

# Stanford

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## Thomas Devereaux

Professor of Photon Science, of Materials Science and Engineering and Senior Fellow at the Precourt Institute for Energy  
Photon Science Directorate

### Bio

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#### BIO

Professor Devereaux received his Ph.D. in Physics from the University of Oregon in 1991, M.S. from University of Oregon in 1988, and B.S from New York University in 1986.

Professor Devereaux is a professor in Materials Science & Engineering and Photon Science at SLAC National Accelerator Laboratory and Stanford University, and a Senior Fellow of the Precourt Institute for Energy. He was formerly the Director of the Stanford Institute for Materials and Energy Sciences (SIMES) from 2011-2020.

Professor Devereaux was a Post-doctoral Fellow at the Max Planck Institut, Stuttgart, (1991-1993), a Post-doctoral Fellow at the University of California, Davis, CA, (1993-1996), an Assistant Professor at The George Washington University, Washington, DC, (1996-1999), and an Associate Professor (1999-2006) and Professor (2006-2007) at the University of Waterloo, Waterloo, ON, Canada

His main research interests lie in the areas of theoretical condensed matter physics and computational physics. His research effort focuses on using the tools of computational physics to understand quantum materials. The goal of his research is to understand equilibrium and ultrafast non-equilibrium electron dynamics via a combination of analytical theory and numerical simulations to provide insight into materials of relevance to energy science. His group carries out numerical simulations on SIMES' high-performance compute cluster, the National Energy Research Scientific Computing Center (NERSC), and other US computational facilities. The specific focus of the group is the development of numerical methods and theories of photon-based spectroscopies of strongly correlated quantum materials and novel materials for energy storage.

#### ACADEMIC APPOINTMENTS

- Professor, Photon Science Directorate
- Senior Fellow, Precourt Institute for Energy
- Professor, Materials Science and Engineering
- Principal Investigator, Stanford Institute for Materials and Energy Sciences

#### HONORS AND AWARDS

- Fellowship, U. S. Department of Education (1989-1991)
- Junior Scholar Incentive Award, George Washington University (1998)
- Research Fellowship, Alexander von Humboldt Foundation (2002-2006)
- Premier's Research Excellence Award, Province of Ontario (2003)

- Scientist Research Fellowship, Embassy of France (2005 & 2006)
- Fellow, American Physical Society (2008)

## PROFESSIONAL EDUCATION

- Ph.D., University of Oregon , Physics (1991)
- M.S., University of Oregon , Physics (1988)
- B.S., New York University , Mathematics & Physics (1986)

## LINKS

- Devereaux Group: <https://web.stanford.edu/group/photontheory/>
- Stanford Institute for Materials and Energy Sciences: <http://simes.stanford.edu/>
- SLAC National Accelerator Laboratory: <https://www6.slac.stanford.edu/>
- Precourt Institute for Energy: <https://energy.stanford.edu>

## Research & Scholarship

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### CURRENT RESEARCH AND SCHOLARLY INTERESTS

My main research interests lie in the areas of theoretical condensed matter physics and computational physics. My research effort focuses on using the tools of computational physics to understand quantum materials. Fortunately, we are poised in an excellent position as the speed and cost of computers have allowed us to tackle heretofore unaddressed problems involving interacting systems. The goal of my research is to understand electron dynamics via a combination of analytical theory and numerical simulations to provide insight into materials of relevance to energy science. My group carries out numerical simulations on SIMES' high-performance supercomputer and US and Canadian computational facilities. The specific focus of my group is the development of numerical methods and theories of photon-based spectroscopies of strongly correlated materials.

## Teaching

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### COURSES

#### 2023-24

- Quantum Mechanics for Materials Science: MATSCI 185 (Win)
- Quantum Mechanics for Materials Science: MATSCI 215 (Win)

#### 2022-23

- Condensed Matter Seminar: APPPHYS 470 (Aut, Win, Spr)
- Quantum Mechanics for Materials Science: MATSCI 185 (Win)
- Quantum Mechanics for Materials Science: MATSCI 215 (Win)
- Statistical Mechanics for Materials & Materials Chemistry: MATSCI 310 (Spr)

#### 2021-22

- Condensed Matter Seminar: APPPHYS 470 (Aut, Win, Spr)
- Quantum Mechanics for Materials Science: MATSCI 185 (Win)
- Quantum Mechanics for Materials Science: MATSCI 215 (Win)

#### 2020-21

- Nanoscale Materials Physics Computation Laboratory: MATSCI 165, MATSCI 175 (Win)
- Statistical Mechanics for Materials & Materials Chemistry: MATSCI 310 (Win)

## STANFORD ADVISEES

### Doctoral Dissertation Reader (AC)

Zhaoyu Han, Jay Qu, Kejun Xu

### Orals Chair

Pavel Nosov

### Postdoctoral Faculty Sponsor

Luhang Yang, Zoe Zhu

### Doctoral Dissertation Advisor (AC)

Emma Cuddy, Katherine Ding, Sean Hsu, Malhar Kute, Fangze Liu, Eder Lomeli, Ta Tang, Wen Wang, Rong Zhang, Sijia Zhao

### Doctoral Dissertation Advisor (NonAC)

Martin Gonzalez

### Doctoral Dissertation Co-Advisor (AC)

Vladimir Calvera

### Master's Program Advisor

Luka Radosavljevic

### Postdoctoral Research Mentor

Daniel Jost

### Doctoral (Program)

Ariana Tse

## Publications

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### PUBLICATIONS

#### • Anharmonic strong-coupling effects at the origin of the charge density wave in CsV<sub>3</sub>Sb<sub>5</sub>. *Nature communications*

He, G., Peis, L., Cuddy, E. F., Zhao, Z., Li, D., Zhang, Y., Stumberger, R., Moritz, B., Yang, H., Gao, H., Devereaux, T. P., Hackl, R. 2024; 15 (1): 1895

#### • Collective Nature of Orbital Excitations in Layered Cuprates in the Absence of Apical Oxygens. *Physical review letters*

Martinelli, L., Wohlfeld, K., Pelliciari, J., Arpaia, R., Brookes, N. B., Di Castro, D., Fernandez, M. G., Kang, M., Krockenberger, Y., Kummer, K., McNally, D. E., Paris, E., Schmitt, et al 2024; 132 (6): 066004

#### • Charge order and superconductivity in a two-band model for infinite-layer nickelates *PHYSICAL REVIEW B*

Peng, C., Jiang, H., Moritz, B., Devereaux, T. P., Jia, C. 2023; 108 (24)

#### • The Wiedemann-Franz law in doped Mott insulators without quasiparticles. *Science (New York, N.Y.)*

Wang, W. O., Ding, J. K., Schattner, Y., Huang, E. W., Moritz, B., Devereaux, T. P. 2023; 382 (6674): 1070-1073

#### • Proximate spin liquid and fractionalization in the triangular antiferromagnet KYbSe<sub>2</sub> *NATURE PHYSICS*

Scheie, A. O., Ghioldi, E. A., Xing, J., Paddison, J. M., Sherman, N. E., Dupont, M., Sanjewa, L. D., Lee, S., Woods, A. J., Abernathy, D., Pajerowski, D. M., Williams, T. J., Zhang, et al 2023

#### • Quantitative assessment of the universal thermopower in the Hubbard model. *Nature communications*

Wang, W. O., Ding, J. K., Huang, E. W., Moritz, B., Devereaux, T. P.  
2023; 14 (1): 7064

● **Angle-resolved pair photoemission theory for correlated electrons** *PHYSICAL REVIEW B*

Devereaux, T. P., Claassen, M., Huang, X., Zaletel, M., Moore, J. E., Morr, D., Mahmood, F., Abbamonte, P., Shen, Z.  
2023; 108 (6)

● **Bogoliubov quasiparticle on the gossamer Fermi surface in electron-doped cuprates** *NATURE PHYSICS*

Xu, K., Guo, Q., Hashimoto, M., Li, Z., Chen, S., He, J., He, Y., Li, C., Berntsen, M. H., Rotundu, C. R., Lee, Y. S., Devereaux, T. P., Rydh, et al  
2023

● **Ingredients of strong interactions in cuprates** *PHYSICA C-SUPERCONDUCTIVITY AND ITS APPLICATIONS*

Shen, Z., Devereaux, T.  
2023; 613

● **From Stoner to local moment magnetism in atomically thin Cr<sub>2</sub>Te<sub>3</sub>.** *Nature communications*

Zhong, Y., Peng, C., Huang, H., Guan, D., Hwang, J., Hsu, K. H., Hu, Y., Jia, C., Moritz, B., Lu, D., Lee, J. S., Jia, J. F., Devereaux, et al  
2023; 14 (1): 5340

● **Publisher Correction: Geometric frustration of Jahn-Teller order in the infinite-layer lattice.** *Nature*

Kim, W. J., Smeaton, M. A., Jia, C., Goodge, B. H., Cho, B. G., Lee, K., Osada, M., Jost, D., Ivlev, A. V., Moritz, B., Kourkoutis, L. F., Devereaux, T. P., Hwang,  
et al  
2023

● **Traces of electron-phonon coupling in one-dimensional cuprates.** *Nature communications*

Tang, T., Moritz, B., Peng, C., Shen, Z. X., Devereaux, T. P.  
2023; 14 (1): 3129

● **Effects of rare-earth magnetism on the superconducting upper critical field in infinite-layer nickelates.** *Science advances*

Wang, B. Y., Wang, T. C., Hsu, Y. T., Osada, M., Lee, K., Jia, C., Duffy, C., Li, D., Fowlie, J., Beasley, M. R., Devereaux, T. P., Fisher, I. R., Hussey, et al  
2023; 9 (20): ead6655

● **Enhanced superconductivity by near-neighbor attraction in the doped extended Hubbard model** *PHYSICAL REVIEW B*

Peng, C., Wang, Y., Wen, J., Lee, Y. S., Devereaux, T. P., Jiang, H.  
2023; 107 (20)

● **Reversal of spin-polarization near the Fermi level of the Rashba semiconductor BiTeCl** *NPJ QUANTUM MATERIALS*

Qu, J., Han, X., Sakamoto, S., Jia, C. J., Liu, J., Li, H., Guan, D., Zeng, Y., Schuler, M., Kirchmann, P. S., Moritz, B., Hussain, Z., Devereaux, et al  
2023; 8 (1)

● **Signatures of the exciton gas phase and its condensation in monolayer 1T-ZrTe<sub>2</sub>.** *Nature communications*

Song, Y., Jia, C., Xiong, H., Wang, B., Jiang, Z., Huang, K., Hwang, J., Li, Z., Hwang, C., Liu, Z., Shen, D., Sobota, J. A., Kirchmann, et al  
2023; 14 (1): 1116

● **Geometric frustration of Jahn-Teller order in the infinite-layer lattice.** *Nature*

Kim, W. J., Smeaton, M. A., Jia, C., Goodge, B. H., Cho, B., Lee, K., Osada, M., Jost, D., Ivlev, A. V., Moritz, B., Kourkoutis, L. F., Devereaux, T. P., Hwang, et al  
2023

● **Fluctuating intertwined stripes in the strange metal regime of the Hubbard model** *br* *PHYSICAL REVIEW B*

Huang, E. W., Liu, T., Wang, W. O., Jiang, H., Mai, P., Maier, T. A., Johnston, S., Moritz, B., Devereaux, T. P.  
2023; 107 (8)

● **Identification of a characteristic doping for charge order phenomena in Bi-2212 cuprates via RIXS** *PHYSICAL REVIEW B*

Lu, H., Hashimoto, M., Chen, S., Ishida, S., Song, D., Eisaki, H., Nag, A., Garcia-Fernandez, M., Arpaia, R., Ghiringhelli, G., Braicovich, L., Zaanen, J., Moritz, et al  
2022; 106 (15)

● **Spectra of a gapped quantum spin liquid with a strong chiral excitation on the triangular lattice** *PHYSICAL REVIEW B*

Tang, T., Moritz, B., Devereaux, T. P.  
2022; 106 (6)

- **Thermodynamics of correlated electrons in a magnetic field** *COMMUNICATIONS PHYSICS*  
Ding, J. K., Wang, W. O., Moritz, B., Schattner, Y., Huang, E. W., Devereaux, T. P.  
2022; 5 (1)
- **A broken translational symmetry state in an infinite-layer nickelate** *NATURE PHYSICS*  
Rossi, M., Osada, M., Choi, J., Agrestini, S., Jost, D., Lee, Y., Lu, H., Wang, B., Lee, K., Nag, A., Chuang, Y., Kuo, C., Lee, et al  
2022
- **Electronic structure of superconducting nickelates probed by resonant photoemission spectroscopy** *MATTER*  
Chen, Z., Osada, M., Li, D., Been, E. M., Chen, S., Hashimoto, M., Lu, D., Mo, S., Lee, K., Wang, B., Rodolakis, F., McChesney, J. L., Jia, et al  
2022; 5 (6)
- **Self-energy dynamics and the mode-specific phonon threshold effect in Kekulé-ordered graphene.** *National science review*  
Zhang, H., Bao, C., Schuler, M., Zhou, S., Li, Q., Luo, L., Yao, W., Wang, Z., Devereaux, T. P., Zhou, S.  
2022; 9 (5): nwab175
- **Momentum-resolved resonant inelastic soft X-ray scattering (qRIXS) endstation at the ALS** *JOURNAL OF ELECTRON SPECTROSCOPY AND RELATED PHENOMENA*  
Chuang, Y., Feng, X., Cruz, A., Hanzel, K., Brown, A., Spucces, A., Frano, A., Lee, W., Kim, J., Chen, Y., Smith, B., Pepper, J. S., Shao, et al  
2022; 257
- **Magnon heat transport in a two-dimensional Mott insulator** *PHYSICAL REVIEW B*  
Wang, W. O., Ding, J. K., Moritz, B., Huang, E. W., Devereaux, T. P.  
2022; 105 (16)
- **Sign-free determinant quantum Monte Carlo study of excitonic density orders in a two-orbital Hubbard-Kanamori model** *PHYSICAL REVIEW B*  
Huang, X., Moritz, B., Claassen, M., Devereaux, T. P.  
2022; 105 (16)
- **Anisotropy of the magnetic and transport properties of EuZn<sub>2</sub>As<sub>2</sub>** *PHYSICAL REVIEW B*  
Wang, Z., Been, E., Gaudet, J., Alqasseri, G. A., Fruhling, K., Yao, X., Stuhr, U., Zhu, Q., Ren, Z., Cui, Y., Jia, C., Moritz, B., Chowdhury, et al  
2022; 105 (16)
- **On the Nature of Valence Charge and Spin Excitations via Multi-Orbital Hubbard Models for Infinite-Layer Nickelates** *FRONTIERS IN PHYSICS*  
Been, E. M., Hsu, K. H., Hu, Y., Moritz, B., Cui, Y., Jia, C., Devereaux, T. P.  
2022; 10
- **Distinguishing finite-momentum superconducting pairing states with two-electron photoemission spectroscopy** *PHYSICAL REVIEW B*  
Mahmood, F., Devereaux, T., Abbamonte, P., Morr, D. K.  
2022; 105 (6)
- **Polarization-Modulated Angle-Resolved Photoemission Spectroscopy: Toward Circular Dichroism without Circular Photons and Bloch Wave-function Reconstruction** *PHYSICAL REVIEW X*  
Schueler, M., Pincelli, T., Dong, S., Devereaux, T. P., Wolf, M., Rettig, L., Ernststorfer, R., Beaulieu, S.  
2022; 12 (1)
- **Unconventional spectral signature of Tc in a pure d-wave superconductor.** *Nature*  
Chen, S., Hashimoto, M., He, Y., Song, D., He, J., Li, Y., Ishida, S., Eisaki, H., Zaanen, J., Devereaux, T. P., Lee, D., Lu, D., Shen, et al  
1800; 601 (7894): 562-567
- **Web-based methods for X-ray and photoelectron spectroscopies** *COMPUTATIONAL MATERIALS SCIENCE*  
Devereaux, T. P., Moritz, B., Jia, C., Kas, J. J., Rehr, J. J.  
2021; 200
- **Orbitally selective resonant photodoping to enhance superconductivity** *PHYSICAL REVIEW B*  
Tang, T., Wang, Y., Moritz, B., Devereaux, T. P.  
2021; 104 (17)
- **Intertwined States at Finite Temperatures in the Hubbard Model** *JOURNAL OF THE PHYSICAL SOCIETY OF JAPAN*  
Huang, E. W., Wang, W. O., Ding, J. K., Liu, T., Liu, F., Huang, X., Moritz, B., Devereaux, T. P.

2021; 90 (11)

● **Phonon-Mediated Long-Range Attractive Interaction in One-Dimensional Cuprates** *PHYSICAL REVIEW LETTERS*

Wang, Y., Chen, Z., Shi, T., Moritz, B., Shen, Z., Devereaux, T. P.  
2021; 127 (19): 197003

● **Superconducting Fluctuations in Overdoped Bi<sub>2</sub>Sr<sub>2</sub>CaCu<sub>2</sub>O<sub>8+delta</sub>** *PHYSICAL REVIEW X*

He, Y., Chen, S., Li, Z., Zhao, D., Song, D., Yoshida, Y., Eisaki, H., Wu, T., Chen, X., Lu, D., Meingast, C., Devereaux, T. P., Birgeneau, et al  
2021; 11 (3)

● **X-ray scattering from light-driven spin fluctuations in a doped Mott insulator** *COMMUNICATIONS PHYSICS*

Wang, Y., Chen, Y., Devereaux, T. P., Moritz, B., Mitrano, M.  
2021; 4 (1)

● **Numerical approaches for calculating the low-field dc Hall coefficient of the doped Hubbard model** *PHYSICAL REVIEW RESEARCH*

Wang, W. O., Ding, J. K., Moritz, B., Schattner, Y., Huang, E. W., Devereaux, T. P.  
2021; 3 (3)

● **Precursor of pair-density wave in doping Kitaev spin liquid on the honeycomb lattice** *NPJ QUANTUM MATERIALS*

Peng, C., Jiang, Y., Devereaux, T. P., Jiang, H.  
2021; 6 (1)

● **Coulombically-stabilized oxygen hole polarons enable fully reversible oxygen redox** *ENERGY & ENVIRONMENTAL SCIENCE*

Abate, I. I., Pemmaraju, C., Kim, S., Hsu, K. H., Sainio, S., Moritz, B., Vinson, J., Toney, M. F., Yang, W., Gent, W. E., Devereaux, T. P., Nazar, L. F., Chueh, et al  
2021

● **Evolution of the electronic structure in Ta<sub>2</sub>NiSe<sub>5</sub> across the structural transition revealed by resonant inelastic x-ray scattering** *PHYSICAL REVIEW B*

Lu, H., Rossi, M., Kim, J., Yavas, H., Said, A., Nag, A., Garcia-Fernandez, M., Agrestini, S., Zhou, K., Jia, C., Moritz, B., Devereaux, T. P., Shen, et al  
2021; 103 (23)

● **Magic Doping and Robust Superconductivity in Monolayer FeSe on Titanates.** *Advanced science (Weinheim, Baden-Wurttemberg, Germany)*

Jia, T., Chen, Z., Rebec, S. N., Hashimoto, M., Lu, D., Devereaux, T. P., Lee, D. H., Moore, R. G., Shen, Z. X.  
2021; 8 (9): 2003454

● **Cycling mechanism of Li<sub>2</sub>MnO<sub>3</sub>: Li-CO<sub>2</sub> batteries and commonality on oxygen redox in cathode materials** *JOULE*

Zhuo, Z., Dai, K., Qiao, R., Wang, R., Wu, J., Liu, Y., Peng, J., Chen, L., Chuang, Y., Pan, F., Shen, Z., Liu, G., Li, et al  
2021; 5 (4): 975-997

● **Gauge invariance of light-matter interactions in first-principle tight-binding models** *PHYSICAL REVIEW B*

Schueler, M., Marks, J. A., Murakami, Y., Jia, C., Devereaux, T. P.  
2021; 103 (15)

● **Tendencies of enhanced electronic nematicity in the Hubbard model and a comparison with Raman scattering on high-temperature superconductors** *PHYSICAL REVIEW B*

Liu, T., Jost, D., Moritz, B., Huang, E. W., Hackl, R., Devereaux, T. P.  
2021; 103 (13)

● **Electronic Structure Trends Across the Rare-Earth Series in Superconducting Infinite-Layer Nickelates** *PHYSICAL REVIEW X*

Been, E., Lee, W., Hwang, H. Y., Cui, Y., Zaanen, J., Devereaux, T., Moritz, B., Jia, C.  
2021; 11 (1)

● **Magic Doping and Robust Superconductivity in Monolayer FeSe on Titanates** *ADVANCED SCIENCE*

Jia, T., Chen, Z., Rebec, S. N., Hashimoto, M., Lu, D., Devereaux, T. P., Lee, D., Moore, R. G., Shen, Z.  
2021

● **Spectral properties and enhanced superconductivity in renormalized Migdal-Eliashberg theory** *PHYSICAL REVIEW B*

Nosarzewski, B., Schuler, M., Devereaux, T. P.  
2021; 103 (2)

● **Preserving a robust CsPbI<sub>3</sub> perovskite phase via pressure-directed octahedral tilt.** *Nature communications*

Ke, F. n., Wang, C. n., Jia, C. n., Wolf, N. R., Yan, J. n., Niu, S. n., Devereaux, T. P., Karunadasa, H. I., Mao, W. L., Lin, Y. n.

2021; 12 (1): 461

● **Coulombically-stabilized oxygen hole polarons enable fully reversible oxygen redox.** *Energy & environmental science*

Abate, I. I., Pemmaraju, C. D., Kim, S. Y., Hsu, K. H., Sainio, S., Moritz, B., Vinson, J., Toney, M. F., Yang, W., Gent, W. E., Devereaux, T. P., Nazar, L. F., Chueh, et al  
2021; 14 (9)

● **Dynamical signatures of symmetry protected topology following symmetry breaking** *Physical Review Research*

Marks, J. A., Schüler, M., Devereaux, T. P.  
2021; 3 (2)

● **Anomalously strong near-neighbor attraction in doped 1D cuprate chains.** *Science (New York, N.Y.)*

Chen, Z., Wang, Y., Rebec, S. N., Jia, T., Hashimoto, M., Lu, D., Moritz, B., Moore, R. G., Devereaux, T. P., Shen, Z.  
2021; 373 (6560): 1235-1239

● **Correlation-Assisted Quantized Charge Pumping** *Physical Review B*

Marks, J., Schüler, M., Budich, J. C., Devereaux, T. P.  
2021; 103 (3): 035112

● **Time-resolved RIXS experiment with pulse-by-pulse parallel readout data collection using X-ray free electron laser.** *Scientific reports*

Lu, H., Gauthier, A., Hepting, M., Tremsin, A. S., Reid, A. H., Kirchmann, P. S., Shen, Z. X., Devereaux, T. P., Shao, Y. C., Feng, X., Coslovich, G., Hussain, Z., Dakovski, et al  
2020; 10 (1): 22226

● **Site-specific structure at multiple length scales in kagome quantum spin liquid candidates** *PHYSICAL REVIEW MATERIALS*

Smaha, R. W., Boukahil, I., Titus, C. J., Jiang, J., Scheckton, J. P., He, W., Wen, J., Vinson, J., Wang, S., Chen, Y., Teat, S. J., Devereaux, T. P., Das Pemmaraju, et al  
2020; 4 (12)

● **Emergence of quasiparticles in a doped Mott insulator** *COMMUNICATIONS PHYSICS*

Wang, Y., He, Y., Wohlfeld, K., Hashimoto, M., Huang, E. W., Lu, D., Mo, S., Komiya, S., Jia, C., Moritz, B., Shen, Z., Devereaux, T. P.  
2020; 3 (1)

● **Observing photo-induced chiral edge states of graphene nanoribbons in pump-probe spectroscopies** *NPJ QUANTUM MATERIALS*

Chen, Y., Wang, Y., Claassen, M., Moritz, B., Devereaux, T. P.  
2020; 5 (1)

● **How Circular Dichroism in Time- and Angle-Resolved Photoemission Can Be Used to Spectroscopically Detect Transient Topological States in Graphene** *PHYSICAL REVIEW X*

Schuler, M., De Giovannini, U., Huebener, H., Rubio, A., Sentef, M. A., Devereaux, T. P., Werner, P.  
2020; 10 (4)

● **Spectroscopic fingerprint of charge order melting driven by quantum fluctuations in a cuprate (Aug, 10.1038/s41567-020-0993-7, 2020)** *NATURE PHYSICS*

Lee, W. S., Zhou, K., Hepting, M., Li, J., Nag, A., Walters, A. C., Garcia-Fernandez, M., Robarts, H. C., Hashimoto, M., Lu, H., Nosarzewski, B., Song, D., Eisaki, et al  
2020

● **Spectroscopic fingerprint of charge order melting driven by quantum fluctuations in a cuprate** *NATURE PHYSICS*

Lee, W. S., Zhou, K. J., Hepting, M., Li, J., Nag, A., Walters, A. C., Garcia-Fernandez, M., Robarts, H. C., Hashimoto, M., Lu, H., Nosarzewski, B., Song, D., Eisaki, et al  
2020

● **DC Hall coefficient of the strongly correlated Hubbard model** *NPJ QUANTUM MATERIALS*

Wang, W. O., Ding, J. K., Moritz, B., Huang, E. W., Devereaux, T. P.  
2020; 5 (1)

● **Ground state phase diagram of the doped Hubbard model on the four-leg cylinder** *PHYSICAL REVIEW RESEARCH*

Jiang, Y., Zaanen, J., Devereaux, T. P., Jiang, H.  
2020; 2 (3)

● **Berry curvature memory through electrically driven stacking transitions** *NATURE PHYSICS*

Xiao, J., Wang, Y., Wang, H., Pemmaraju, C. D., Wang, S., Muscher, P., Sie, E. J., Nyby, C. M., Devereaux, T. P., Qian, X., Zhang, X., Lindenberg, A. M.  
2020

- **Metallic surface states in a correlated d-electron topological Kondo insulator candidate FeSb<sub>2</sub>.** *Proceedings of the National Academy of Sciences of the United States of America*

Xu, K., Chen, S., He, Y., He, J., Tang, S., Jia, C., Ma, E. Y., Mo, S., Lu, D., Hashimoto, M., Devereaux, T. P., Shen, Z.  
2020

- **Time-resolved resonant inelastic x-ray scattering in a pumped Mott insulator** *PHYSICAL REVIEW B*

Wang, Y., Chen, Y., Jia, C., Moritz, B., Devereaux, T. P.  
2020; 101 (16)

- **Ab initio molecular dynamics study of SiO<sub>2</sub> lithiation** *CHEMICAL PHYSICS LETTERS*

Abate, I., Jia, C. J., Moritz, B., Devereaux, T. P.  
2020; 739

- **Site-Specific Structure at Multiple Length Scales in Kagome Quantum Spin Liquid Candidates.** *Physical review materials*

Smaha, R. W., Boukahil, I., Titus, C. J., Jiang, J. M., Shekleton, J. P., He, W., Wen, J., Vinson, J., Wang, S. G., Chen, Y. S., Teat, S. J., Devereaux, T. P., Pemmaraju, et al  
2020; 4 (12)

- **Biexciton Condensation in Electron-Hole-Doped Hubbard Bilayers: A Sign-Problem-Free Quantum Monte Carlo Study.** *Physical review letters*

Huang, X. X., Claassen, M. n., Huang, E. W., Moritz, B. n., Devereaux, T. P.  
2020; 124 (7): 077601

- **Facile diamond synthesis from lower diamondoids.** *Science advances*

Park, S. n., Abate, I. I., Liu, J. n., Wang, C. n., Dahl, J. E., Carlson, R. M., Yang, L. n., Prakapenka, V. B., Greenberg, E. n., Devereaux, T. P., Jia, C. n., Ewing, R. C., Mao, et al  
2020; 6 (8): eaay9405

- **The role of metal substitution in tuning anion redox in sodium metal layered oxides revealed by X-ray spectroscopy and theory.** *Angewandte Chemie (International ed. in English)*

Nazar, L. n., Abate, I. n., Kim, S. Y., Das Pemmaraju, C. n., Toney, M. F., Yang, W. n., Devereaux, T. P., Chueh, W. C.  
2020

- **Angle-resolved photoemission spectroscopy of a Fermi-Hubbard system** *NATURE PHYSICS*

Brown, P. T., Guardado-Sanchez, E., Spar, B. M., Huang, E. W., Devereaux, T. P., Bakr, W. S.  
2020; 16 (1): 26-+

- **Strange metallicity in the doped Hubbard model.** *Science (New York, N.Y.)*

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