

Dr. Michael Chini

Assistant Professor
Department of Physics
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Citizenship: USA

EDUCATION

University of Central Florida, Orlando FL

Ph.D. in Physics **2010-2012**
Dissertation: “Characterization and Application of Isolated Attosecond Pulses”
Advisor: Zenghu Chang

Kansas State University, Manhattan KS

Ph.D. Candidate in Physics **2007-2010**
Advisor: Zenghu Chang

McGill University, Montreal QC (Canada)

B.Sc. in Physics (Great Distinction) **2003-2007**
Thesis: “Forces, Charges, and Light Emission During the Rupture of Adhesive Contacts”
Minor: Music Technology
Advisor: Roland Bennewitz

EMPLOYMENT

CREOL, the College of Optics and Photonics, University of Central Florida

Secondary Joint Appointment **2017-present**

Department of Physics, University of Central Florida

Assistant Professor **2015-present**

Laser Plasma Laboratory, Townes Laser Institute, University of Central Florida

Senior Research Scientist **2014-2015**
Supervisor: Martin Richardson

Institute for the Frontier of Attosecond Science and Technology, University of Central Florida

Postdoctoral Research Associate **2012-2014**
Supervisor: Zenghu Chang

HONORS AND AWARDS

Erasmus+ Guest Professor **2018**
Friedrich-Schiller Universität Jena

Ralph E. Powe Junior Faculty Award **2016**
Oak Ridge Associated Universities

Finalist, Award for Outstanding Doctoral Dissertation **2014**
American Physical Society Division of Laser Science

University of Central Florida

TEACHING

Courses Taught

PHY 4424 – Optics (Fall 2018)

PHY 2048 (SCALE-UP) – Physics for Scientists and Engineers I (Spring 2018, Fall 2017)

PHY 2049 – Physics for Scientists and Engineers II (Spring 2017)

PHY 2020 – Concepts of Physics (Fall 2016)

PHY 2049H – Honors Physics for Scientists and Engineers II (Fall 2015)

Postdoctoral Advising

Dr. Yangyang Liu (2018-present)

Graduate Student Advising

Shima Gholam Mirzaei (PhD Physics, 2015-present)

John Beetar (PhD Physics, 2015-present)

Sean Buczek (MSc Physics, 2016-2018) – currently employed at Cymer, LLC

Undergraduate Research Mentoring

Federico Rivas (UCF-Valencia PREP, 2018-present)

Zainulabedin Khan (BS Physics, 2018-present)

Marc Etienne (BS Aerospace Engineering, 2018-present)

Nicholas Spangler (BS Physics, 2017-present)

Israel Castillo (BS Photonic Science and Engineering, 2017-present)

Erin Crites (BS Physics, 2017-present)

Jonathan Nesper* (BS Physics, 2015-present)

Steven Solis (BS Photonic Science and Engineering, 2015-2018)

Ahmad Azim** (BS Photonic Science and Engineering, 2015-2016)

Aitor Sanjuan (BS Mechanical Engineering, 2016)

**Honors in the Major thesis advisor*

***Honors in the Major thesis committee member*

Student Awards

Shima Gholam-Mirzaei – UCF Physics Student of the Year award runner-up (2018)

Shima Gholam-Mirzaei – UCF Physics *Above and Beyond* award (2018)

Jonathan Nesper – Leadership Alliance SR-EIP fellowship, University of Virginia (2018)

Erin Crites – Summer Undergraduate Research Fellowship (2018)

Marc Etienne – Duke Energy EXCEL Undergraduate Research Experience (2018)

Marc Etienne – Summer Undergraduate Research Fellowship (2018)

John Beetar – UCF Physics outreach recognition (2017)

Shima Gholam-Mirzaei – UCF Physics outreach recognition (2017)

Erin Crites – UCF Physics outreach recognition (2017)

Jonathan Nesper – SMART summer fellowship, University of Colorado, Boulder (2017)

Erin Crites – OUR Travel Award to attend Frontiers in Optics/Laser Science Conference (2017)

Jonathan Nesper – OUR Travel Award to attend Frontiers in Optics/Laser Science Conference (2016, 2017)

Steven Solis, Jonathan Nesper, Aitor Sanjuan – OUR Summer Undergraduate Research Grant (2016)

Aitor Sanjuan – Lockheed Martin College Work Experience Program (2016)
Ahmad Azim – McNair Scholar (2015)

RESEARCH

>\$1.8M in external funding as PI at UCF

Grants Awarded

1. “Probing Attosecond Bound Electron Dynamics Driven by Strong-Field Light Transients,” Michael Chini (PI, 100% credit), Department of Energy (Early Career), \$750,000.00 (2018-2023).
2. “Probing strong electronic correlations in ferroelectrics and multiferroics through high-order harmonic spectroscopy and first-principles calculations,” Michael Chini (PI, 50% credit), Volodymyr Turkowski (co-PI), National Science Foundation, \$364,842.00 (2018-2021).
3. “OP: Mechanisms and Phase Matching of Below-Threshold High-Order Harmonic Generation in Solids,” Michael Chini (PI, 100% credit), National Science Foundation, \$250,000.00 (2018-2021).
4. “High-Order Harmonic and Attosecond Spectroscopy in Materials,” Michael Chini (PI, 100% credit), Air Force Office of Scientific Research (AFOSR) Young Investigator Program (YIP), \$480,005.00 (2016-2020).
5. “Attosecond Time-Resolved Carrier Dynamics in Semiconductor Nanocrystals,” Michael Chini (PI, 100% credit), Oak Ridge Associated Universities, \$10,000.00 (2016-2017).

Awards of Facility Time

1. “Electric Field-Controlled High-Order Harmonic Generation in Ferroelectric/Multiferroic Heterostructures” Center for Integrated Nanotechnologies (CINT), Los Alamos National Laboratory (2018-2019).

Pending Grants

1. “The Role of Doping in HHG of Silicon and Laser-Driven Semiclassical Transport,” Michael Chini (PI, 100% credit), Lam Research Corporation, \$25,000.00 (2018-2019).
3. “Attosecond Time-Resolved Light-Matter Interactions for Classifying and Controlling Quantum Materials,” Michael Chini (PI, 100% credit), Research Corporation for Science Advancement (Cottrell Scholars Award), \$100,000.00 (2019-2022).
4. “High-Order Harmonic Spectroscopy of Tunneling-Driven Phase Transitions,” Michael Chini (PI, 100% credit), Office of Naval Research, \$565,435.00 (2018-2021).

Publications and Citations

1728 total citations; h-index: 20 (Web of Science, 08/02/2018)

**UCF graduate student advisee*

***UCF undergraduate student advisee*

Journal articles

47. Jeong, Y.-G., Piccoli, R., Ferachou, D., Cardin, V., Michael Chini, Hädrich, S., Limpert, J., Morandotti, R., Légaré, F., Schmidt, B. E. & Razzari, L. “Direct compression of 170-fs 50-cycle pulses down to 1.5 cycles with 70% efficiency.” *Sci. Rep.* (in press).

46. Gholam-Mirzaei, S.* , Crites, E.** , Beetar, J. E.* & Michael Chini “Solid-state high-order harmonics driven by long-wavelength lasers.” Proc. SPIE 10638, Ultrafast Bandgap Photonics III, 106381K (2018).
45. Gholam-Mirzaei, S.* , Beetar, J.* , Chacón, A. & Michael Chini “High Harmonic Generation in ZnO Driven by Self-compressed Mid-infrared Pulses.” J. Opt. Soc. Am. B 35, A27-31 (2018).
44. Beetar, J.* , Gholam-Mirzaei, S.* & Michael Chini “Spectral Broadening and Pulse Compression of a High Peak and Average Power Laser in Multi-plate Medium.” Appl. Phys. Lett. 112, 051102 (2018).
43. Ren, X., Li, J. Yin, Y., Zhao, K., Chew, A., Wang, Y., Hu, S., Cheng, Y., Cunningham, E., Wu, Y., Michael Chini & Chang, Z. “Attosecond Light Sources in the Water Window.” J. Opt. 20, 023001 (2018).
42. You, Y. S., Yin, Y., Chew, A., Ren, X., Gholam-Mirzaei, S.* , Michael Chini, Chang, Z. & Ghimire, S. “High-harmonic generation in amorphous solids.” Nature Commun. 8, 724 (2017). **Highlighted by DOE Science News Source:** “A Potential New and Easy Way to Make Attosecond Laser Pulses: Focus a Laser on Ordinary Glass,” http://www.newswise.com/doescience/?article_id=681997.
41. Li, J., Ren, X., Yin, Y., Zhao, K., Chew, A., Cheng, Y., Cunningham, E., Wang, Y., Wu, Y., Michael Chini & Chang, Z. “53-attosecond x-ray pulses glancing through the ‘water window’.” Nature Commun. 8, 186 (2017). **Highlighted by Laser Focus World:** “Once again, CREOL researchers set record for shortest light pulse,” <http://www.laserfocusworld.com/articles/2017/08/once-again-creol-researchers-set-record-for-shortest-light-pulse.html>. **Highlighted by UCF Today:** “UCF Researchers Set Record for Fastest Light Pulse – Again,” <http://today.ucf.edu/ucf-researchers-set-record-fastest-light-pulse/>.
40. You, Y. S., Wu, M., Yin, Y., Chew, A., Ren, X., Gholam-Mirzaei, S.* , Browne, D. A., Michael Chini, Chang, Z., Schafer, K. J., Gaarde, M. B. & Ghimire, S. “Laser waveform control of petahertz electron dynamics in solids.” Opt. Lett. 42, 1816 (2017).
39. Gholam-Mirzaei, S.* , Beetar, J.* & Michael Chini “High Harmonic Generation in ZnO with a High-Power Mid-IR OPA.” Appl. Phys. Lett. 110, 061101 (2017). **Highlighted in Physical Review Letters article:** “Role of the Transition Dipole Amplitude and Phase on the Generation of Odd and Even High-Order Harmonics in Crystals.” Phys. Rev. Lett. 120, 253201 (2018).
38. Cheng, Y., Michael Chini, Wang, X., Gonzalez-Castrillo, A., Palacios, A., Argenti, L., Martin, F. & Chang, Z. “Reconstruction of an excited-state molecular wave packet with attosecond transient absorption spectroscopy.” Phys. Rev. A 94, 023403 (2016).
37. Webb, B., Azim, A., Michael Chini, Shah, L. & Richardson, M. “Divided-pulse amplification to the Joule-level.” Opt. Lett. 41, 3106 (2016).
36. Rostami, S., Michael Chini, Lim, K., Durand, M., Palastro, J. P., Baudalet, M., Arissian, L. Diels, J. C. & Richardson, M. “Dramatic enhancement of supercontinuum generation in elliptically-polarized laser filaments.” Sci. Rep. 6, 20363 (2016).
35. Jeon, C., Harper, D., Lim, K., Durand, M., Michael Chini, Baudalet, M. & Richardson, M. “Interaction of a single laser filament with a single water droplet.” J. Opt. 17, 055502 (2015).
34. Michael Chini, Wang, X., Cheng, Y. & Chang, Z. “Resonance effects and quantum beats in attosecond transient absorption of helium.” J. Phys. B: At. Mol. Opt. Phys. 47, 124009 (2014).

33. Zhang, Q., Zhao, K., Li, J., Michael Chini, Cheng, Y., Wu, Y., Cunningham, E. & Chang, Z. “Suppression of driving laser in high harmonic generation with a microchannel plate.” *Opt. Lett.* 39, 3670 (2014).
32. Michael Chini, Wang, X., Cheng, Y., Wang, H., Wu, Y., Cunningham, E., Li, P.-C., Heslar, J., Telnov, D. A., Chu, S.-I. & Chang, Z. “Coherent VUV Emission from Field-Controlled Bound States.” *Nature Photon.* 8, 437 (2014). **Highlighted by SPIE Newsroom:** “Resonance-enhanced harmonics for probing molecular electrons,” DOI: 10.1117/2.1201407.005575. **Highlighted by UCF Today:** <http://today.ucf.edu/ucf-scientist-gets-three-big-journal-hits-one-year/>.
31. Michael Chini, Zhao, K. & Chang, Z. “The generation, characterization, and applications of broadband isolated attosecond pulses.” *Nature Photon.* 8, 178 (2014).
30. Wang, X., Michael Chini, Cheng, Y., Wu, Y., Tong, X.-M. & Chang, Z. “Sub-cycle laser control and quantum interferences in attosecond photoabsorption of neon.” *Phys. Rev. A* 87, 063413 (2013).
29. Wu, Y., Cunningham, E., Zang, H., Li, J., Michael Chini, Wang, X., Wang, Y., Zhao, K. & Chang, Z. “Generation of high-flux attosecond extreme ultraviolet continuum with a 10 TW laser.” *Appl. Phys. Lett.* 102, 201104 (2013).
28. Michael Chini, Wang, X., Cheng, Y., Wu, Y., Zhao, D., Telnov, D. A., Chu, S. I. & Chang, Z. “Sub-cycle oscillations in virtual states brought to light.” *Sci. Rep.* 3, 1105 (2013). **Highlighted in Nature Photonics commentary:** “What will it take to observe processes in ‘real time’?” *Nature Photon.* 8, 162 (2014).
27. Wang, X., Michael Chini, Cheng, Y., Wu, Y. & Chang, Z. “In Situ Calibration of an Extreme Ultraviolet Spectrometer for Attosecond Transient Absorption Experiments.” *Appl. Opt.* 52, 323 (2013).
26. Zhao, K., Zhang, Q., Michael Chini, Wu, Y., Wang, X. & Chang, Z. “Tailoring a 67 attosecond pulse through advantageous phase-mismatch.” *Opt. Lett.* 37, 3891-3893 (2012). **Highlighted in popular media:** *BBC News, Fox News, Wired Magazine, and others.* **Highlighted by UCF Today:** <http://today.ucf.edu/ucf-researchers-record-world-record-laser-pulse/>. **Top-15 cited articles of 2017 in Optics Letters.**
25. Michael Chini, Zhao, B., Wang, H., Cheng, Y., Hu, S. X. & Chang, Z. “Subcycle ac Stark Shift of Helium Excited States Probed with Isolated Attosecond Pulses.” *Phys. Rev. Lett.* 109, 073601 (2012).
24. Wang, X., Michael Chini, Zhang, Q., Zhao, K., Wu, Y., Telnov, D. A., Chu, S. I. & Chang, Z. “Mechanism of quasi-phase-matching in a dual-gas multijet array.” *Phys. Rev. A* 86, 021802 (2012).
23. Möller, M., Cheng, Y., Khan, S. D., Zhao, B. Z., Zhao, K., Michael Chini, Paulus, G. G. & Chang, Z. “Dependence of high-order-harmonic-generation yield on driving-laser ellipticity.” *Phys. Rev. A* 86, 011401 (2012).
22. Khan, S. D., Cheng, Y., Möller, M., Zhao, K., Zhao, B. Z., Michael Chini, Paulus, G. G. & Chang, Z. “Ellipticity dependence of 400 nm-driven high harmonic generation.” *Appl. Phys. Lett.* 99, 161106 (2011).
21. Möller, M., Sayler, A. M., Rathje, T., Michael Chini, Chang, Z. & Paulus, G. G. “Precise, real-time, single-shot carrier-envelope phase measurements in the multi-cycle regime.” *Appl. Phys. Lett.* 99, 121108 (2011).

20. Gilbertson, S., Michael Chini, Feng, X., Khan, S., Wu, Y. & Chang, Z. “Monitoring and Controlling the Electron Dynamics in Helium with Isolated Attosecond Pulses.” *Phys. Rev. Lett.* 105, 263003 (2010).
19. Wang, H., Michael Chini, Chen, S., Zhang, C. H., He, F., Cheng, Y., Wu, Y., Thumm, U. & Chang, Z. “Attosecond Time-Resolved Autoionization of Argon.” *Phys. Rev. Lett.* 105, 143002 (2010).
18. Gilbertson, S., Khan, S. D., Wu, Y., Michael Chini & Chang, Z. “Isolated Attosecond Pulse Generation without the Need to Stabilize the Carrier-Envelope Phase of Driving Lasers.” *Phys. Rev. Lett.* 105, 093902 (2010).
17. Michael Chini, Gilbertson, S., Khan, S. D. & Chang, Z. “Characterizing ultrabroadband attosecond lasers.” *Opt. Express* 18, 13006 (2010).
16. Gilbertson, S., Wu, Y., Khan, S. D., Michael Chini, Zhao, K., Feng, X. & Chang, Z. “Isolated attosecond pulse generation using multicycle pulses directly from a laser amplifier.” *Phys. Rev. A* 81, 043810 (2010).
15. Feng, X., Gilbertson, S., Khan, S. D., Michael Chini, Wu, Y., Carnes, K. D. & Chang, Z. “Calibration of electron spectrometer resolution in attosecond streak camera.” *Opt. Express* 18, 1316 (2010).
14. Moon, E., Wang, H., Gilbertson, S., Mashiko, H., Michael Chini & Chang, Z. “Advances in carrier-envelope phase stabilization of grating-based chirped-pulse amplifiers.” *Laser & Photonics Reviews* 4, 160 (2010).
13. Wang, H., Michael Chini, Wu, Y., Moon, E., Mashiko, H. & Chang, Z. “Carrier-envelope phase stabilization of 5-fs, 0.5-mJ pulses from adaptive phase modulator.” *Appl. Phys. B* 98, 291 (2010).
12. Mashiko, H., Gilbertson, S., Michael Chini, Feng, X., Yun, C., Wang, H., Khan, S. D., Chen, S. & Chang, Z. “Extreme ultraviolet supercontinua supporting pulse durations of less than one atomic unit of time.” *Opt. Lett.* 34, 3337 (2009).
11. Yun, C., Chen, S., Wang, H., Michael Chini & Chang, Z. “Temperature feedback control for long-term carrier-envelope phase locking.” *Appl. Opt.* 48, 5127 (2009).
10. Gilbertson, S., Feng, X., Khan, S. D., Michael Chini, Wang, H., Mashiko, H. & Chang, Z. “Direct measurement of an electric field in femtosecond Bessel-Gaussian beams.” *Opt. Lett.* 34, 2390 (2009).
9. Wang, H., Michael Chini, Khan, S. D., Chen, S., Gilbertson, S., Feng, X., Mashiko, H. & Chang, Z. “Practical issues of retrieving isolated attosecond pulses.” *J. Phys. B* 42, 134007 (2009).
8. Michael Chini, Wang, H., Khan, S. D., Chen, S. & Chang, Z. “Retrieval of satellite pulses of single isolated attosecond pulses.” *Applied Physics Letters* 94, 161112 (2009).
7. Chen, S., Michael Chini, Wang, H., Yun, C., Mashiko, H., Wu, Y. & Chang, Z. “Carrier-envelope phase stabilization and control of 1 kHz, 6 mJ, 30 fs laser pulses from a Ti:sapphire regenerative amplifier.” *Applied Optics* 48, 5692 (2009).
6. Michael Chini, Wang, H., Khan, S. D., Chen, S. & Chang, Z. “Retrieval of satellite pulses of single isolated attosecond pulses.” *Applied Physics Letters* 94, 161112 (2009).

5. Chen, S., Michael Chini, Wang, H., Yun, C., Mashiko, H., Wu, Y. & Chang, Z. “Carrier-envelope phase stabilization and control of 1 kHz, 6 mJ, 30 fs laser pulses from a Ti:sapphire regenerative amplifier.” *Applied Optics* 48, 5692 (2009).
4. Michael Chini, Mashiko, H., Wang, H., Chen, S., Yun, C., Scott, S., Gilbertson, S. & Chang, Z. “Delay control in attosecond pump-probe experiments.” *Opt. Express* 17, 21459 (2009).
3. Feng, X., Gilbertson, S., Mashiko, H., Wang, H., Khan, S. D., Michael Chini, Wu, Yi. Zhao, K. & Chang Z. “Generation of Isolated Attosecond Pulses with 20 to 28 Femtosecond Lasers.” *Phys. Rev. Lett.* 103, 183901 (2009).
2. Wang, H., Michael Chini, Moon, E., Mashiko, H., Li, C. & Chang, Z. “Coupling between energy and phase in hollow-core fiber based f-to-2f interferometers.” *Opt. Express* 17, 12082 (2009).
1. Miura, T., Michael Chini & Bennewitz R. “Forces, charges, and light emission during the rupture of adhesive contacts.” *J. Appl. Phys.* 102, 103509 (2007).

Popular Articles

2. Michael Chini “Speedy electrons exposed in a flash.” *Nature* 538, 325-326 (2016).
1. Michael Chini & Chang, Z. “Resonance-enhanced harmonics for probing molecular electrons.” *SPIE Newsroom*, DOI: 10.117/2.1201407.005575 (2014).

Book Chapters

4. Michael Chini, Wang, H., Zhao, B., Cheng, Y., Chen, S., Wu, Y. & Chang, Z. “Attosecond Absorption Spectroscopy.” in *Progress in Ultrafast Intense Laser Science Vol. 9* (eds. K. Yamanouchi & K. Midorikawa), Chapter 8, pg. 135 (Springer, 2013).
3. Zhao, K., Zhang, Q., Michael Chini & Chang Z. “Route to One Atomic Unit of Time – Development of a Broadband Attosecond Streak Camera.” in *Multiphoton Processes and Attosecond Physics Vol. 125* (eds. K. Yamanouchi & K. Midorikawa), Ch. 19, pg. 109 (Springer, 2012).
2. Chen, S. Gilbertson, S., Wang, H., Michael Chini, Zhao, K., Khan, S. D., Wu, Y. & Chang, Z. “Attosecond Pulse Generation, Characterization, and Application.” in *Advances in Multi-Photon Processes and Spectroscopy Vol. 20* (eds. S. H. Lin, A. A. Villaeys & Y. Fujimura), Ch. 4, pg. 127 (World Scientific, 2011).
1. Feng, X., Gilbertson, S., Mashiko, H., Wang, H., Khan, S. D., Michael Chini, Wu, Y. & Chang, Z. “Single Isolated Attosecond Pulses Generation with Double Optical Gating.” in *Progress in Ultrafast Intense Laser Science Vol. 6* (eds. K. Yamanouchi, G. Gerber & A. D. Bandrauk), Ch. 5, pg. 89 (Springer, 2010).

Invited Presentations

25. “Controlling High-order Harmonic Generation in Solids” (Seminar) Department of Physics, Friedrich-Schiller-Universität, Jena Germany (2018).
24. “High-order harmonic and attosecond spectroscopy” (Lecture) Department of Physics, Friedrich-Schiller-Universität, Jena Germany (2018).
23. “High-order Harmonic and Attosecond Spectroscopy in Materials” AFOSR Ultrashort Pulse Laser-Matter Interactions Program Review, Arlington VA (2018).

22. “Controlling High-order Harmonic Generation in Solids” 49th Annual Meeting of the APS Division of Atomic, Molecular and Optical Physics, Fort Lauderdale FL (2018).
21. “Solid-state high-order harmonics driven by long-wavelength lasers” SPIE Ultrafast Bandgap Photonics III Conference, Orlando FL (2018).
20. “High-order harmonic and attosecond spectroscopy in atoms, molecules, and solids” (Lecture) High Energy Density Physics Summer School, National University of Defense Technology, Changsha China (2017).
19. “Solid-State High-order Harmonic Sources & Spectroscopy” (Seminar) Center for Integrated Nanotechnologies, Los Alamos National Laboratory, Los Alamos NM (2017).
18. “High-order Harmonic and Attosecond Spectroscopy in Materials” AFOSR Ultrashort Pulse Laser-Matter Interactions Program Review, Arlington VA (2017).
17. “Solid-State High-order Harmonic Sources & Spectroscopy” (Seminar) Department of Physics, University of California, San Diego, San Diego CA (2017).
16. “Solid-State High-order Harmonic Sources & Spectroscopy” (Seminar) CREOL, The College of Optics and Photonics, University of Central Florida, Orlando FL (2017).
15. “High-order Harmonic Generation in Bulk Crystals with a 50 kHz Mid-IR OPA” ARO and AFOSR Joint Attosecond MURI Annual Meeting, University of Arizona, Tucson AZ (2016).
14. “High-order Harmonic and Attosecond Spectroscopy in Materials.” AFOSR Ultrashort Pulse Laser-Matter Interactions Program Review, Arlington VA (2016).
13. “Reconstruction of molecular wave packet dynamics with attosecond transient absorption spectroscopy.” Annual review meeting of ARO MURI on Light Filamentation Science, University of Central Florida, Orlando FL (2016).
12. “Probing and Controlling Ultrafast Electron Motion with Attosecond Transient Absorption Spectroscopy.” (Colloquium) University of Central Florida, Orlando FL (2015).
11. “Probing and Controlling Ultrafast Electron Motion with Attosecond Transient Absorption Spectroscopy.” (Colloquium) University of Connecticut, Storrs CT (2015).
10. “Probing and Controlling Ultrafast Electron Motion with Attosecond Transient Absorption Spectroscopy.” (Colloquium) California State University, Long Beach, Long Beach CA (2015).
9. “Probing and Controlling Ultrafast Electron Motion with Attosecond Transient Absorption Spectroscopy.” (Colloquium) Auburn University, Auburn AL (2015).
8. “Probing and Controlling Ultrafast Electron Motion with Attosecond Transient Absorption Spectroscopy.” (Colloquium) Mississippi State University, Starkville MS (2015).
7. “Supercontinuum Generation and Polarization as Probes of Laser Filamentation Dynamics.” 46th Annual Meeting of the APS Division of Atomic, Molecular and Optical Physics, Columbus OH (2015).
6. “Characterization and Application of Isolated Attosecond Pulses.” Frontiers in Optics/Laser Science, Tucson AZ (2014).

5. "Spectrum and Polarization of the White Light Supercontinuum." 5th International Symposium on Filamentation (COFIL), Shanghai China (2014).
4. "Attosecond Time-Resolved Spectroscopy with Few-Cycle Lasers." (Seminar) National University of Defense Technology, Changsha China (2014).
3. "Absorption Spectroscopy with Ultrabroadband Attosecond Pulses." (Colloquium) Kansas State University (2014).
2. "Sub-cycle Electron Dynamics Probed by Isolated Attosecond Pulses." Frontiers in Optics/Laser Science, Orlando FL (2013).
1. "Probing Attosecond Electron Dynamics in Atoms." IEEE Photonics Conference, Burlingame CA (2012).

Popular Talks

2. "Fast and Furious: How New Light Sources Enable New Physics." UCF Scholars Day (2018).
1. "Fast and Furious: How New Light Sources Enable New Physics." UCF Knight for a Day (2017).

Contributed Talks and Posters

68. Gholam-Mirzaeimoghadar, S.*, Crites, E.**, Beetar, J. E.*, Chen, A. & Michael Chini "Anisotropic Polarization Dependence of High Harmonic Generation in BaTiO₃." 49th Annual Meeting of the APS Division of Atomic, Molecular and Optical Physics, Fort Lauderdale FL (2018).
67. Beetar, J. E.*, Gholam-Mirzaei, S.*, Buczek, S.*, Solis, S.**, Castillo, I.** & Michael Chini "Compression of Yb:KGW Laser Pulses with Multi-Plate and Hollow-Core Fiber Compressors." 49th Annual Meeting of the APS Division of Atomic, Molecular and Optical Physics, Fort Lauderdale FL (2018).
66. Gholam-Mirzaeimoghadar, S.*, Crites, E.**, Beetar, J. E.*, Chen, A. & Michael Chini "Anisotropic Polarization Dependent High Harmonic Generation in the Ferroelectric Crystal BaTiO₃." Conference on Lasers and Electro-Optics, San Jose CA (2018).
65. Beetar, J. E.*, Gholam-Mirzaeimoghadar, S.* & Michael Chini "Compression of a Yb:KGW Laser with Multi-Plate and Hollow-Core Fiber Compressors." Conference on Lasers and Electro-Optics, San Jose CA (2018).
64. Jeong, Y.-G., Piccoli, R., Ferachou, D., Cardin, V., Michael Chini, Hädrich, S., Limpert, J., Morandotti, R., Légaré, F., Schmidt, B., Razzari, L. "33-fold pulse compression down to 1.5 cycles in a 6-m-long hollow-core fiber." Conference on Lasers and Electro-Optics, San Jose CA (2018).
63. Beetar, J.*, Gholam Mirzaei, S.*, Buczek, S.*, Solis, S.** & Michael Chini "Spectral Broadening and Pulse Compression of a High Average Power Yb:KGW Laser." IEEE Photonics Conference, Orlando FL (2017).
62. Gholam-Mirzaei, S.*, Beetar, J.* & Michael Chini "High-order harmonic generation in ZnO using few-cycle mid-IR pulses generated via self-compression." IEEE Photonics Conference, Orlando FL (2017).
61. Crites, E.**, Gholam-Mirzaei, S.*, Beetar, J.* & Michael Chini "High Harmonic Generation in Barium Titanate Crystal." Frontiers in Optics/Laser Science, Washington DC (2017).

60. Beetar, J.*, Gholam Mirzaei, S.*, Buczek, S.*, Solis, S.** & Michael Chini “Spectral Broadening of a High Average Power Yb:KGW Laser.” *Frontiers in Optics/Laser Science*, Washington DC (2017).
59. Jeong, Y.-G., Piccoli, R., Ferachou, D., Cardin, V., Michael Chini, Morandotti, R., Legare, F., Schmidt, B. E. & Razzari, L. “20-fold pulse compression down to 3-cycles in a 3 m long hollow-core fiber.” *Ultrafast Optics*, Jackson Hole WY (2017).
58. Yin, Y., Li, J., Ren, X., Zhao, K., Chew, A., Cheng, Y., Cunningham, E., Wang, Y., Wu, Y., Michael Chini & Chang, Z. “Infrared driving lasers for generating 53-as x-rays.” 6th International Conference on Attosecond Physics (ATTO 2017), Xi’an China (2017).
57. Gholam-Mirzaei, S.*, Beetar, J.* & Michael Chini “High-order harmonic generation in solids driven by few-cycle mid-IR pulses at 50 kHz repetition rate.” 6th International Conference on Attosecond Physics (ATTO 2017), Xi’an China (2017).
56. Beetar, J.*, Gholam-Mirzaei, S.*, Buczek, S.*, Solis, S.** & Michael Chini “Spectral Broadening and Pulse Compression of a High Average Power Yb:KGW Laser.” APS Division of Atomic, Molecular and Optical Physics, Sacramento CA (2017).
55. You, Y.-S., Wu, M., Yin, Y., Chew, A., Ren, X., Gholam-Mirzaei, S.*, Browne, D., Michael Chini, Chang, Z., Schafer, K., Gaarde, M. & Ghimire, S. “Laser waveform control of extreme ultraviolet high harmonic generation in solids.” APS Division of Atomic, Molecular and Optical Physics, Sacramento CA (2017).
54. Ren, X., Li, J., Yin, Y., Zhao, K. Chew, A., Cheng, Y. Cunningham, E., Wang, Y., Wu, Y., Michael Chini & Chang, Z. “53 Attosecond X-ray Pulses Glancing Through the Water Window.” Conference on Lasers and Electro-Optics, San Jose CA (2017).
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MEMBERSHIPS AND SERVICE

Memberships

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Professional Service

Chair, CLEO/QELS (Conference on Lasers and Electro Optics/Quantum Electronics and Laser Science)

FS7 (High Field Physics and Attoscience) program subcommittee (2017-present)

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