Peer Reviewed Publications

- 31 peer-reviewed publications
- 19 publications in Physical Review Letters, Science, Nature journals
- h-index (ISI): 23, ~3500 citations (without self-citations)

[1] Clocking Auger electrons
D.C. Haynes, M. Wurzer, A. Schletter, A. Al-Haddad, C. Blaga, C. Bostedt, J. Bozek, . Bucher, A. Camper, S. Carron, R. Coffee, J.T. Costello, L.F. DiMauro, Y. Ding, K. Ferguson, I. Grguras, W. Helml, M.C. Hoffmann, M. Ilchen, S. Jalas, N.M. Kabachnik, A.K. Kazansky, R. Kienberger, A.R. Maier, T. Maxwell, T. Mazza, M. Meyer, H. Park, J.S. Robinson, C. Roedig, H. Schlarb, R. Singla, R. Tellkamp, K. Zhang, G. Doumy, C. Behrens, A.L. Cavalieri
arXiv preprint arXive:2003.10398 (2020)

[2] Extreme timescale core-level spectroscopy with tailored XUV pulses
R. Singla, D.C. Haynes, K. Hanff, I. Grguraš, S. Schulz, H.Y. Liu, A. Simoncig, F. Tellkamp, S. Bajt, K. Rossnagel, A.L. Cavalieri
arXiv preprint arXiv:1805.01723 (2018)

[3] Femtosecond profiling of shaped X-ray pulses
M.C. Hoffmann, I. Grguraš, C. Behrens, C. Bostedt, J. Bozek, H. Bromberger, R. Coffee, J.T. Costello, L.F. DiMauro, Y. Ding, G. Doumy, W. Helml, M. Ilchen, R. Kienberger, S. Lee, A.R. Maier, T. Mazza, M. Meyer, M. Messerschmidt, S. Schorb, W. Sweinberger, K. Zahng, A.L. Cavalieri
New Journal of Physics **20**, 033008 (2018)

[4] Ultrashort free-electron laser X-ray pulses
W. Helml, I. Grguraš, P.N. Juranić, S. Düsterer, T. Mazza, A.R. Maier, N. Hartmann, M. Ilchen, G. Hartmann, L. Patthey, C. Callegari, J.T. Costello, M. Meyer, R.N. Coffee, A.L. Cavalieri, R. Kienberger
Applied Sciences **9**, 915 (2017)

[5] Direct observation of electron propagation and dielectric screening on the atomic length scale
S. Neppl, R. Ernstorfer, A.L. Cavalieri, C. Lemell, G. Wachter, E. Magerl, E.M. Bothschafter, M. Jobst, M. Hofstetter, U. Kleineberg, J.V. Barth, D. Menzel, J. Burgdorfer, P. Deulner, F. Krausz, R. Kienberger
Nature **517**, 342-346 (2015)

[6] Femtosecond all-optical synchronization of an X-ray free-electron laser
S. Schulz, I. Grguras, C. Behrens, H. Bromberger, J.T. Costello, M.K. Czwalinna, M. Felber, M.C. Hoffmann, M. Ilchen, H.Y. Liu, T. Mazza, M. Meyer, S. Pfeiffer, P. Predki, S. Schefer, C. Schmidt, U. Wegner, H. Schlarb, A.L. Cavalieri
Nature Communications **6**, 5938 (2015)

[7] Measuring the temporal structure of few-femtosecond free-electron laser X-ray pulses directly in the time domain
W. Helml, A.R. Maier, W. Schweinberger, I. Grguras, P. Radcliffe, G. Doumy, C. Roedig, J. Gagnon, M. Messerschmidt, S. Schorb, C. Bostedt, F. Gruner, L.F. DiMauro, D. Cubaynes, J.D. Bozek, T. Tschentscher, J.T. Costello, M. Meyer, R. Coffee, S. Dusterer, A.L. Cavalieri, R. Kienberger
Nature Photonics **8**, 950-957 (2014)

[8] Photoinduced melting of the orbital order in La0.5Sr1.5MnO4 measured with 4-fs laser pulses
R. Singla, A. Simoncig, M. Foerst, D. Prabhakaran, A.L. Cavalieri, A Cavalleri
Phys. Rev. B **88**, 075107 (2013)

[9] Possible observation of parametrically amplified coherent phasons in K0.3MoO3 using time-resolved extreme-ultraviolet angle-resolved photoemission spectroscopy
H. Liu, I. Gierz, J.C. Petersen, S. Kaiser, A. Simoncig, A.L. Cavalieri, C. Cacho, I.C.E. Turcu, E. Springate, F. Frassetto, L. Poletto, S.S. Dhesi, Z.A. Xu, T. Cuk, R. Merlin, A. Cavalleri
Phys. Rev. B **88**, 045104 (2013)

[10] Ultrafast X-ray pulse characterization at free-electron lasers
I. Grguras, A.R. Maier, C. Behrens, T. Mazza, T.J. Kelly, P. Radcliffe, S. Duesterer, A.K. Kazansky, N.M. Kabachnik, Th. Tschentscher, J.T. Costello, M. Meyer, M.C. Hoffmann, H. Schlarb, A.L. Cavalieri
Nature Photonics **6**, 851-856 (2012)

[11] Coherent spectral enhancement of carrier-envelope-phase stable continua with dual-gas high harmonic generation
A. Willner, A. Hage, R. Riedel, I. Grguras, A. Simoncig, M. Schulz, T. Dzelzainis, H. Hoppner, S. Huber, M.J. Prandolini, B. Dromey, M. Zepf, A.L. Cavalieri, F. Tavella
Optics Letters **37**, 3672-3674 (2012)

[12] Attosecond time-resolved photoemission from core and valence states of magnesium
S. Neppl, R. Ernstorfer, E.M. Bothschafter, A.L. Cavalieri, D. Menzel, J.V. Barth, F. Krausz, R. Kienberger, P. Feulner
Phys. Rev. Lett. **109**, 087401 (2012)

[13] Evolution of three-dimensional correlations during the photoinduced melting of antiferromagnetic order in La0.5Sr1.5MnO4
R.I. Tobey, S. Wall, M. Foerst, H. Bromberger, V. Khanna, J.J. Turner, W. Schlotter, M. Trigo, O. Krupin, W.S. Lee, Y.D. Chuang, R. Moore, A.L. Cavalieri, S.B. Wilkins, H. Zheng, J.F. Mitchel, S.S. Dhesi, A. Cavalleri, J.P. Hill
Phys. Rev. B 86 064425 (2012)

[14] Angle-resolved electron spectroscopy of laser-assisted Auger decay induced by a few femtosecond X-ray pulse
M. Meyer, P. Radcliffe, Th. Tschentscher, J.T. Costello, A.L. Cavalieri, I. Grguras, A.R. Maier, R. Kienberger, J. Bozek, C. Bostedt, S. Schorb. R. Coffee, M. Messerschmidt, C. Roedig, E. Sistrunk, L.F. DiMauro, G. Doumy, K. Ueda, S. Wada, S. Duesterer, A.K. Kazansky, N.M. Kabachnik
Phys. Rev. Lett. **108** 063007 (2012)

[15] Driving magnetic order in a manganite by ultrafast lattice excitation
M. Forst, R.I. Tobey, S. Wall, H. Bromberger, V. Khanna, A.L. Cavalieri, Y.D. Chuang, W.S Lee, R. Moore, W.F. Schlotter, J.J. Turner, O. Krupin, M. Trigo, H. Zheng, J.F. Mitchell, S.S Dhesi, J.P. Hill, A. Cavalleri
Phys. Rev. B. **84**, 241104 (2011)

[16] Femtosecond x-ray pulse length characterization at the Linac Coherent Light Source free-electron laser
S. Duesterer, P. Radcliffe, C. Bostedt, J. Bozek, A.L. Cavalieri, R. Coffee, J.T. Costello, D. Cubaynes, L.F. DiMauro, Y. Ding, G. Doumy, F. Gruener, W. Helml, W. Schweinberger, R. Kienberger, A.R. Maier, M. Messerschmidt, V. Richardson, C. Roedig, Th. Tschentscher, M. Meyer
New Journal of Physics **13**, 093024 (2011)

[17] Clocking the melting transition of charge and lattice order in 1T-TaS2 with ultrafast extreme-ultraviolet angle-resolved photoemission spectroscopy
J.C. Petersen, S. Kaiser, N. Dean, A. Simoncig, H.Y. Liu, A.L. Cavalieri, C. Cacho, I.C.E. Turcu, E. Springate, F. Frassetto, L. Poletto, S.S. Dhesi, H. Berger, A. Cavalleri
Phys. Rev. Lett. **107**, 177402 (2011)

[18] A flexible apparatus for attosecond photoelectron spectroscopy of solids and surfaces
E. Magerl, S. Neppl, A.L. Cavalieri, E.M. Bothschafter, M. Stanislawski, Th. Uphues, M. Hofstetter, U. Kleineberg, J.V. Barth, D. Menzel, F. Krausz, R. Ernstorfer, R. Kienberger, P. Feulner
Review of Scientific Instruments **82**, 063104 (2011)

[19] Delay in photoemission
M. Schultze, M. Fiess, N. Karpowicz, J. Gagnon, M. Korbman, M. Hofstetter, S. Neppl, A.L. Cavalieri, Y. Komninos, Th. Mercouris, C.A. Nicolaides, R. Pazourek, S. Nagele, J. Feist, J. Burgdorfer, A.M. Azzeer, R. Ernstorfer, R. Kienberger, U. Kleineberg, E. Goulielmakis, F. Krausz, V.S. Yakovlev
Science **328**, 1658-1662 (2010)

[20] Single-shot carrier-envelope phase measurement of few-cycle laser pulses
T. Wittmann, B. Horvath, W. Helml, M.G. Schatzel, X. Gu, A.L. Cavalieri, G.G. Paulus, R. Kienberger
Nature Physics **5**, 357-362 (2009)

[21] X-ray diffuse scattering measurements of nucleation dynamics at femtosecond resolution
A.M. Lindenberg, S. Engemann, K.J. Gaffney, K. Sokolowski-Tinten, J. Larsson, P.B. Hillyard, D.A Reis, D.M. Fritz, J. Arthur, R.A. Akre, M.J. George, A. Deb, P.H. Bucksbaum, J. Hajdu, D.A. Meyer, M. Nicoul, C. Blome, Th. Tschentscher, A.L. Cavalieri, R.W. Falcone, S.H. Lee, R. Pahl, J. Rudati, P.H. Fuoss, A.J. Nelson, P. Krejcik, D.P. Siddons, P. Lorazo, J.B. Hastings
Phys. Rev. Lett. **100**, 135502 (2008)

[22] Attosecond spectroscopy in condensed matter
A.L. Cavalieri, N. Müller, Th. Uphues, V. S. Yakovlev, A. Baltuska, B. Horvath, B. Schmidt, L. Blümel, R. Holzwarth, S. Hendel, M. Drescher, U. Kleineberg, P.M. Echenique, R. Kienberger, F. Krausz, U. Heinzmann
Nature **449**, 1029–1033 (2007)

[23] Attosecond control and measurement: lightwave electronics
E. Goulielmakis, V.S. Yakovlev, A.L. Cavalieri, M. Uiberacker, V. Pervak, A. Apolonski, R. Kienberger, U. Kleineberg, F. Krausz
Science **317**, 769–775 (2007)

[24] Intense 1.5-cycle near infrared laser waveforms and their use for the generation of ultra-broadband soft-x-ray harmonic continua
A.L. Cavalieri, E. Goulielmakis, B. Horvath, W. Helml, M. Schultze, M. Fiess, V. Pervak, L. Veisz, V.S. Yakovlev, M. Uiberacker, A. Apolonski, F. Krausz, R. Kienberger
New J. Phys. **9**, 242 (2007)

[25] Carrier-density-dependent lattice stability in InSb
P.B. Hillyard, K.J. Gaffney, A.M. Lindenberg, S. Engemann, R.A. Akre, J. Arthur, C. Blome, P.H. Bucksbaum, A.L. Cavalieri, A. Deb, R.W. Falcone, D.M. Fritz, P.H. Fuoss, J. Hajdu, P. Krejcik, J. Larsson, S.H. Lee, D.A. Meyer, A.J. Nelson, R. Pahl, D.A. Reis, J. Rudati, D.P. Siddons, K. Sokolowski-Tinten, D. von der Linde, J.B. Hastings
Phys. Rev. Lett. **98**, 125501 (2007).

[26] Ultrafast bond softening in bismuth: mapping a solid's interatomic potential with x-rays
D.M. Fritz, D.A. Reis, B. Adams, R.A. Akre, J. Arthur, C. Blome, P.H. Bucksbaum, A.L. Cavalieri, S. Engemann, S. Fahy, R.W. Falcone, P.H. Fuoss, K.J. Gaffney, M.J. George, J. Hajdu, M.P. Hertlein, P.B. Hillyard, M. Horn-von Hoegen, M. Kammler, J. Kaspar, R. Kienberger, P. Krejcik, S.H. Lee, A.M. Lindenberg, B. McFarland, D. Meyer, T. Montagne, E. D. Murray, A.J. Nelson, M. Nicoul, R. Pahl, J. Rudati, H. Schlarb, D.P. Siddons, K. Sokolowski-Tinten, Th. Tschentscher, D. von der Linde, J.B. Hastings.
Science **315**, 633–636 (2007)

[27] Generation and propagation of a picosecond acoustic pulse at a buried interface: Time-resolved X-ray diffraction measurements
S.H. Lee, A.L. Cavalieri, D.M. Fritz, M.C. Swan, R.S. Hegde, M. Reason, R.S. Goldman, D.A. Reis
Phys. Rev. Lett. **95**, 246104 (2005)

[28] Observation of structural anisotropy and the onset of liquidlike motion during the nonthermal melting of InSb
K.J. Gaffney, A.M. Lindenberg, J. Larsson, K. Sokolowski-Tinten, C. Blome, O. Synnergren, J. Sheppard, C. Caleman, A.G. MacPhee, D. Weinstein, D.P. Lowney, T. Allison, T. Matthews, R.W. Falcone, A.L. Cavalieri, D.M. Fritz, S.H. Lee, P.H. Bucksbaum, D.A. Reis, J. Rudati, A.T. Macrander, P.H. Fuoss, C.C. Kao, D.P. Siddons, R. Pahl, K. Moffat, J. Als-Nielsen, S. Duesterer, R. Ischebeck, H. Schlarb, H. Schulte-Schrepping, J. Schneider, D. von der Linde, O. Hignette, F. Sette, H.N. Chapman, R.W. Lee, T.N. Hansen, J.S. Wark, M. Bergh, G. Huldt, D. van der Spoel, N. Timneanu, J. Hajdu, R.A. Akre, E. Bong, P. Krejcik, J. Arthur, S. Brennan, K. Luening, J.B. Hastings
Phys. Rev. Lett. **95**, 125701 (2005)

[29] Atomic-scale visualization of inertial dynamics
A.M. Lindenberg, J. Larsson, K. Sokolowski-Tinten, K.J. Gaffney, C. Blome, O. Synnergren, J. Sheppard, C. Caleman, A.G. MacPhee, D.Weinstein, D.P. Lowney, T. Allison, T. Matthews, R.W. Falcone, A.L. Cavalieri, D.M. Fritz, S.H. Lee, P.H. Bucksbaum, D.A. Reis, J. Rudati, P.H. Fuoss, C.C. Kao, D.P. Siddons, R. Pahl, J. Als-Nielson, S. Duesterer, R. Ischebeck, H. Schlarb, H. Schulte-Schrepping, Th. Tschentscher, J. Schneider, D. von der Linde, O. Hignette, F. Sette, H.N. Chapman, R.W. Lee, T.N. Hansen, S. Techert, J.S. Wark, M. Bergh, G. Huldt, D. van der Spoel, N. Timneanu, J. Hajdu, R.A. Akre, E. Bong, P. Krejcik, J. Arthur, S. Brennan, K. Luening, J.B. Hastings.
Science **308**, 392–395 (2005)

[30] Clocking femtosecond x-rays
A.L. Cavalieri, D.M. Fritz, S.H. Lee, P.H. Bucksbaum, D.A. Reis, J. Rudati, D.M. Mills, P.H. Fuoss, G.B. Stephenson, C.C. Kao, D.P. Siddons, D.P. Lowney, A.G. MacPhee, D. Weinstein, R.W. Falcone, R. Pahl, J. Als-Nielsen, C. Blome, S. Duesterer, R. Ischebeck, H. Schlarb, H. Schulte-Schrepping, Th. Tschentscher, J. Schneider, O. Hignette, F. Sette, K. Sokolowski-Tinten, H.N. Chapman, R.W. Lee, T.N. Hansen, O. Synnergren, J. Larsson, S. Techert, J. Sheppard, J.S. Wark, M. Bergh, C. Caleman, G. Huldt, D. van der Spoel, N. Timneanu, J. Hajdu, R.A. Akre, E. Bong, P. Emma, P. Krejcik, J. Arthur, S. Brennan, K.J. Gaffney, A.M. Lindenberg, K. Luening, J.B. Hastings.
Phys. Rev. Lett. **94**, 114801 (2005)

[31] Adaptive dispersion compensation for remote fiber delivery of near-infrared femtosecond pulses
S.H. Lee, A.L. Cavalieri, D.M. Fritz, M. Myaing, D.A. Reis
Opt. Lett. **29**, 2602-2604 (2004)

[32] Transient strain driven by a dense electron-hole plasma
M.F. DeCamp, D.A. Reis, A.L. Cavalieri, P.H. Bucksbaum, R. Clarke, R. Merlin, E.M. Dufresne, D.A. Arms, A.M. Lindenberg, A.G. MacPhee, Z. Chang, B. Lings, J.S. Wark, S. Fahy
Phys. Rev. Lett. **91**, 165502 (2003)

[33] Tunable high harmonic generation with an optical parametric amplifier
B. Shan, A.L. Cavalieri, Z. Chang.
Appl. Phys. B, **74**:S23–S26 Suppl. S (2002)