

Publication list

Journal papers and book chapters

1. [A. Jiang, A. Matyas, K. Vijayraghavan, C. Jirauschek, Z. Wasilewski, and M. A. Belkin, "Experimental investigation of terahertz quantum cascade laser with variable barrier heights," J. Appl. Phys. **115**, 163103 \(2014\).](#)
2. [C. Jirauschek and T. Kubis, "Modeling techniques for quantum cascade lasers," Appl. Phys. Rev. **1**, 011307 \(2014\).](#)
3. [C. M. Eigenwillig, W. Wieser, S. Todor, B. R. Biedermann, T. Klein, C. Jirauschek, and R. Huber, "Picosecond pulses from wavelength-swept continuous-wave Fourier domain mode-locked lasers," Nature Commun. **4**, 1848 \(2013\).](#)
4. [C. Jirauschek, A. Matyas, P. Lugli, and M.-C. Amann, "Monte Carlo study of terahertz difference frequency generation in quantum cascade lasers," Opt. Express **21**, 6180–6185 \(2013\).](#)
5. [A. Matyas, P. Lugli, and C. Jirauschek, "Role of collisional broadening in Monte Carlo simulations of terahertz quantum cascade lasers," Appl. Phys. Lett. **102**, 011101 \(2013\).](#)
6. [M. Bareiß, D. Kälblein, C. Jirauschek, A. Exner, I. Pavlichenko, B. Lotsch, U. Zschieschang, H. Klauk, G. Scarpa, B. Fabel, W. Porod, and P. Lugli, "Ultra-thin titanium oxide," Appl. Phys. Lett. **101**\(8\), 083113 \(2012\).](#)
7. [A. Matyas, R. Chashmahcharagh, I. Kovacs, P. Lugli, K. Vijayraghavan, M. A. Belkin, and C. Jirauschek, "Improved terahertz quantum cascade laser with variable height barriers," J. Appl. Phys. **111**, 103106 \(2012\).](#)
8. [M. Bareiß, F. Ante, D. Kälblein, G. Jegert, C. Jirauschek, G. Scarpa, B. Fabel, E. M. Nelson, G. Timp, U. Zschieschang, H. Klauk, W. Porod, and P. Lugli, "High-yield transfer printing of metal–insulator–metal nanodiodes," ACS Nano **6**\(3\), 2853–2859 \(2012\).](#)
9. [S. Todor, B. Biedermann, R. Huber, and C. Jirauschek, "Balance of Physical Effects Causing Stationary Operation of Fourier Domain Mode-Locked Lasers," J. Opt. Soc. Am. B **29**, 656–664 \(2012\).](#)
10. [S. Fathololoumi, E. Dupont, C. W. I. Chan, Z. R. Wasilewski, S. R. Laframboise, D. Ban, A. Mátyás, C. Jirauschek, Q. Hu, and H. C. Liu, "Terahertz quantum cascade lasers operating up to ~200 K with optimized oscillator strength and improved injection tunneling," Opt. Express **20**, 3866–3876 \(2012\).](#)
11. [A. Mátyás, P. Lugli, and C. Jirauschek, "Photon-induced carrier transport in high efficiency midinfrared quantum cascade lasers," J. Appl. Phys. **110**, 013108 \(2011\).](#)
12. [C. Jirauschek and F. Ö. Ilday, "Semianalytic theory of self-similar optical propagation and mode locking using a shape-adaptive model pulse," Phys. Rev. A **83**, 063809 \(2011\).](#)
13. [S. Todor, B. Biedermann, W. Wieser, R. Huber, and C. Jirauschek, "Instantaneous lineshape analysis of Fourier domain mode-locked lasers," Opt. Express **19**, 8802–8807 \(2011\).](#)
14. [A. Mátyás, C. Jirauschek, F. Peretti, P. Lugli, and G. Csaba, "Linear circuit models for on-chip quantum electrodynamics," IEEE Trans. Microwave Theory Tech. **59**, 65–71 \(2011\).](#)
15. [C. Jirauschek, "Monte Carlo study of intrinsic linewidths in terahertz quantum cascade lasers," Opt. Express **18**, 25922–25927 \(2010\).](#)

16. [V.-M. Gkortsas, C. Wang, L. Kuznetsova, L. Diehl, A. Gordon, C. Jirauschek, M. A. Belkin, A. Belyanin, F. Capasso, and F. X. Kärtner, "Dynamics of actively mode-locked quantum cascade lasers," *Opt. Express* **18**, 13616–13630 \(2010\).](#)
17. [A. Mátyás, M. A. Belkin, P. Lugli, and C. Jirauschek, "Temperature performance analysis of terahertz quantum cascade lasers: Vertical versus diagonal designs," *Appl. Phys. Lett.* **96**, 201110 \(2010\).](#)
18. [C. Jirauschek, "Monte Carlo study of carrier-light coupling in terahertz quantum cascade lasers," *Appl. Phys. Lett.* **96**, 011103 \(2010\).](#)
19. [C. Jirauschek, A. Mátyás, and P. Lugli, "Modeling bound-to-continuum terahertz quantum cascade lasers: The role of Coulomb interactions," *J. Appl. Phys.* **107**, 013104 \(2010\).](#)
20. [C. Jirauschek, B. Biedermann, and R. Huber, "A theoretical description of Fourier domain mode locked lasers," *Opt. Express* **17**, 24013–24019 \(2009\).](#)
21. [A. Mátyás, T. Kubis, P. Lugli, and C. Jirauschek, "Carrier transport in THz quantum cascade lasers: Are Green's functions necessary?," *Journal of Physics: Conference Series* **193**, 012026 \(2009\).](#)
22. [C. Jirauschek, A. Mátyás, and P. Lugli, "Importance of Coulomb interactions in bound-to-continuum THz quantum cascade lasers," *Journal of Physics: Conference Series* **193**, 012062 \(2009\).](#)
23. [A. Mátyás, T. Kubis, P. Lugli, and C. Jirauschek, "Comparison between semiclassical and full quantum transport analysis of THz quantum cascade lasers," *Physica E* **42**, 2628–2631 \(2010\).](#)
24. [C. Jirauschek, "Accuracy of transfer matrix approaches for solving the effective mass Schrödinger equation," *IEEE J. Quantum Electron.* **45**, 1059–1067 \(2009\).](#)
25. [C. Jirauschek and P. Lugli, "Monte-Carlo-based spectral gain analysis for terahertz quantum cascade lasers," *J. Appl. Phys.* **105**, 123102 \(2009\).](#)
26. [P. Lugli, C. Jirauschek, and G. Scarpa, "Terahertz nanoelectronics," *International Journal of Microwave and Optical Technology*, IJMOT-2008-5-37 \(2008\).](#)
27. [C. Jirauschek and P. Lugli, "MC simulation of double-resonant-phonon depopulation THz QCLs for high operating temperatures," *J. Comput. Electron.* **7**, 436–439 \(2008\).](#)
28. [C. Jirauschek and P. Lugli, "Limiting factors for high temperature operation of THz quantum cascade lasers," *phys. stat. sol. \(c\)* **5**, 221-224 \(2008\).](#)
29. [C. Jirauschek, G. Scarpa, P. Lugli, M. S. Vitiello, and G. Scamarcio, "Comparative analysis of resonant phonon THz quantum cascade lasers," *J. Appl. Phys.* **101**, 086109 \(2007\).](#)
30. [C. Y. Wang, L. Diehl, A. Gordon, C. Jirauschek, F. X. Kärtner, A. Belyanin, D. Bour, S. Corzine, G. Höfler, M. Troccoli, J. Faist, and F. Capasso, "Coherent instabilities in a semiconductor laser with fast gain recovery," *Phys. Rev. A* **75**, 031802\(R\) \(2007\).](#)
31. [K. S. Kalogerakis, B. Blehm, R. Forman, C. Jirauschek, and G. W. Faris, "Stimulated Rayleigh and Brillouin scattering in a supercritical fluid," *J. Opt. Soc. Am. B* **24**, 2040–2045 \(2007\).](#)
32. [C. Jirauschek, G. Scarpa, P. Lugli, and M. Manenti, "Monte Carlo Simulation of Resonant Phonon THz Quantum Cascade Lasers," *J. Comput. Electron.* **6**, 267–270 \(2007\).](#)
33. [A. Gordon, C. Jirauschek, and F. X. Kärtner, "Scaling of keV HHG photon yield with drive wavelength," in *Ultrafast Optics V*, Springer Verlag, p. 459 ff., 2007.](#)
34. [C. Jirauschek and F. X. Kärtner, "Gaussian pulse dynamics in gain media with Kerr nonlinearity," *J. Opt. Soc. Am. B* **23**, 1776–1784 \(2006\).](#)

35. A. Gordon, C. Jirauschek, and F. X. Kärtner, “Numerical solver of the time-dependent Schrödinger equation with Coulomb singularities,” *Phys. Rev. A* **73**, 042505 (2006).
36. C. Jirauschek, L. Duan, O. D. Mücke, F. X. Kärtner, M. Wegener, and U. Morgner, “Carrier-envelope phase sensitive inversion in two-level systems,” *J. Opt. Soc. Am. B* **22**, 2065–2075 (2005).
37. A. Soibel, F. Capasso, C. Gmachl, M. L. Peabody, A. M. Sergent, R. Paiella, H. Y. Hwang, D. L. Sivco, A. Y. Cho, H. C. Liu, C. Jirauschek, and F. X. Kärtner, “Active mode-locking of broadband quantum cascade lasers,” *IEEE J. Quantum Electron.* **40**, 844–851 (2004).
38. C. Jirauschek, U. Morgner, and F. X. Kärtner, “Spatiotemporal Gaussian pulse dynamics in Kerr-lens mode-locked lasers,” *J. Opt. Soc. Am. B* **20**, 1356–1368 (2003).
39. C. Jirauschek, U. Morgner, and F. X. Kärtner, “Variational analysis of spatio-temporal pulse dynamics in dispersive Kerr media,” *J. Opt. Soc. Am. B* **19**, 1716–1721 (2002).
40. C. Jirauschek, E. M. Jeffrey, and G. W. Faris, “Electrostrictive and thermal stimulated Rayleigh spectroscopy in liquids,” *Phys. Rev. Lett.* **87**, 233902 (2001).
41. G. W. Faris, M. Gerken, C. Jirauschek, D. Hogan, and Y. Chen, “High spectral resolution stimulated Rayleigh/Brillouin scattering at 1 micron,” *Opt. Lett.* **26**, 1894–1896 (2001).
42. F. X. Kärtner, U. Morgner, R. Ell, C. Jirauschek, G. Metzler, T. R. Schibli, Y. Chen, H. A. Haus, E. P. Ippen, J. G. Fujimoto, V. Scheuer, G. Angelow, and T. Tschudi, “Challenges and limitations on generating few cycle laser pulses directly from oscillators,” in *Ultrafast Phenomena XII*, Springer Verlag, p. 51–55, 2000.

Conferences

43. G. P. Szakmany, A. O. Orlov, G. H. Bernstein, W. Porod, M. Bareiss, P. Lugli, J. A. Russer, C. Jirauschek, P. Russer, M. T. Ivrlač, and J. A. Nossek, “Nano-Antenna Arrays for the Infrared Regime,” Workshop on Smart Antennas (WSA 2014), accepted.
44. C. Jirauschek, “Monte Carlo study of carrier-light interaction and THz difference frequency generation in quantum cascade lasers,” 12th International Conference on Intersubband Transitions in Quantum Wells (ITQW 2013), invited talk, Bolton Landing, NY, USA, September 15-20 2013.
45. C. Jirauschek and P. Russer, “Photon Assisted Tunneling in MOM Diodes,” International Conference on Nonlinear Dynamics of Electronic Systems (NDES 2013), Talk, Bari, Italy, July 10–12 2013.
46. A. Jiang, K. Vijayraghavan, A. Matyas, C. Jirauschek, Z. Wasilewski, and M. A. Belkin, “Terahertz Quantum Cascade Laser Performance for Structures with Variable Barrier Heights,” IEEE/OSA Conference on Lasers and Electro-Optics (CLEO 2013), Talk JTU1J.7, San Jose (CA), USA, June 9–14 2013 (CLEO conference proceedings, Optical Society of America, ISBN 978-1-55752-972-5, doi: 10.1364/CLEO_SI.2013.JTu1J.7).
47. C. M. Eigenwillig, S. Todor, W. Wieser, B. R. Biedermann, T. Klein, C. Jirauschek, and R. Huber, “Picosecond pulses from an FDML laser,” Ultrafast Optics Conference 2013 (UFO IX), Poster MoP.12, Davos, Switzerland, March 2–8 2013.
48. M. A. Belkin, K. Vijayraghavan, A. Vizbaras, A. Jiang, F. Demmerle, G. Boehm, R. Meyer, M. -C. Amann, A. Matyas, R. Chashmahcharagh, P. Lugli, C. Jirauschek, and Z. R. Wasilewski, “THz quantum cascade lasers for operation above cryogenic temperatures”, SPIE Photonics West, Talk 8640-40 (invited), San Francisco (CA), USA, February 2–7 2013

(Novel In-Plane Semiconductor Lasers XII, Proceedings of SPIE **8640**, 864014, doi:10.1117/12.200085).

49. Z. R. Wasilewski, E. Dupont, S. Fatholouloumi, S. R. Laframboise, C. W. I. Chan, H. C. Liu, A. Mátyás, M. Lindskog, S. G. Razavipour, K. Vijay, D. Ban, Q. Hu, C. Jirauschek, A. Wacker, and M. A. Belkin, “MBE growth and optimization of THz quantum cascade lasers: towards high temperature operation,” 11th International Conference on Infrared Optoelectronics: Materials and Devices (MIOMD-XI), invited talk, Chicago (IL), USA, September 4–8 2012.
50. C. Jirauschek and P. Russer, “Hamiltonian Formulations for Lossy Nonlinear Quantum Circuits,” International Conference on Nonlinear Dynamics of Electronic Systems (NDES 2012), Wolfenbüttel, Germany, July 11–13 2012 (IEEE Xplore, VDE Conference Proceedings: *Nonlinear Dynamics of Electronic Systems, Proceedings of NDES 2012*, ISBN 978-3-8007-3444-3).
51. P. Lugli, A. Mátyás, and C. Jirauschek, “Monte Carlo Simulation of THz Quantum Cascade Lasers,” IEEE MTT-S International Microwave Symposium, Talk WME-6, Montréal, Canada, June 17–22 2012.
52. C. Eigenwillig, S. Todor, W. Wieser, B. Biedermann, T. Klein, C. Jirauschek, and R. Huber, “Picosecond pulses from an FDML laser,” IEEE/OSA Conference on Lasers and Electro-Optics (CLEO 2012), Talk CF1N.1, San Jose (CA), USA, May 6–11 2012 (IEEE Conference Proceedings: *2012 Conference on Lasers and Electro-Optics (CLEO)*, ISBN 978-1-4673-1839-6).
53. S. Fatholouloumi, E. Dupont, I. Chan, Z. Wasilewski, S. Laframboise, D. Ban, A. Matyas, C. Jirauschek, Q. Hu, and H.C. Liu, “199.5 K Operation of THz Quantum Cascade Lasers,” IEEE/OSA Conference on Lasers and Electro-Optics (CLEO 2012), Talk CTu2B.1, San Jose (CA), USA, May 6–11 2012 (IEEE Conference Proceedings: *2012 Conference on Lasers and Electro-Optics (CLEO)*, ISBN 978-1-4673-1839-6).
54. C. Jirauschek and A. Mátyás, “Intrinsic linewidth analysis for terahertz quantum cascade lasers,” Intersubband Transitions in Quantum Wells (ITQW 11), Talk Session “Device Physics”, Sardinia, Italy, September 11–17 2011.
55. A. Mátyás, P. Lugli, and C. Jirauschek, “Contribution of lasing action to the current of high power mid-infrared quantum cascade lasers,” Intersubband Transitions in Quantum Wells (ITQW 11), Talk Session “Device Physics”, Sardinia, Italy, September 11–17 2011.
56. A. Mátyás, P. Lugli, and C. Jirauschek, “Modeling of high-efficiency midinfrared quantum cascade lasers,” Electron Dynamics In Semiconductors, Optoelectronics and Nanostructures (EDISON 17), Talk M1.3, Santa Barbara, CA, USA, August 8–12 2011.
57. C. Jirauschek and F. Ö. Ilday, “Semi-analytic theory of similariton amplifiers and laser oscillators using a shape-adaptive model pulse,” Nonlinear Optics (NLO 2011), Talk NThC2, Lihue (HI), USA, July 17–22 2011 (in *Nonlinear Optics: Materials, Fundamentals and Applications*, OSA Technical Digest (CD) (Optical Society of America, 2011)).
58. A. Mátyás, S. Katz, S. Söntges, A. Vizbaras, P. Lugli, M. C. Amann, and C. Jirauschek, “Coupled carrier-field Monte-Carlo analysis of mid-IR quantum cascade lasers,” 14th International Workshop on Computational Electronics (IWCE-14), Talk Session “Optoelectronics”, Pisa, Italy, October 27–29 2010 (IEEE Conference Proceedings: *2010 14th International Workshop on Computational Electronics (IWCE)*, ISBN 978-1-4244-9383-8, doi: 10.1109/IWCE.2010.5677984).

59. C. Jirauschek, “Monte Carlo analysis of carrier-light coupling in quantum cascade lasers,” International Quantum Cascade Lasers School & Workshop (IQCLSW 2010), Talk Session “Modelling and simulation I&II” (invited), Florence, Italy, August 30 - September 03 2010.
60. C. Jirauschek and A. Mátyás, “Self-consistent analysis of lasing action in THz quantum cascade lasers,” OSA Advanced Photonics Congress – Nonlinear Photonics (NP 2010), Talk NWB5, Karlsruhe, Germany, June 21–24 2010 (in *Nonlinear Photonics*, OSA Technical Digest (CD) (Optical Society of America, 2010)).
61. S. Todor, B. Biedermann, R. Huber, and C. Jirauschek, “Analysis of the optical dynamics in Fourier domain mode-locked lasers,” OSA Advanced Photonics Congress – Optical Sensors (Sensors 2010), Talk SWC4, Karlsruhe, Germany, June 21–24 2010 (in *Optical Sensors*, OSA Technical Digest (CD) (Optical Society of America, 2010)).
62. S. Todor, C. Jirauschek, B. Biedermann, and R. Huber, “Linewidth optimization of Fourier domain mode-locked lasers,” IEEE/OSA Conference on Lasers and Electro-Optics (CLEO 2010), Talk CMW7, San Jose (CA), USA, May 16–21 2010 (IEEE Conference Proceedings: *2010 Conference on Lasers and Electro-Optics (CLEO) and Quantum Electronics and Laser Science Conference (QELS)*, ISBN 978-1-55752-890-2).
63. A. Mátyás, C. Jirauschek, P. Lugli, and T. Kubis, “Carrier transport in THz quantum cascade lasers: Are Green's functions necessary?,” Electron Dynamics In Semiconductors, Optoelectronics and Nanostructures (EDISON 16), Talk Mo-D3, Montpellier, France, August 24–28 2009.
64. C. Jirauschek, A. Mátyás, and P. Lugli, “Importance of Coulomb interactions in bound-to-continuum THz quantum cascade lasers,” Electron Dynamics In Semiconductors, Optoelectronics and Nanostructures (EDISON 16), Poster Th-P30, Montpellier, France, August 24–28 2009.
65. A. Mátyás, C. Jirauschek, P. Lugli, and T. Kubis, “Comparison between semiclassical and quantum carrier transport,” International Conference on Modulated Semiconductor Structures (MSS-14), Poster Tu-mP36, Kobe, Japan, July 19–24 2009.
66. C. Jirauschek and P. Lugli, “Monte-Carlo-Based Spectral Gain Analysis for THz Quantum Cascade Lasers,” IEEE/OSA Conference on Lasers and Electro-Optics (CLEO 2009), Poster JThE30, Baltimore (MD), USA, May 31–June 5 2009 (in *Conference on Lasers and Electro-Optics/International Quantum Electronics Conference*, OSA Technical Digest (CD) (Optical Society of America, 2009)).
67. V.-M. Gkortsas, A. Gordon, C. Jirauschek, C. Wang, L. Kuznetsova, L. Diehl, M. A. Belkin, A. Belyanin, F. Capasso, and F. X. Kärtner, “Spatial Hole Burning in Actively Mode-Locked Quantum Cascade Lasers,” IEEE/OSA Conference on Lasers and Electro-Optics (CLEO 2009), Talk CThL6, Baltimore (MD), USA, May 31–June 5 2009 (IEEE Conference Proceedings: *2009 Conference on Lasers and Electro-Optics, and Quantum Electronics and Laser Science Conference*, ISBN 978-1-55752-869-8).
68. C. Jirauschek, “Carrier transport modeling in quantum cascade lasers,” International Quantum Cascade Lasers School & Workshop (IQCLSW 2008), Talk Session “Non-linear properties and modeling” (invited), Monte Verita, Switzerland, September 14–19 2008.
69. C. Jirauschek, C. Eigenwillig, B. Biedermann, and R. Huber, “Fourier domain mode locking theory,” IEEE/OSA Conference on Lasers and Electro-Optics (CLEO 2008), Talk CTuFF2, San Jose (CA), USA, May 4–9 2008 (IEEE Xplore, IET Conference Proceedings: *2008 Conference on Lasers and Electro-Optics and Quantum Electronics and Laser Science Conference (CLEO/QELS)*, ISBN 978-1-55752-859-9).

70. P. Lugli, C. Jirauschek, and G. Scarpa, "Terahertz electronics," 11th International Symposium on Microwave and Optical Technology (ISMOT-2007), Plenary Talk, Monte Porzio Catone, Italy, December 17–21 2007.
71. C. Jirauschek and P. Lugli, "MC simulation of double-resonant-phonon depopulation THz QCLs for high operating temperatures," 12th International Workshop on Computational Electronics (IWCE-12), Talk Session 7, Amherst (MA), USA, October 8–10 2007.
72. C. Jirauschek and P. Lugli, "Limiting factors for high temperature operation of THz quantum cascade lasers," 15th International Conference on Nonequilibrium Carrier Dynamics in Semiconductors (HCIS 15), Talk TuC-2, Tokyo, Japan, July 23–27 2007.
73. C. Jirauschek and P. Lugli, "Limiting factors for high temperature operation of THz quantum cascade lasers," IEEE/OSA Conference on Lasers and Electro-Optics (CLEO 2007), Talk CWG2, Baltimore (MD), USA, May 6–11 2007 (IEEE Conference Proceedings: *2007 Conference on Lasers and Electro Optics and 2007 Quantum Electronics and Laser Science Conference (CLEO/QELS)*, ISBN 978-1-55752-834-6, doi: 10.1109/CLEO.2007.4453163).
74. C. Jirauschek, G. Scarpa, P. Lugli, M. S. Vitiello, and G. Scamarcio, "Comparative analysis of THz quantum cascade lasers," IEEE/OSA Conference on Lasers and Electro-Optics (CLEO 2007), Talk CTuO7, Baltimore (MD), USA, May 6–11 2007 (IEEE Conference Proceedings: *2007 Conference on Lasers and Electro Optics and 2007 Quantum Electronics and Laser Science Conference (CLEO/QELS)*, ISBN 978-1-55752-834-6, doi: 10.1109/CLEO.2007.4453055).
75. F. Capasso, C. Y. Wang, A. Gordon, F. X. Kaertner, C. Jirauschek, L. Diehl, A. Belyanin, and J. Faist, "Coherent phenomena in high power quantum cascade lasers," 19th Annual Meeting of the IEEE Lasers & Electro-Optics Society (LEOS 2006), Talk MA1 (invited), 29 October – 2 November 2006, Montreal, Canada.
76. F. Ö. Ilday and C. Jirauschek, "High-power ultrafast fiber lasers: from solitons to similaritons," 6th International Conference of the Balkan Physical Union (BPU-6), Istanbul, Turkey, 22–26 August 2006.
77. C. Jirauschek, M. Manenti, G. Scarpa, and P. Lugli, "MC simulation of THz quantum cascade lasers," 11th International Workshop on Computational Electronics (IWCE-11), Talk Session 6, Vienna, Austria, 25–27 May 2006.
78. C. Jirauschek and F. Ö. Ilday, "Theory of the self-similar laser oscillator," IEEE/OSA Conference on Lasers and Electro-Optics (CLEO 2006), Poster CMN4, Long Beach (CA), USA, May 21–26 2006 (IEEE Conference Proceedings: *Conference on Lasers and Electro-Optics, 2006 and 2006 Quantum Electronics and Laser Science Conference. CLEO/QELS 2006*. ISBN 978-1-55752-813-1, doi: 10.1109/CLEO.2006.4628785).
79. C. Y. Wang, L. Diehl, A. Gordon, C. Jirauschek, F. Capasso, F. Kärtner, A. Belyanin, D. Bour, S. Corzine, G. Höfler, M. Troccoli, P. Grant, H. C. Liu, and J. Faist, "Coherent instabilities and self-pulsations in quantum cascade lasers," IEEE/OSA Quantum Electronics and Laser Science (QELS 2006), Talk JWB65, Long Beach (CA), USA, May 21–26 2006 (IEEE Conference Proceedings: *Conference on Lasers and Electro-Optics, 2006 and 2006 Quantum Electronics and Laser Science Conference. CLEO/QELS 2006*. ISBN 978-1-55752-813-1, doi: 10.1109/CLEO.2006.4627831).
80. K. S. Kalogerakis, B. Blehm, R. Forman, C. Jirauschek, and G. W. Faris, "Stimulated Rayleigh and Brillouin scattering in supercritical fluids," *Frontiers in Optics/Laser Science (FiO/LS 2005)*, Talk JWA77, Tucson (AZ), USA, October 16–20, 2005 (in *Frontiers in Optics*, OSA Technical Digest Series (Optical Society of America, 2005)).

81. A. Gordon, C. Jirauschek, and F. X. Kärtner, "Scaling of keV HHG photon yield with drive wavelength," Joint Conference on Ultrafast Optics V and Applications of High Field and Short Wavelength Sources XI (UFO/HSFW 2005), Talk F1-4, Nara, Japan, September 25–30, 2005.
82. C. Jirauschek, F. Ö. Ilday, and F. X. Kärtner, "A semi-analytic theory of the self-similar laser oscillator," Nonlinear Guided Waves and Their Applications (NLGW 2005), Talk WC4, Dresden, Germany, September 6–9, 2005 (in *Nonlinear Guided Waves and Their Applications*, Technical Digest (CD) (Optical Society of America, 2005)).
83. A. Soibel, F. Capasso, C. Gmachl, M. Peabody, A. M. Sergent, R. Paiella, H. Hwang, D. Sivco, A. Y. Cho, H. C. Liu, C. Jirauschek, and F. X. Kärtner, "Active mode-locking of broadband quantum cascade lasers," Laser Science (LS 2004), Talk LThF1, Rochester (NY), USA, October 10–14, 2004.
84. J. Birge, C. Jirauschek, and F. X. Kärtner, "Efficient analytic computation of group delay dispersion from optical interference coatings," OSA Topical Meeting on Optical Interference Coatings (OIC 2004), Talk ThA6, Tucson (AZ), USA, July 27 – August 2, 2004 (in *Optical Interference Coatings*, OSA Technical Digest Series (Optical Society of America, 2004)).
85. C. Jirauschek, L. Duan, O. D. Mücke, F. X. Kärtner, Klaus D. Hof, T. Tritschler, and M. Wegener, "Semiconductor-based carrier-envelope phase detector," IEEE/OSA Conference on Lasers and Electro-Optics (CLEO 2004), Talk JTUB2, San Francisco (CA), USA, May 16–21, 2004 (IEEE Conference Proceedings: *Conference on Lasers and Electro-Optics, 2004. (CLEO)*. ISBN 1-55752-777-6).
86. A. Soibel, M. Peabody, M. Sergent, D. Sivco, A. Y. Cho, F. Capasso, C. Gmachl, R. Paiella, H. Hwang, H. C. Liu, C. Jirauschek, and F. X. Kärtner, "Active mode locking of broadband quantum cascade lasers," IEEE/OSA Conference on Lasers and Electro-Optics (CLEO 2004), Talk CMZ3, San Francisco (CA), USA, May 16–21, 2004 (IEEE Conference Proceedings: *Conference on Lasers and Electro-Optics, 2004. (CLEO)*. ISBN 1-55752-777-6).
87. C. Jirauschek, J. Chandalia, L. Duan, F. X. Kärtner, O. D. Muecke, T. Tritschler, and M. Wegener, "Opto-electronic carrier-envelope-phase detection," IEEE LEOS Summer Topicals (SUM 2003), Talk TuC2.3, Vancouver, Canada, July 14–16, 2003 (IEEE Conference Proceedings: *2003 Digest of the LEOS Summer Topical Meetings*, ISBN 0-7803-7982-9, doi: 10.1109/LEOSST.2003.1224341).
88. U. Morgner, R. Eil, C. Jirauschek, P. Wagenblast, W. Seitz, and F. X. Kärtner, "Ultrakurze Pulse mit oktavbreiten Spektren und phasensensitive nichtlineare Optik," Spring Meeting of the German Physical Society, Summary Talk QIX, Osnabrück, Germany, March 4–8, 2002.
89. G. W. Faris, K. S. Kalogerakis, B. Blehm, R. Forman, and C. Jirauschek, "Stimulated Brillouin and Rayleigh scattering in supercritical fluids," Western Spectroscopy Association Meeting (WSA 2002), Pacific Grove (CA), USA, January 30 – February 1, 2002.
90. C. Jirauschek, U. Morgner, and F. X. Kärtner, "Spatio-temporal Gaussian pulse dynamics in sub-10fs lasers," IEEE/OSA Conference on Lasers and Electro-Optics (CLEO 2001), Poster CWA2, Baltimore (MD), USA, May 6–11, 2001 (IEEE Conference Proceedings: *Summaries of papers presented at the Conference on Lasers and Electro-Optics, 2001. CLEO '01. Technical Digest*. ISBN 1-55752-662-1, doi: 10.1109/CLEO.2001.947786).
91. C. Jirauschek, E. M. Jeffrey, and G. W. Faris, "Stimulated electrostrictive and thermal Rayleigh scattering in liquids," IEEE/OSA Quantum Electronics and Laser Science (QELS 2001), Talk QMI5, Baltimore (MD), USA, May 6–11, 2001 (IEEE Conference Proceedings: *Summaries of Papers Presented at the Quantum Electronics and Laser Science Conference, 2001. QELS '01. Technical Digest*. ISBN 1-55752-663-X, doi: 10.1109/QELS.2001.961811).

92. G. W. Faris, M. Gerken, C. Jirauschek, D. Hogan, and Y. Chen, "High spectral resolution infrared stimulated Rayleigh/Brillouin scattering in liquids," IEEE/OSA Conference on Lasers and Electro-Optics (CLEO 2001), Talk CTuZ5, Baltimore (MD), USA, May 6–11, 2001 (IEEE Conference Proceedings: *Summaries of papers presented at the Conference on Lasers and Electro-Optics, 2001. CLEO '01. Technical Digest*. ISBN 1-55752-662-1, doi: 10.1109/CLEO.2001.947776).
93. C. Jirauschek, U. Morgner, and F. X. Kärtner, "Zeitlich-räumliche Dynamik von Gauss-Impulsen in Sub-10fs-Lasern," Spring Meeting of the German Physical Society, Poster Q2.2, Berlin, Germany, April 2–6, 2001.
94. U. Morgner, R. Ell, C. Jirauschek, P. Wagenblast, T. R. Schibli, F. X. Kärtner, H. A. Haus, E. P. Ippen, J.G. Fujimoto, V. Scheuer, G. Angelow, and T. Tschudi, "Erzeugung und Anwendung von Laserimpulsen im Ein- bis Zwei-Zyklen-Bereich," Spring Meeting of the German Physical Society, Talk Q8.2, Berlin, Germany, April 2–6, 2001.

Patents

95. M. Stutzmann, J. Finley, C. Jirauschek, G. Csaba, P. Lugli, E. Biebl, R. Dietmüller, L. Müller, H. Langhuth, and U. Rührmair, "Method for security purposes," Patent EP2237183-A1; WO2010115775-A1 (2010).
96. M. Stutzmann, G. Csaba, P. Lugli, J. Finley, C. Jirauschek, C. Jäger, and U. Rührmair, "Towards electrical, integrated implementation of SIMPL systems," Patent EP2230794-A2; WO2010105993-A2 (2010).