

## List of publications

Urs Staub

14.8.2020 5 most important publications red titles, No's. 109, 146, 176, 198, 201

2020

250. **SOFT X-RAY ABSORPTION OF THIN FLMS DETECTED USING SUBSTRATE LUMINESCENCE: A PERFORMANCE ANALYSIS**  
Cynthia Piamonteze, Yoav William Windsor, Sridhar R. V. Avula, Eugenie Kirk and *Urs Staub*, *J. Synch. Rad.* **in press.** (2020).
249. **EVOLUTION OF FELD-INDUCED METASTABLE PHASES IN THE SHASTRY-SUTHERLAND LATTICE MAGNET  $TmB_4$**   
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. Ruedg, and T. Fennell, *Phys. Rev. B, (R)* **in press.** (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  $Pr_{0.5}Ca_{1.5}MnO_4$**   
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. Glowina, 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  $\gamma$ -Al<sub>2</sub>O<sub>3</sub>/SrTiO<sub>3</sub> 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. Glowina, 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 SrTiO<sub>3</sub>**  
 M. Kozina, M. Fechner, P. Marsik, T. van Driel, J. M. Glowina, C. Bernhard, M. Radovic, D. Zhu, S. Bonetti, *U. Staub* and M. C. Hoffmann, Nature Phys. **15**, 387 (2019).
239. **THE ULTRAFAST EINSTEIN–DE HAAS EFFECT**  
 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. Glowina & S. L. Johnson, Nature **565**, 209 (2019).
238. **KINETICS OF A PHONON-MEDIATED LASER-DRIVEN STRUCTURAL PHASE TRANSITION IN Sn<sub>2</sub>P<sub>2</sub>Se<sub>6</sub>**  
 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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237. **DYNAMICS OF THE PHOTOINDUCED INSULATOR-TO-METAL TRANSITION IN A NICKELATE FILM**  
 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. **RELATIONSHIP BETWEEN CRYSTAL STRUCTURE AND MULTIFERROIC ORDERS IN ORTHORHOMBIC PEROVSKITE MANGANITES**  
 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 NaOsO<sub>3</sub>**  
 N. Gurung, N. Leo, S. P. Collins, G. Nisbet, G. Smolentsev, M. García-Fernández, K. Yamaura, L. J. Heyderman, *U. Staub*, Y. Joly, D. D. Khalyavin, S. W. Lovesey and V. Scagnoli, *Phys. Rev. B* **98** 115116 (2018).
233. **ULTRAFAST RELAXATION DYNAMICS OF THE ANTIFERRODISTORTIVE PHASE IN Ca DOPED SrTiO<sub>3</sub>**  
 M. Porer, M. Fechner, E. Bothschafter, L. Rettig, M. Savoini, V. Esposito, J. Rittmann, M. Kubli, M. J. Neugebauer, E. Abreu, T. Kubacka, T. Huber, G. Lantz, S. Parchenko, S. Grübel, A. Paarmann, Noack, P. Beaud, G. Ingold, U. Aschauer, S. L. Johnson, and *U. Staub*, *Phys. Rev. Lett.* **121**, 055701 (2018).
232. **SPATIAL DISPLACEMENT OF FORWARD-DIFFRACTED X-RAY BEAMS BY PERFECT CRYSTALS**  
 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).
229. **WATCHING ULTRAFAST RESPONSES OF STRUCTURE AND MAGNETISM IN CONDENSED MATTER WITH MOMENTUM-RESOLVED PROBES**  
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 TbMnO<sub>3</sub>**  
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 TmFeO<sub>3</sub>**  
*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**  
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224. **MAGNETIC PROPERTIES OF STRAINED MULTIFERROIC CoCr<sub>2</sub>O<sub>4</sub>: 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 Ba<sub>3</sub>TaFe<sub>3</sub>Si<sub>2</sub>O<sub>14</sub> 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 SrTiO<sub>3</sub>**  
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221. **LOCAL TERAHERTZ FIELD ENHANCEMENT FOR TIME-RESOLVED X-RAY DIFFRACTION**  
M. Kozina, M. Pancaldi, C. Bernhard, T. van Driel, J. M. Glownia, P. Marsik, M. Radovic,

C. A. F. Vaz, D. Zhu, S. Bonetti, *U. Staub*, and M. C. Hoffmann, *Appl. Phys. Lett.* **110**, 081106 (2017).

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218. **ITINERANT AND LOCALIZED MAGNETIZATION DYNAMICS IN ANTIFERROMAGNETIC Ho**

L. Rettig, C. Dornes, N. Thielemann-Kühn, N. Pontius, H. Zabel, D. L. Schlagel, T. A. Lograsso, M. Chollet, A. Robert, M. Sikorski, S. Song, J. M. Glowina, C. Schüßler-Langeheine, S. L. Johnson, and *U. Staub*, *Phys. Rev. Lett.* **116**, 257202 (2016).

217. **QUASISTATIC MAGNETOELECTRIC MULTIPOLES AS ORDER PARAMETER FOR PSEUDOGAP PHASE IN CUPRATE SUPERCONDUCTORS**

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216. **ULTRAFAST STRUCTURAL DYNAMICS OF THE ORTHORHOMBIC DISTORTION IN THE FE-PNICTIDE PARENT COMPOUND BaFe<sub>2</sub>As<sub>2</sub>**

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215. **MULTIFERROIC PROPERTIES OF UNIAXIALLY COMPRESSED ORTHORHOMBIC HoMnO<sub>3</sub> THIN FILMS**

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213. **MAGNETOELECTRONICS—ELECTRIC FIELD CONTROL OF MAGNETISM IN THE SOLID STATE**

C. A. F. Vaz and *U. Staub*, *J. Phys. Condensed Matt.*, **27** 500301 (2015).

212. **ELEMENT-SPECIFIC MAGNETIZATION REDISTRIBUTION AT  $\text{YBa}_2\text{Cu}_3\text{O}_7/\text{La}_{2/3}\text{Ca}_{1/3}\text{MnO}_3$  INTERFACES**  
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211. **COHERENT ACOUSTIC PERTURBATION OF SECOND-HARMONIC-GENERATION IN NiO**  
L. Huber, A. Ferrer, T. Kubacka, T. Huber, C. Dornes, T. Sato, K. Ogawa, K. Tono, T. Katayama, Y. Inubushi, M. Yabashi, Yoshikazu Tanaka, P. Beaud, M. Fiebig, V. Scagnoli, *U. Staub*, and S. L. Johnson, *Phys. Rev. B*, **92**, 094304 (2015).
210. **EMITTING ELECTRONS THROUGH PHONONS**  
Valerio Sagnoli and *Urs Staub*, *News and Views, Nature Mater.* **14**, 859 (2015).
209. **INTERFACIAL PROPERTIES OF  $\text{LaMnO}_3/\text{LaNiO}_3$  SUPERLATTICES GROWN ALONG (001) AND (111) ORIENTATIONS**  
C. Piamonteze, M. Gibert, J. Heidler, J. Dreiser, S. Rusponi, H. Brune, J.-M. Triscone, F. Nolting, and *U. Staub*, *Phys. Rev. B*, **92**, 014426 (2015).
208. **FERRO-TYPE ORDER OF MAGNETO-ELECTRIC QUADRUPOLES AS AN ORDER-PARAMETER FOR THE PSEUDO-GAP PHASE OF A CUPRATE SUPERCONDUCTOR**  
S. W. Lovesey, D. D. Khalyavin, and *U. Staub*, *J. Phys. Condens. Matter (fast track)* **27**, 292201 (2015).
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206. **FERMI SURFACE OF THREE-DIMENSIONAL  $\text{La}_{1-x}\text{Sr}_x\text{MnO}_3$  EXPLORED BY SOFT-X-RAY ARPES: RHOMBOHEDRAL LATTICE DISTORTION AND ITS EFFECT ON MAGNETORESISTANCE**  
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205. **COMBINING THz LASER EXCITATION WITH RESONANT SOFT X-RAY SCATTERING AT THE LINAC COHERENT LIGHT SOURCE**  
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204. **NONLINEAR DELAYED SYMMETRY BREAKING IN A SOLID EXCITED BY HARD X-RAY FEL PULSES**  
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**201. A TIME-DEPENDENT ORDER PARAMETER FOR ULTRAFAST PHOTO-INDUCED PHASE TRANSITIONS**

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**200. ORBITAL CORRELATIONS AND DIMENSIONAL CROSSOVER IN EPITAXIAL Pr<sub>0.5</sub>Ca<sub>0.5</sub>MnO<sub>3</sub>/La<sub>0.5</sub>Sr<sub>0.5</sub>MnO<sub>3</sub> SUPERLATTICES**

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**198. LARGE AMPLITUDE SPIN DYNAMICS DRIVEN BY A THz PULSE IN RESONANCE WITH AN ELECTROMAGNON**

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