromagnetics Research Symposium (PIERS), Moscow Russia, August 2009.

4. *T. Hansson*, D. Anderson, M. Lisak, V. Semenov and U. Österberg, "Quasi-linear evolution and saturation of the modulational instability of partially coherent optical waves," The Second International Conference: Nonlinear Waves - Theory and Applications, Beijing China, June 2010.

5. *T. Hansson*, D. Modotto and S. Wabnitz, ``Dynamics of the modulational instability in microresonator frequency combs," The 2013 European Conference on Lasers and Electro-Optics and the International Quantum Electronics Conference (CLEO/Europe-IQEC), Munich Germany, May 2013.

6. S. Wabnitz, *T. Hansson* and D. Modotto, "Nonlinear dynamics of multiwave mixing in optical microcavities," The Third International Conference: Nonlinear Waves – Theory and Applications, Beijing China, June 2013 (invited talk).

7. *T. Hansson*, "Scalar Wigner formalism for polarized light in birefringent nonlinear Kerr media," Workshop on: Spatio-temporal complexity in optical fibers, Como Italy, September 2013.

8. *T. Hansson*, D. Modotto, S. Wabnitz, "Nonlinear dynamics of comb generation in optical microresonators," LASE 2014 - SPIE Photonics West, San Francisco USA, February 2014 (invited talk).

9. *T. Hansson* and S. Wabnitz, "Dual pump microresonator frequency comb generation and optical buffer memories," ECIO-MOC 2014 – European Conference on Integrated Optics, Nice France, June 2014.

10. *T. Hansson*, "Modeling the dynamics of frequency comb generation and design of planar microring resonators," Advanced Photonics Congress - Nonlinear Photonics 2014, Barcelona Spain, July 2014 (invited talk).

11. *T. Hansson*, D. Modotto and S. Wabnitz, "Dynamics of frequency comb generation and design of planar microring resonators," SIAM Conference on Nonlinear Waves and Coherent Structures, Cambridge UK, August 2014.

12. *T. Hansson*, D. Modotto and S. Wabnitz, "Mid-infrared octave spanning frequency comb generation in silicon microrings," 40th European Conference on Optical Communication (ECOC), Cannes France, September 2014.

13. *T. Hansson* and S. Wabnitz, "Optical frequency comb generation beyond the Lugiato-Lefever equation," The 2015 Conference on Lasers and Electro-Optics Europe & the European Quantum Electronics Conference (CLEO/Europe-EQEC 2015), Munich Germany, June 2015.

14. N. Morais, O. Stepanenko, A. Lemaître, C. Gomez, *T. Hansson*, G. Leo and S. Wabnitz, "Towards telecom frequency comb generation in AlGaAs microrings," The 2015 Conference on Lasers and Electro-Optics Europe & the European Quantum Electronics Conference (CLEO/Europe-EQEC 2015), Munich Germany, June 2015.

15. *T. Hansson* and S. Wabnitz, "Multi-stability and super cavity solitons in microresonator frequency combs," Advanced Photonics 2015, Boston USA, June 2015.

16. *T. Hansson* and S. Wabnitz, "Stability of microresonator soliton frequency combs," Photonica 2015, Belgrade Serbia, August 2015.

17. M. Parisi, I. Ricciardi, S. Mosca, P. Maddaloni, L. Santamaria, *T. Hansson*, S. Wabnitz, P. De Natale and M. De Rosa, "Direct generation of optical frequency combs in $\chi(2)$ nonlinear cavities," INO Annual Symposium 2015, Naples Italy, November 2015.

18. F. Leo, *T. Hansson*, I. Ricciardi, M. De Rosa, S. Coen, S. Wabnitz and M. Erkintalo, "Modulation instabilities, temporal patterns and frequency comb generation in quadratic nonlinear resonators," INO Annual Symposium 2015, Naples Italy, November 2015.

19. *T. Hansson*, F. Leo, M. Erkintalo, S. Coen, I. Ricciardi, M. D. Rosa, and S. Wabnitz, "Single envelope equation modelling of frequency comb generation in quadratic and cubic nonlinear resonators," Conference on Lasers and Electro-Optics (CLEO), San Jose USA, June 2016.

20. F. Leo, *T. Hansson*, I. Ricciardi, M. D. Rosa, S. Coen, S. Wabnitz, and M. J. Erkintalo, "Theory of frequency comb generation in cavity enhanced second harmonic generation," Conference on Lasers and Electro-Optics (CLEO), San Jose USA, June 2016.

21. M. Erkintalo, F. Leo, *T. Hansson*, K. E. Webb, S. G. Murdoch, J. Anthony, I. Ricciardi, M. D. Rosa, S. Wabnitz, and S. Coen, "Numerical modelling of frequency comb generation in nonlinear resonators," 2016 International Conference on Numerical Simulation of Optoelectronic Devices (NUSOD) (2016), Sydney Australia, July 2016.

22. *T. Hansson*, F. Leo, M. Erkintalo, S. Coen, I. Ricciardi, M. D. Rosa, and S. Wabnitz, "Theory of quadratic optical frequency combs," 2016 18th International Conference on Transparent Optical Networks (ICTON), Trento Italy, July 2016.

23. M. J. Erkintalo, *T. Hansson*, I. Ricciardi, S. Coen, M. D. Rosa, S. Wabnitz, and F. Leo, "Frequency combs in quadratically nonlinear resonators," Nonlinear Photonics 2016, Sydney Australia, September 2016.

24. D. Ceoldo, A. Bendahmane, J. Fatome, G. Millot, *T. Hansson*, D. Modotto, S. Wabnitz, and B. Kibler, "Kerr frequency combs in a bichromatically pumped nonlinear fiber ring cavity," ECOC 2016; 42nd European Conference on Optical Communication, Dusseldorf Germany, September 2016.

25. M. Parisi, I. Ricciardi, S. Mosca, N. Morais, *T. Hansson*, S. Wabnitz, G. Leo, and M. De Rosa, "Directional quasi-phase matching AlGaAs waveguide microresonators for efficient generation of quadratic frequency combs," SPIE Photonics West, San Francisco USA, January 2017.

26. S. Wabnitz, *T. Hansson*, F. Leo, I. Ricciardi, M. De Rosa, S. Coen, and M. Erkintalo, "Nonlinear dynamics of optical frequency combs," SPIE Optics + Optoelectronics, Prague Czech Republic, April 2017.

27. J. Lamstein, R. Gautam, *T. Hansson*, A. Bezryadina, B. Wetzel, R. Morandotti, and Z. Chen, "Deep penetration of light through suspensions of red blood cells," Conference on Lasers and Electro-Optics (CLEO), San Jose USA, May 2017.

28. M. Kues, C. Reimer, B. Wetzel, P. Roztocki, B. Little, S. Chu, *T. Hansson*, E. Viktorov, D. J. Moss, and R. Morandotti, "An ultra-narrow spectral width passively mode-locked laser," Conference on Lasers and Electro-Optics (CLEO), San Jose USA, May 2017.

29. S. Mosca, M. Parisi, I. Ricciardi, F. Leo, *T. Hansson*, M. Erkintalo, P. Maddaloni, P. De Natale, S. Wabnitz, and M. De Rosa, "Frequency comb generation in a continuously pumped optical parametric oscillator," SPIE Photonics West, San Francisco USA, January 2018.

30. *T. Hansson*, M. Bernard, and S. Wabnitz, "Polarization Effects and Nonlinear Mode Coupling in Kerr Microresonators," Conference on Lasers and Electro-Optics (CLEO), San Jose USA, May 2018.

31. A. Bezryadina, R. Gautam, Y. Xiang, J. Lamstein, Y. Liang, N. Perez, *T. Hansson*, B. Wetzel, R. Morandotti, and Z. Chen, "Waveguides of Light through Red Blood Cells," Biophotonics Congress: Optics in the Life Sciences Congress 2019, Tucson USA, April 2019.

32. *T. Hansson*, P. Parra-Rivas, M. Bernard, F. Leo, L. Gelens, and S. Wabnitz, "Quadratic cavity soliton optical frequency combs," Conference on Lasers and Electro-Optics (CLEO), San Jose USA, May 2019.

BOOK CHAPTERS

1. *T. Hansson*, A. Tonello, S. Trillo, and S. Wabnitz "Chapter 1: Modulation instability, four-wave mixing and their applications," in "Shaping light in nonlinear optical fibers," edited by S. Boscolo and C. Finot, Wiley 2017.