

List of publications

Urs Staub

11.04.2022 5 most important publications red titles, No's. 109, 146, 176, 198, 201

2022

264. **CONICAL SPIN ORDER WITH CHIRAL QUADRUPOLE HELIX IN CsCuCl₃**
Hiroki Ueda, Elizabeth Skoropata, Max Burian, Victor Ukleev, Gérard Sylvester Perren, Ludmila Leroy, Julien Zaccaro, and *Urs Staub*, Phys. Rev. **B105**, 144408 (2022). DOI: 10.1103/PhysRevB.105.144408
263. **OPTICAL EXCITATION OF ELECTROMAGNONS IN HEXAFERRITE**
Hiroki Ueda, Hoyoung Jang, Sae Hwan Chun, Hyeong-Do Kim, Minseok Kim, Sang-Youn Park, Simone Finizio, Nazaret Ortiz Hernandez, Vladimir Ovuka, Matteo Savoini, Tsuyoshi Kimura, Yoshikazu Tanaka, Andrin Doll, and *Urs Staub*, Phys. Rev. Research **4**, 023007 (2022). DOI: 10.1103/PhysRevResearch.4.023007
262. **ULTRAFAST PROBE OF MAGNETIZATION DYNAMICS IN MULTIFERROIC CoCr₂O₄ AND Co_{0.975}Ge_{0.025}Cr₂O₄**
S. Parchenko, N. Ortiz Hernández, M. Savoini, M. Porer, M. Decker, B. Burganov, E. M. Bothschafter, C. Dornes, Y. W. Windsor, M. Ramakrishnan, L. Rettig, M. Buzzi, D. Schick, K. Holldack, N. Pontius, C. Schüssler-Langeheine, M. Radovic, J. A. Heuver, B. Noheda, S. L. Johnson, and *U. Staub*, Phys. Rev. **B105**, 064432 (2022). <https://doi.org/10.1103/PhysRevB.103.224429>
261. **EXCHANGE SCALING OF ULTRAFAST ANGULAR MOMENTUMTRANSFER IN 4f ANTIFERROMAGNETS**
Y. W. Windsor, S.-E. Lee, D. Zahn, V. Borisov, D. Thonig, K. Kliemt, A. Ernst, C. Schüssler-Langeheine, N. Pontius, *U. Staub*, C. Krellner, D. V. Vyalikh, O. Eriksson and L. Rettig, Nature Materials (2022), <https://doi.org/10.1038/s41563-022-01206-4>

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260. **ANTI-SYMMETRIC COMPTON SCATTERING IN LiNiPO₄: TOWARDS ADIRECT PROBE OF THE MAGNETO-ELECTRIC MULTIPOLE MOMENT**
Sayantika Bhowal, Daniel O'Neill, Michael Fechner, Nicola A. Spaldin, *Urs Staub*, Jon Duffy, and Stephen P. Collins, Open Research Europe, (2021) <https://doi.org/10.12688/openreseurope.13863.1>
259. **ULTRAFAST ELECTRON LOCALIZATION IN THE EuNi₂(Si_{0.21}Ge_{0.79})₂ CORRELATED METAL**
Jose R. L. Mardegan, Serhane Zerdane, Giulia Mancini, Vincent Esposito, Jérémy R. Rouxel, Roman Mankowsky, Cristian Svetina, Namrata Gurung, Sergii Parchenko, Michael Porer, Bulat Burganov, Yunpei Deng, Paul Beaud, Gerhard Ingold, Bill Pedrini, Christopher Arrell, Christian Erny, Andreas Dax, Henrik Lemke, Martin Decker, Nazaret Ortiz, Chris Milne, Grigory Smolentsev, Laura Maurel, Steven L. Johnson, Akihiro Mitsuda, Hirofumi Wada, Yuichi Yokoyama, Hiroki Wadati, and *Urs Staub*, Phys. Rev. Research **3**, 033211 (2021). <https://doi.org/10.1103/PhysRevResearch.3.033211>

258. **MAGNETIC ORDER OF TETRAGONAL CuO ULTRATHIN FILMS**
N. Ortiz Hernández, Z. Salman, T. Prokscha, A. Suter, J. R. L. Mardegan, S. Moser, A. Zakharova, C. Piamonteze, and *U. Staub*, Phys. Rev. B **103**, 224429 (2021).
<https://doi.org/10.1103/PhysRevB.103.224429>

257. **NONEQUILIBRIUM CHARGE-DENSITY-WAVE ORDER BEYOND THE THERMAL LIMIT**
J. Maklar, Y. W. Windsor, C. W. Nicholson, M. Puppini, P. Walmsley, V. Esposito, M. Porer, J. Rittmann, D. Leuenberger, M. Kubli, M. Savoini, E. Abreu, S. L. Johnson, P. Beaud, G. Ingold, *U. Staub*, I. R. Fisher, R. Ernstorf, M. Wolf, and L. Rettig, Nature Commun. **12**, 2499 (2021). <https://doi.org/10.1038/s41467-021-22778-w>

256. **HARD X-RAY TRANSIENT GRATING SPECTROSCOPY ON BISMUTH GERMANATE**
Jérémy R. Rouxel, Danny Fainozzi, Roman Mankowsky, Benedikt Rösner, Gediminas Seniutinas, Riccardo Mincigrucci, Sara Catalini, Laura Foglia, Riccardo Cucini, Florian Döring, Adam Kubec, Frieder Koch, Filippo Bencivenga, Andre Al Haddad, Alessandro Gessini, Alexei A. Maznev, Claudio Cirelli, Simon Gerber, Bill Pedrini, Giulia F. Mancini, Elia Razzoli, Max Burian, Hiroki Ueda, Georgios Pamfilidis, Eugenio Ferrari, Yunpei Deng, Aldo Mozzanica, Philip Johnson, Dmitry Ozerov, Maria Grazia Izzo, Cettina Bottari, Christopher Arrell, Edwin James Divall, Serhane Zerdane, Mathias Sander, Gregor Knopp, Paul Beaud, Henrik Till Lemke, Chris J. Milne, Christian David, Renato Torre, Majed Chergui, Keith A. Nelson, Claudio Masciovecchio, *Urs Staub*, Luc Patthey and Cristian Svetina, Nature Photonics **15**, 499 (2021). <https://doi.org/10.1038/s41566-021-00797-9>

255. **CORRELATION BETWEEN ELECTRONIC AND STRUCTURAL ORDERS IN 1T-TiSe₂**
Hiroki Ueda, Michael Porer, José R. L. Mardegan, Sergii Parchenko, Namrata Gurung, Federica Fabrizi, Mahesh Ramakrishnan, Larissa Boie, Martin Josef Neugebauer, Bulat Burganov, Max Burian, Steven Lee Johnson, Kai Rossnagel, and *Urs Staub*, Phys. Rev. Research **3**, L022003 (2021).

254. **BURIED MOIRÉ SUPERCELLS THROUGH SrTiO₃ NANOLAYER RELAXATION**
Max Burian, Bill Francesco Pedrini, Nazaret Ortiz Hernandez, Hiroki Ueda, C. A. F. Vaz, Marco Caputo, Milan Radovic, and *Urs Staub*, Phys. Rev. Research **3**, 013225 (2021).

253. **MAGNETIC FIELD DEPENDENT CYCLOIDAL ROTATION IN PRISTINE AND GE DOPED CoCr₂O₄**
N. Ortiz Hernandez, S. Parchenko, J. R. L. Mardegan, M. Porer, E. Schierle, E. Weschke, M. Ramakrishnan, M. Radovic, J. A. Heuver, B. Noheda, N. Daffe, J. Dreiser, H. Ueda and *U. Staub*, Phys. Rev. B **103**, 085123 (2021).

252. **STRUCTURAL INVOLVEMENT IN THE MELTING OF THE CHARGE DENSITY WAVE IN 1T-TiSe₂**
Max Burian, Michael Porer, Jose R. L. Mardegan, Vincent Esposito, Sergii Parchenko, Bulat Burganov, Namrata Gurung, Mahesh Ramakrishnan, Valerio Scagnoli, Hiroki Ueda, Sonia Francoual, Federica Fabrizi, Yoshikazu Tanaka, Tadashi Togashi, Yuya Kubota, Makina Yabashi, Kai Rossnagel, Steven L. Johnson, and *Urs Staub*, Phys. Rev. Research **3**, 013128 (2021).

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251. **MULTIPLE MAGNETIC ORDERING PHENOMENA IN MULTIFERROIC o-HoMnO₃**
Y. W. Windsor, M. Ramakrishnan, L. Rettig, A. Alberca, T. Lippert, C. W. Schneider and *Urs Staub*, Phys. Rev. B **102**, 214423 (2020).
250. **SOFT X-RAY ABSORPTION OF THIN FLMS DETECTED USING SUBSTRATE LUMINESCENCE: A PERFORMANCE ANALYSIS**
Cinthia Piamonteze, Yoav William Windsor, Sridhar R. V. Avula, Eugenie Kirk and *Urs Staub*, J. Synch. Rad. **27**, 1289 (2020).
249. **EVOLUTION OF FELD-INDUCED METASTABLE PHASES IN THE SHASTRY-SUTHERLAND LATTICE MAGNET TmB₄**
D. Lancon, V. Scagnoli, *U. Staub*, O. A. Petrenko, M. Ciomaga Hatnean, E. Canevet, R. Sibille, S. Francoual, J. R. L. Mardegan, K. Beauvois, G. Balakrishnan, L. J. Heyderman, Ch. Ruegg, and T. Fennell, Phys. Rev. B **102**, 060407(R) (2020).
248. **DETERMINISTIC CONTROL OF AN ANTIFERROMAGNETIC SPIN ARRANGEMENT USING ULTRAFAST OPTICAL EXCITATION**
Yoav Windsor, Arthur Ernst, Kurt Kummer, Kristin Kliemt, Christian Schuessler-Langeheine, Niko Pontius, *Urs Staub*, Evgueni Chulkov, Cornelius Krellner, Denis Vyalikh, and Laurenz Rettig, Communications Phys. **3**, 139 (2020).
247. **ORBITAL DYNAMICS DURING AN ULTRAFAST INSULATOR TO METAL TRANSITION**
Sergii Parchenko, Eugenio Paris, Daniel McNally Elsa Abreu, Markus Dantz, Elisabeth M. Bothschafter, Alexander H. Reid, William F. Schlotter, Ming-Fu Lin Scott F. Wandel, Giacomo, Coslovich, Sioan Zohar Georgi L. Dakovski, J. J. Turner, S. Moeller Yi Tseng, Milan Radovic, Conny Saathe Marcus Agaaker, Joseph E. Nordgren, Stephen L. Johnson, Thorsten Schmitt and *Urs Staub*, Phys. Rev. Research **2**, 023110 (2020).
246. **CORRELATIONS BETWEEN ELECTRONIC ORDER AND STRUCTURAL DISTORTIONS AND THEIR ULTRAFAST DYNAMICS IN THE SINGLE-LAYER MANGANITE Pr_{0.5}Ca_{1.5}MnO₄**
M. Porer, L. Rettig, , E. M. Bothschafter, V. Esposito, , R. B. Versteeg, P. H. M. van Loosdrecht, M. Savoini, J. Rittmann, M. Kubli, G. Lantz, O. J. Schumann, , A. A. Nugroho, M. Braden, G. Ingold, S. L. Johnson, P. Beaud, and *U. Staub*, Phys. Rev. B **101**, 075119 (2020).
245. **COHERENT EPITAXIAL SEMICONDUCTOR - FERROMAGNETIC INSULATOR InAs/EuS INTERFACES: BAND ALIGNMENT AND MAGNETIC STRUCTURE**
Yu Liu, Alessandra Luchini, Sara Martí-Sánchez, Christian Koch, Sergej Schuwalow, Sabbir A. Khan, Tomaš Stankevič, Sonia Francoual, Jose R. L. Mardegan, Jonas A. Krieger, Vladimir N. Strocov, Jochen Stahn, Carlos A. F. Vaz, Mahesh Ramakrishnan, *Urs Staub*, Kim Lefmann, Gabriel Aeppli, Jordi Arbiol, Peter Krogstrup, ACS Appl. Mater. Interfaces **12**, 8780 (2020).

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244. **FIELD-INDUCED DOUBLE SPIN SPIRAL IN A FRUSTRATED CHIRAL MAGNET**

Mahesh Ramakrishnan, Evan Constable, Andres Cano, Maxim Mostovoy, Jonathan S. White, Namrata Gurung, Enrico Schierle, Sophie de Brion, Claire V. Colin, Frederic Gay, Pascal Lejay, Eric Ressouche, Eugen Weschke, Valerio Scagnoli, Rafik Ballou, Virginie Simonet and *Urs Staub*, NPJ Quantum Materials **4**, 60 (2019).

243. ULTRAFAST TRANSIENT INCREASE OF OXYGEN OCTAHEDRAL ROTATIONS IN A PEROVSKITE

M. Porer, M. Fechner, M. Kubli, M. J. Neugebauer, S. Parchenko, V. Esposito, A. Narayan, N. A. Spaldin, R. Huber, M. Radovic, E. M. Bothschafter, J. M. Glowia, T. Sato, S. Song, S. L. Johnson, and *U. Staub*, Phys. Rev. Research **1**, 2012005(R) (2019).

242. CONTINUOUS MAGNETIC PHASE TRANSITION IN ARTIFICIAL SQUARE ICE

Oles Sendetskyi, Valerio Scagnoli, Naëmi Leo, Luca Anghinolfi, Aurora Alberca, Jan Lüning, *Urs Staub*, Peter Michael Derlet, and Laura Jane Heyderman, Phys. Rev. B **99**, 214430 (2019).

241. MAGNETIC AND ELECTRONIC PROPERTIES AT THE γ -Al₂O₃/SrTiO₃ INTERFACE

J. R. L. Mardegan, D. V. Christensen, Y. Z. Chen, S. Parchenko, S. R. V. Avula, N. Ortiz-Hernandez, M. Decker, C. Piamonteze, N. Pryds, and *U. Staub*, Phys. Rev. B **99**, 134423 (2019).

240. DISENTANGLING CHARGE AND STRUCTURAL CONTRIBUTIONS DURING COHERENT ATOMIC MOTIONS STUDIED BY ULTRAFAST RESONANT X-RAY DIFFRACTION

L. Rettig, A. Caviezel, S. O. Mariager, G. Ingold, C. Dornes, S-W. Huang, J. A. Johnson, M. Radovic, T. Huber, T. Kubacka, A. Ferrer, H. T. Lemke, M. Chollet, D. Zhu, J. M. Glowia, M. Sikorski, A. Robert, M. Nakamura, M. Kawasaki, Y. Tokura, S. L. Johnson, P. Beaud, and *U. Staub*, Phys. Rev. B **99**, 134302 (2019).

240. TERAHERTZ-DRIVEN PHONON UPCONVERSION IN SrTiO₃

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C. Dornes, Y. Acremann, M. Savoini, M. Kubli, M. J. Neugebauer, E. Abreu, L. Huber, G. Lantz, C. A. F. Vaz, H. Lemke, E. M. Bothschafter, M. Porer, V. Esposito, L. Rettig, M. Buzzi, A. Alberca, Y. W. Windsor, P. Beaud, *U. Staub*, Diling Zhu, Sanghoon Song, J. M. Glowia & S. L. Johnson, Nature **565**, 209 (2019).

238. KINETICS OF A PHONON-MEDIATED LASER-DRIVEN STRUCTURAL PHASE TRANSITION IN Sn₂P₂Se₆

Martin Kubli, Matteo Savoini, Elsa Abreu, Bulat Burganov, Gabriel Lantz, Lucas Huber, Martin J. Neugebauer, Larissa Boie, Vincent Esposito, Elisabeth M. Bothschafter, Sergii Parchenko, Sebastian Grübel, Michael Porer, Jochen Rittmann, Paul Beaud, *Urs Staub*, Makina Yabashi, Yoshikazu Tanaka, Tetsuo Katayama, Tadashi Togashi, Anton A. Kohutych, Yulian M. Vysochanskii and Steven L. Johnson, Appl. Sci. **9**, 525 (2019).

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 Vincent Esposito, Laurenz Rettig, Elisabeth M. Bothschafter, Yunpei Deng, Christian Dornes, Lucas Huber, Tim Huber, Gerhard Ingold, Yuichi Inubushi, Tetsuo Katayama, Tomoya Kawaguchi, Henrik Lemke, Kanade Ogawa, Shigeki Owada, Milan Radovic, Mahesh Ramakrishnan, Zoran Ristic, Valerio Scagnoli, Yoshikazu Tanaka, Tadashi Togashi, Kensuke Tono, Ivan Usov, Yoav W. Windsor, Makina Yabashi, Steven L. Johnson, Paul Beaud, and *Urs Staub*, *Struct. Dyn.* **5**, 064501 (2018).
236. **MULTIFERROIC PHASE DIAGRAM OF E-TYPE RMnO₃ FILMS STUDIED BY NEUTRON AND X-RAY DIFFRACTION**
 Saumya Mukherjee, Kenta Shimamoto, Yoav William Windsor, Mahesh Ramakrishnan, Sergii Parchenko, *Urs Staub*, Laurent Chapon, Bachir Ouladdiaf, Marisa Medarde, Tian Shang, Elisabeth A. Müller, Michel Kenzelmann, Thomas Lippert, Christof W. Schneider, and Christof Niedermayer, *Phys. Rev. B* **98**, 174416 (2018).
235. **RELATIONSHIP BETWEEN CRYSTAL STRUCTURE AND MULTIFERROIC ORDERS IN ORTHORHOMBIC PEROVSKITE MANGANITES**
 N. S. Fedorova, Y. W. Windsor, C. Findler, M. Ramakrishnan, A. Bortis, L. Rettig, K. Shimamoto, E. M. Bothschafter, M. Porer, V. Esposito, Y. Hu, A. Alberca, T. Lippert, C. W. Schneider, *U. Staub*, and N. A. Spaldin, *Phys. Rev. Materials* **2**, 104414 (2018).
234. **DIRECT OBSERVATION OF ELECTRON DENSITY RECONSTRUCTION AT THE METAL-INSULATOR TRANSITION IN NaOsO₃**
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233. **ULTRAFAST RELAXATION DYNAMICS OF THE ANTIFERRODISTORTIVE PHASE IN Ca DOPED SrTiO₃**
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 A. Rodriguez-Fernandez, V. Esposito, D. F. Sanchez, K. D. Finkelstein, P. Juranic, *U. Staub*, D. Grolimund, S. Reiche and B. Pedrini, *Acta Cryst.* **A74**, 75 (2018).
231. **PHOTOINDUCED TRANSITIONS IN MAGNETORESISTIVE MANGANITES: A COMPREHENSIVE VIEW**
 V. Esposito, L. Rettig, E. Abreu, E. M. Bothschafter, G. Ingold, M. Kawasaki, M. Kubli, G. Lantz, M. Nakamura, J. Rittman, M. Savoini, Y. Tokura, *U. Staub*, S. L. Johnson, and P. Beaud, *Phys. Rev. B* **97**, 014312 (2018).

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230. **PERSPECTIVE: OPPORTUNITIES FOR ULTRAFAST SCIENCE AT SWISSFEL**

- Rafael Abela, Paul Beaud, Jeroen A. van Bokhoven, Majed Chergui, Thomas Feurer, Johannes Haase, Gerhard, Ingold, Steven L. Johnson, Gregor Knopp, Henrik Lemke, Chris J. Milne, Bill Pedrini, Peter Radi, Gebhard, Schertler, Jörg Standfuss, *Urs Staub*, and Luc Patthey, *Struct. Dyn.* **4**, 061602 (2017).
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S. L. Johnson, M. Savoini, P. Beaud, G. Ingold, *U. Staub*, F. Carbone, L. Castiglioni, M. Hengsberger, and J. Osterwalder, *Struct. Dyn.* **4**, 061506 (2017).
 228. **PERSPECTIVE: THz-DRIVEN NUCLEAR DYNAMICS FROM SOLIDS TO MOLECULES**
Peter Hamm, Markus Meuwly, Steve L. Johnson, Paul Beaud, and *Urs Staub*, *Struct. Dyn.* **4**, 061601 (2017).
 227. **DYNAMIC PATHWAY OF THE PHOTOINDUCED PHASE TRANSITION OF TbMnO₃**
Elisabeth M. Bothschafter, Elsa Abreu, Laurenz Rettig, Teresa Kubacka, Sergii Parchenko, Michael Porer, Christian Dornes, Yoav William Windsor, Mahesh Ramakrishnan, Aurora Alberca, Sebastian Manz, Jonathan Saari, Seyed M. Koohpayeh, Manfred Fiebig, Thomas Forrest, Philipp Werner, Sarnjeet S. Dhesi, Steven L. Johnson, and *Urs Staub*, *Phys. Rev. B* **96**, 184414 (2017).
 226. **INTERPLAY OF Fe AND Tm MOMENTS THROUGH THE SPIN-REORIENTATION TRANSITION IN TmFeO₃**
U. Staub, L. Rettig, E. M. Bothschafter, Y. W. Windsor, M. Ramakrishnan, S. R. V. Avula, J. Dreiser, C. Piamonteze, V. Scagnoli, S. Mukherjee, C. Niedermayer, M. Medarde, and E. Pomjakushina, *Phys. Rev. B* **96**, 174408 (2017).
 225. **NONLINEAR ELECTRON-PHONON COUPLING IN DOPED MANGANITES**
V. Esposito, M. Fechner, R. Mankowsky, H. Lemke, M. Chollet, J.M. Glowia, M. Nakamura, M. Kawasaki, Y. Tokura, *U. Staub*, P. Beaud, and M. Först, *Phys. Rev. Lett.* **118**, 247601 (2017).
 224. **MAGNETIC PROPERTIES OF STRAINED MULTIFERROIC CoCr₂O₄: A soft x-ray study**
Y. W. Windsor, C. Piamonteze, M. Ramakrishnan, A. Scaramucci, L. Rettig, J. A. Huever, E. M. Bothschafter, N. S. Bingham, A. Alberca, S. R. V. Avula, B. Noheda, and, *U. Staub*, *Phys. Rev. B* **95**, 224413 (2017).
 223. **CRYSTAL SYMMETRY LOWERING IN CHIRAL MULTIFERROIC Ba₃TaFe₃Si₂O₁₄ OBSERVED BY X-RAY MAGNETIC SCATTERING**
M. Ramakrishnan, Y. Joly, Y. W. Windsor, L. Rettig, A. Alberca, E. M. Bothschafter, P. Lejay, R. Ballou, V. Simonet, V. Scagnoli, and *U. Staub*, *Phys. Rev B* **95**, 205145 (2017).
 222. **ULTRAFAST X-RAY DIFFRACTION PROBE OF TERAHERTZ FIELD-DRIVEN SOFT MODE DYNAMICS IN SrTiO₃**
M. Kozina, T. van Driel, M. Chollet, T. Sato, J. M. Glowia, S. Wandel, M. Radovic, *U. Staub*, and M. C. Hoffmann, *Struct. Dyn.* **4**, 054301 (2017).
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