

Kevin M. Dorney

Postdoctoral Research Associate

Kapteyn-Murnane Group
JILA, U. Colorado Boulder

Personal Info/Contact



+1 (937) 430-1210



kedo8694@colorado.edu



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Kevin-M-Dorney



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Publication Summary

19 Peer Reviewed Publications

16 Conference Proceedings

>500 citations (Google Scholar)

>9 H index (9 papers w/ >9 cites)

>8 i10-index (8 papers w/ >10 cites)

Selected Journals

Science	PNAS
Nat. Photon.	Optica
Phys Rev. Lett.	Phys. Rev. A

Referee Activity

Nat. Photon.	Opt. Lett.
JOSA B	Spectrosc. Lett.
PNAS	Photonics Res.

Selected Refereed Publications

1. L. Rego*, **K. M. Dorney***, N. J. Brooks, Q. L. Nguyen, C.-T. Liao, J. San Román, D. C. Couch, A. Liu, E. Pisanty, M. Lewenstein, L. Plaja, H. C. Kapteyn, M. M. Murnane, and C. Hernández-García. "Generation of extreme ultraviolet beams with time-varying orbital angular momentum." [Science](#) **364** (6447), eaaw9486 (2019).

⇒ *These authors contributed equally.

⇒ Featured on [Science cover](#) and in international media outlets:

([BBC](#), [Nat. Geo.](#), [New Scientist](#), [El País](#), [El Mundo](#), [Phys.org](#), [NRC Handelsblad](#))

2. E. Pisanty, L. Rego, J. San Román, A. Picón, **K. M. Dorney**, H. C. Kapteyn, M. M. Murnane, L. Plaja, M. Lewenstein, and C. Hernández-García. "Conservation of torus-knot angular momentum in high-order harmonic generation." [Phys. Rev. Lett.](#) **122**, 203201 (2019).

3. **K. M. Dorney**, L. Rego, N. J. Brooks, J. San Román, C.-T. Liao, J. L. Ellis, D. Zusin, C. Gentry, Q. L. Nguyen, J. M. Shaw, A. Picón, L. Plaja, H. C. Kapteyn, M. Murnane, C. Hernández-García. "Controlling the polarization and vortex charge of attosecond high-harmonic beams via optical spin-orbit momentum coupling". [Nat. Photonics](#) **1**, 123-130 (2019).

4. J. Ellis, **K. Dorney**, D. Hickstein, N. Brooks, C. Gentry, C. Hernández-García, D. Zusin, J. Shaw, Q. Nguyen, C. Mancuso, G. Matthijs-Jansen, S. Witte, H. Kapteyn, M. Murnane. "High harmonics with spatially varying ellipticity". [Optica](#) **5** (4), 479 (2018).

5. **K. M. Dorney**, J. Ellis, C. Hernández-García, D. Hickstein, C. Mancuso, N. Brooks, T. Fan, G. Fan, D. Zusin, C. Gentry, P. Grychtol, H. C. Kapteyn, M. Murnane. "Helicity-selective enhancement and polarization control of attosecond high-harmonic waveforms driven by bichromatic circularly polarized laser fields". [Phys. Rev. Lett.](#) **119** (6), 063201 (2017).

6. C. A. Mancuso, **K. M. Dorney**, D. D. Hickstein, J. L. Chaloupka, J. L. Ellis, F. J. Dollar, R. Knut, P. Grychtol, D. Zusin, C. Genry, M. Gopalakrishnan, H. C. Kapteyn, and M. M. Murnane. "Controlling nonsequential double ionization in two-color circularly polarized femtosecond laser fields". [Phys. Rev. Lett.](#) **117** (13), 133201 (2016).

7. T. Fan, P. Grychtol, R. Knut, C. Hernández-García, D. D. Hickstein, D. Zusin, C. Gentry, F. J. Dollar, C. A. Mancuso, C. W. Hogle, O. Kfir, D. Legut, K. Carva, J. L. Ellis, **K. M. Dorney**, C. Chen, O. G. Shpyrko, E. E. Fullerton, O. Cohen, P. M. Oppeneer, D. B. Milošević, A. Becker, A. A. Jaroń-Becker, T. Popmintchev, M. M. Murnane, and H. C. Kapteyn. "Bright circularly polarized soft X-ray high harmonics for X-ray magnetic circular dichroism". [Proc. Natl. Acad. Sci. U.S.A.](#) **112** (46), 14206 (2015).

8. D. D. Hickstein, F. J. Dollar, P. Grychtol, J. L. Ellis, R. Knut, C. Hernández-García, D. Zusin, C. Gentry, J. M. Shaw, T. Fan, **K. M. Dorney**, A. Becker, A. Jaroń-Becker, H. C. Kapteyn, M. M. Murnane, C. G. Durfee. "Non-collinear generation of angularly isolated circularly polarized high harmonics". [Nat. Photonics](#) **9**, 743 (2015).

Selected Conference Proceedings

[†]Postdeadline Paper

[‡]Invited Talk

[†]1. **K. M. Dorney**, L. Rego, N. J. Brooks, Q. Nguyen, C.-T. Liao, J. San Román, D. E. Couch, A. Liu, E. Pisanty, M. Lewenstein, L. Plaja, H. C. Kapteyn, M. M. Murnane, C. Hernández-García. "Attosecond Extreme Ultraviolet Beams with Time-Varying Orbital Angular Momentum: The Self-Torque of Light". *CLEO: 2019*, Technical Digest (Optical Society of America. 2019), [paper JTh5C.10](#)

2. **K. M. Dorney**, L. Rego, N. J. Brooks, J. San Román, Chen-Ting Laio, J. L. Ellis, D. Zusin, C. Gentry, Q. L. Nguyen, J. M. Shaw, A. Picón, L. Plaja, H. C. Kapteyn, M. M. Murnane, C. Hernández-García. "Helicity in a twist: attosecond, extreme ultraviolet vortex beams with designer spin and orbital angular momenta." *CLEO: 2019*, Technical Digest (Optical Society of America. 2019), [paper FF2C.6](#)

[‡]3. **K. M. Dorney**, J. L. Ellis, C. Hernández-García, D. D. Hickstein, C. A. Mancuso, N. Brooks, T. Fan, G. Fan, P. Grychtol, D. Zusin, C. Gentry, H. C. Kapteyn, and M. M. Murnane. *Elliptically polarized attosecond pulse trains produced via circularly polarized high harmonic generation*. *CLEO: 2017*, Technical Digest (Optical Society of America. 2017), [paper ATH4C.3](#)

[†]4. T. Fan, P. Grychtol, R. Knut, C. Hernández-García, D. D. Hickstein, D. Zusin, C. Gentry, F. Dollar, C. Mancuso, C. Hogle, O. Kfir, D. Legut, K. Carva, J. Ellis, **K. Dorney**, C. Chen, O. Shpyrko, E. E. Fullerton, O. Cohen, P. M. Oppeneer, D. B. Milošević, A. Becker, A. A. Jaroń-Becker, T. Popmintchev, M. M. Murnane, and H. C. Kapteyn. "Bright soft X-ray high harmonic generation with circular polarization for X-ray magnetic circular dichroism." *CLEO: 2015 Postdeadline Paper Digest*, (Optical Society of America, 2015), [paper JTh5C.1](#)

