

Dmitry Reznik

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SUMMARY

Lead a neutron/x-ray/Raman scattering group investigating dynamics, structure, and magnetism in complex solids.

CURRENT RESEARCH

Colorado University-Boulder, USA

Associate Professor

Recent research focused on magnetism, superconductivity, and charge and lattice dynamics in complex quantum solids with experiments performed at x-ray and neutron facilities worldwide. **Funding from NSF and DOE**

H-index: 27 (google scholar)

Raman scattering projects

- Time-resolved UV Raman scattering at an NSF-funded Raman scattering laboratory.
- Electronic excitations in quantum materials with strong spin-orbit coupling
- Phonons and magnons in superconductors and related materials

X-ray scattering projects

- Charge excitations in high T_c superconductors
- Electron-phonon coupling in Fe-based superconductors
- Phonon softening and charge density wave formation

Neutron scattering projects

- Correlated electron physics in high T_c superconductors
- Effects of charge/magnetic checkerboard order on optic phonon dispersions
- Charge-orbital fluctuations in colossal magnetoresistance manganites
- Electron-phonon coupling and superconductivity in borocarbides
- Itinerant magnetism in MnSi

Experiments at: CEA-Saclay, France, Institut Laue Langevin (ILL), France, National Institute of Standards and Technology (NIST), Hahn-Maitner Institut (HMI), Germany, ISIS, England, Paul Scherer Institut, Switzerland, Munich Research Reactor, Germany, SPring-8, Japan, ESRF, France, Advanced Photon Source (APS), Argonne.

Collaborations with: Karlsruhe Institute of Technology (KIT), Brookhaven National Laboratory, NIST, Max Planck Institut (MPI), Stuttgart, MPI Dresden, Tohoku University, Japan, Osaka University, Japan, SPring-8, University of Tokyo, Universität Karlsruhe, HMI, TU Munchen, ESRF, APS, Carnegie Institution, University of Tennessee, University of Virginia, Florida International University, Stanford University, National Renewable Energy Lab.

PREVIOUS RESEARCH

Utilized x-ray, neutron, and Raman scattering to investigate nuclear and magnetic structure as well as lattice, charge, and spin dynamics of high T_c superconductors, fullerenes, and itinerant magnets. Developed extensions to industry standards in computer science.

X-ray scattering projects

- Measured wavevector-range of anomalous phonon softening in the stripe phase of the cuprates.
- Detailed measurements, analysis, and calculations of powder diffraction by carbon nanotubes.
- Discovered new soft phonons in chromium

Neutron scattering projects

- Isolated giant electron-phonon coupling related to charge stripes in high T_c superconductors
- Discovered hourglass magnetic dispersion in $\text{YBa}_2\text{Cu}_3\text{O}_{6.95}$
- Partial magnetic order in MnSi under hydrostatic pressure
- Identified phonon anomalies associated with colossal magnetoresistance (CMR) in manganites.
- Found optical magnon in $\text{YBa}_2\text{Cu}_3\text{O}_{6.1}$
- Measured self-energy effects of bond-buckling modes in $\text{YBa}_2\text{Cu}_3\text{O}_7$
- Elucidated temperature dependence of the magnetic resonance peak in $\text{YBa}_2\text{Cu}_3\text{O}_7$.
- Investigated rotational dynamics of alkali-doped C_{60} .

Raman scattering projects

- Established doping dependence of plane-polarized electronic Raman scattering in high T_c superconductors.
- Performed first measurements of the full spectrum and resonant profile of Raman active c-axis charge excitations in $\text{YBa}_2\text{Cu}_3\text{O}_7$.
- Improved understanding of the normal state electronic Raman scattering in $\text{YBa}_2\text{Cu}_3\text{O}_{6+x}$ and confirmed previous results on the superconducting state.

TEACHING

Colorado University-Boulder, USA

Mentoring

- Supervise thesis research of graduate students.
Ph.D. defended: Jih-An Yang, Spring 2017 “Conventional and Ultrafast Pump-Probe Time-Resolved Raman Spectroscopy of Strongly Correlated Systems”
Masters defended: William Oldham, Fall 2016 “Hysteresis Of The Nearly Commensurate To Commensurate Charge Density Wave Phase Transition In Tantalum Disulfide Using Raman Spectroscopy.”
- Supervise undergraduate independent study.

Classroom teaching:

- Solid State Physics (graduate and undergraduate level) Phys7440 (Fa'10,Fa'11, Fa'16) Phys 4340 (Sp'11, Sp'12,Sp'13,Sp'17) Enrollment: 10-25 students
- Freshman Lab: Phys1140 (Sp'15) Enrollmnt: ~600 students
- Sophmore Lab: Phys2150 (Fa'15, Fa'18) ~100 students
- Junior Lab Phys3330: (Fa'17,Sp'18) Enrollment: ~60 students
- Senior Lab Phys4430: (Fa'14) Enrollment: ~25 students
- Introduction to Modern Physics: Phys2130 (Fa'12, Sp'13) Enrollment ~70 students
- Optics: (Fa'18) ~ 25 students
- Materials Science and Engineering: Guest lecture on x-ray diffraction (Fa'17)
- Developed Raman Scattering lab for senior lab class, Phys4430

Online:

- Recorded an invited online lecture for Physics 412 at Rice University (Sp'17)

EMPLOYMENT HISTORY

University of Colorado-Boulder , Boulder, CO <i>Associate professor</i>	2010-present
IFP, Forschungszentrum Karlsruhe (now KIT) , Germany 2001 – 2009 <i>Group leader, neutron/x-ray scattering</i>	
Employment and Consulting in Information Technology <i>Project leader, software architect</i>	1997 – 2001
University of California-San Diego <i>Research associate, Physics department</i>	1996
National Institute of Standards and Technology <i>Physicist, Reactor Radiation Division, sponsored by National Research Council</i>	1992 – 1995
University of Illinois at Urbana-Champaign <i>Graduate assistant, Physics department</i>	1988 – 1992

VISITING APPOINTMENTS

Brookhaven National Laboratory , Upton, NY <i>Visiting scientist, summer program</i>	2007
Tohoku University , Sendai, Japan <i>Visiting professor, sponsored by International Frontier Center for Advanced Materials</i>	2006
Laboratoire Léon Brillouin , Saclay, France <i>Visiting scientist</i>	1995
Institute for Solid State Physics (ISSP) , Chernogolovka, Russia <i>Visiting scientist</i>	1992

AWARDS

Fellow Of the American Physical Society

EDUCATION

Ph.D., 1993, in Physics

University of Illinois at Urbana-Champaign

Advisor: M.V. Klein

Thesis: "Electronic Light Scattering in the Layered Cuprates"

A.B., 1988, in Physics and Mathematics

Cornell University

PERSONAL INFO

Citizenship: USA

Foreign Languages: French, Russian

INVITED TALKS

Cornell High Energy Synchrotron Source (CHESS) Seminar	2018
Naval Research Lab Theory Group Seminar	2018
Ultrafast Dynamics, Washington, DC.	2017
Symposium on High Temperature Superconductivity, Moscow, Russia	2017
Workshop on Quantum Criticality, Aspen	2017
Superstripes 2017, Ischia, Italy	2017
Advanced Photon Source User Meeting, Argonne	2017
Rice University Solid State Physics Seminar	2017
Pairing Interaction of High Temperature Superconductors, Suwon, South Korea	2016
X-ray Echo Spectroscopy Workshop, Argonne Nat'l lab	2016
IMPACT 2016, Cargese, France	2016
Superstripes'16, Ischia, Italy	2016
EMN Meeting, Prague, Czech Republic	2016
Superstripes'15, Ischia, Italy	2015
Competing Interactions and Colossal Responses in Transition Metal Compounds, Telluride, CO	2015
XXIII International Materials Research Congress (IMRC), Cancun, Mexico	2014
International School and Workshop on Electronic Crystals ECRYS-2014, Cargese, France	2014
Neutron Scattering Program Principal Investigators' Meeting, Gaithersburg, MD	2014
XXII International Materials Research Congress (IMRC), Cancun, Mexico	2013

Competing Interactions and Colossal Responses in Transition Metal Compounds, Telluride, CO	2013
High Resolution Spectroscopy with x-rays, Wako, Japan	2012
Neutron Scattering Program Principal Investigators' Meeting, Gaithersburg, MD	2012
APS March Meeting, Boston, MA	2012
Forum on Inelastic Neutron scattering from Correlated Electron Systems, Knoxville, TN	2011
Electronic Structure of Novel Materials, Ringberg, Germany	2011
Workshop on High T_c and Fe-based Superconductors, Sendai, Japan	2011
The XXII Congress and General Assembly of the International Union of Crystallography, Madrid, Spain	2011
2011 Telluride Workshop on Correlated Electron Systems, Telluride, CO	2011
Workshop on Hard Condensed Matter with Neutrons, Knoxville, TN	2010
Super-PIRE Kickoff Meeting, Knoxville, TN	2010
Superconductivity Explored by Neutron Scattering Experiments, Grenoble, France	2010
Recent Progress on Spectroscopies and High-T_c Superconductors, Sendai, Japan	2010
Electronic Structure of Fe-based Superconductors, Stuttgart, Germany	2010
APS March Meeting, Portland, OR	2010
8th Asia-Pacific Workshop on Novel Quantum Materials, Seoul, South Korea	2009
Workshop on cuprate and pnictide superconductors, Sendai, Japan	2009
Workshop on High Temperature Superconductivity, Tokyo, Japan	2009
Workshop on Spectroscopies in Strongly Correlated Electron systems, Sendai, Japan	2008
Stripes'08, Erice, Italy	2008
Nanodynamics Beamline Workshop, Hyogo, Japan	2008
APS March Meeting, New Orleans, LA	2008
Spectroscopies in Novel Superconductors (SNS2007), Sendai, Japan	2007
CREST Workshop on Electron-Phonon Coupling in Correlated Electron Systems, Tokyo, Japan	2007
Stripes'06, Rome, Italy	2006
8th International Conference on Materials and Mechanisms of Superconductivity and High Temperature Superconductors (M2S-HTSC-VIII), Dresden, Germany	2006
HGF-Workshop "Condensed Matter", Jülich, Germany	2006
Phonons in Correlated Electron Systems, Sendai, Japan	2006

Phonon Measurements of Correlated Electron Materials , Kouto, Japan	2006
Orbital 2005 , Hamburg, Germany	2005
Dynamical Properties of Solids 30 , Cesky Krumlov, Czech Republic	2005
Fifth International Conference on New Theories, Discoveries, and Applications of Superconductors and Related Materials , Chonqing, China	2004
Self Organized Strongly Correlated Electron Systems , Santorini, Greece	2003
Laboratoire Leon Brillouin (LLB) Users Meeting , Saclay, France	2002
International Winterschool on Electronic Properties of High Temperature Superconductors , Kirchberg, Austria	1992

Additional Seminars

1990 - 2015

LLB, NIST, Brookhaven Natl. Lab., Naval Resesearch Lab., MPI Stuttgart, Los Alamos National Laboratory, University of California-San Diego, University of California-Davis, University of Minnesota, University of Virginia, University of Illinois, Institute of Solid State Physics (Russia), Karlsruhe Institute of Technology, Argonne National Lab, Okayama University, Nagoya University, Tohoku University, University of Tokyo, Spallation Neutron Source, University of Colorado, Columbia University, Argonne National Lab

PUBLICATION LIST

1. **Electron-phonon coupling in undoped cuprate $\text{YBa}_2\text{Cu}_3\text{O}_6$ estimated from Raman and optical conductivity spectra**, D. Farina, G. De Filippis, A. S. Mishchenko, N. Nagaosa, Jih-An Yang, D. Reznik, T. Wolf, and V. Cataudella, arXiv:1807.04256 (2018)
2. **Soft phonons reveal the nematic correlation length in $\text{Ba}(\text{Fe}_{0.94}\text{Co}_{0.06})_2\text{As}_2$** , F. Weber, D. Parshall, L. Pintschovius, J.-P. Castellán, M. Kauth, M. Merz, Th. Wolf, M. Schütt, J. Schmalian, R. M. Fernandes, and D. Reznik, *Phys. Rev. B* **98**, 014516 (2018)
3. **Polaronic correlations and phonon renormalization in $\text{La}_{1-x}\text{Sr}_x\text{MnO}_3$ ($x=0.2, 0.3$)**, M Maschek, J-P Castellán, D Lamago, D Reznik, F Weber, *Phys. Rev. B* **97**, 245139 (2018)
4. **Evidence for a nematic phase in $\text{La}_{1.75}\text{Sr}_{0.25}\text{NiO}_4$** , R. Zhong, B.L. Winn, G. Gu, D. Reznik, J.M. Tranquada, *Physical Review Letters* **118**, 177601 (2017)
5. **Restoration of quantum critical behavior by disorder in pressure-tuned (Mn,Fe)Si** Tatsuo Goko, Carlos J. Arguello, Andreas Hamann, Thomas Wolf, Minhyea Lee, Dmitry Reznik, Alexander Maisuradze, Rustem Khasanov, Elvezio Morenzoni and Yasutomo J. Uemura, *npj Quantum Materials* (2017) 2:44; doi:10.1038/s41535-017-0049-0
6. **Novel Electron-Phonon Relaxation Pathway in Graphite Revealed by Time-Resolved Raman Scattering and Angle-Resolved Photoemission Spectroscopy**, Jih-An Yang, S. Parham, D. Dessau, and D. Reznik *Scientific Reports* **7**, 40876 (2017).
7. **Absence of magnetic field dependence of the anomalous bond-stretching phonon in $\text{YBa}_2\text{Cu}_3\text{O}_{6.6}$** , D. Reznik, D. Parshall, S.-R. Park, J.W. Lynn, T. Wolf, *Journal of Superconductivity and Novel Magnetism*, 1-2. (2016).
8. **Polaronic metal phases in $\text{La}_{0.7}\text{Sr}_{0.3}\text{MnO}_3$ uncovered by inelastic neutron and x-ray scattering**, M. Maschek, D. Lamago, J.P. Castellán, A. Bosak, D. Reznik, F. Weber, *Physical Review B* **93** (4), 045112 (2016).
9. **High-energy electronic excitations in Sr_2IrO_4 observed by Raman scattering**, Jih-An Yang, Yi-Ping Huang, Michael Hermele, Tongfei Qi, Gang Cao, Dmitry Reznik, *Phys. Rev. B* **91**, 195140 (2015).
10. **Close correlation between magnetic properties and the soft phonon mode of the structural transition in BaFe_2As_2 and SrFe_2As_2** , D. Parshall, L. Pintschovius, D. Lamago, J.-P. Castellán, J. L. Niedziela, Th. Wolf, D. Reznik *Phys. Rev. B* **91**, 134426 (2015).
11. **Fluctuating defects in the incipient relaxor $\text{K}_{1-x}\text{Li}_x\text{TaO}_3$ ($x=0.02$)**, C. Stock, P. M. Gehring, G. Xu, D. Lamago, D. Reznik, M. Russina, J. Wen, and L. A. Boatner, *Phys. Rev. B* **90**, 224302 (2014).
12. **Spurious peaks arising from multiple scattering events involving the sample environment in inelastic neutron scattering**, L. Pintschovius, D. Reznik, F. Weber, P. Bourges, D. Parshall, R. Mittal, Samrath Lal Chaplot, R. Heid, T. Wolf, D. Lamago, J.W. Lynn, *Applied Crystallography*, **47** 1472 (2014).
13. **Direct observation of dynamic charge stripes in $\text{La}_{1.67}\text{Sr}_{0.33}\text{NiO}_4$** , S. Anissimova, D. Parshall, G. D. Gu, K. Marty, M. D. Lumsden, Songxue Chi, J. A. Fernandez-Baca, D. L. Abernathy, D. Lamago, J. M. Tranquada, *D. Reznik, Nature Communications* **5**, 3467 (2014).
14. **Phonons and electron-phonon coupling in $\text{YNi}_2\text{B}_2\text{C}$** , F. Weber, L. Pintschovius, W. Reichardt, R. Heid, K.-P. Bohnen, A. Kreyssig, D. Reznik, and K. Hradil, *Phys. Rev. B* **89**, 104503 (2014)
15. **Phonon spectrum of SrFe_2As_2 determined using multizone phonon refinement**, D. Parshall, R. Heid, J. L. Niedziela, Th. Wolf, M. B. Stone, D. L. Abernathy, and D. Reznik, *Phys. Rev. B* **89**, 064310 (2014).
16. **Evidence for a charge collective mode associated with superconductivity in copper oxides from neutron and x-ray scattering measurements of $\text{La}_{2-x}\text{Sr}_x\text{CuO}_4$** , S. R. Park, T. Fukuda, A.

- Hamann, D. Lamago, L. Pintschovius, M. Fujita, K. Yamada, and D. Reznik, *Phys. Rev. B Rapid Communications*. **89**, 020506 (2014).
17. **Large lattice distortions associated with the magnetic transition in $\text{La}_{0.7}\text{Sr}_{0.3}\text{MnO}_3$** , F. Weber, D. N. Argyriou, O. Prokhnenko, and D. Reznik, *Phys. Rev. B Rapid Communications* **88**, 241106 (2013). DOI: 10.1103/PhysRevB.88.241106, <http://link.aps.org/doi/10.1103/PhysRevB.88.241106>
 18. **Broken relationship between superconducting pairing interaction and electronic dispersion kinks in $\text{La}_{2-x}\text{Sr}_x\text{CuO}_4$ measured by angle-resolved photoemission**, S. R. Park, Y. Cao, Q. Wang, M. Fujita, K. Yamada, S.-K. Mo, D. S. Dessau, and D. Reznik, *Phys. Rev. B Rapid Communications* **88**, 220503 (2013) DOI:10.1103/PhysRevB.88.220503
 19. **Optical phonons and the soft mode in 2H-NbSe_2** , F. Weber, R. Hott, R. Heid, K.-P. Bohnen, S. Rosenkranz, J.-P. Castellán, R. Osborn, A. H. Said, B. M. Leu, and D. Reznik, *Phys. Rev. B* **87**, 245111 (2013).
 20. **Phonon anomalies and dynamic stripes**, D. Reznik, Invited review article *Physica C* **481**, 75 (2012).
 21. **Competition between commensurate and incommensurate magnetic ordering in Fe_{1+y}Te** , D. Parshall, G. Chen, L. Pintschovius, D. Lamago, Th. Wolf, L. Radzihovsky, and D. Reznik, *Phys. Rev. B* **85**, 140515 (2012).
 22. **Phonon response to charge and orbital order in $\text{LaSr}_2\text{Mn}_2\text{O}_7$** , F. Weber, S. Rosenkranz, J.-P. Castellán, R. Osborn, D. Reznik, H. Zheng, J. F. Mitchell, Y. Chen, Song, J. Lynn, *Phys. Rev. Lett.* **107**, 207202 (2011).
 23. **Effects of charge inhomogeneities on elementary excitations in $\text{La}_{2-x}\text{Sr}_x\text{CuO}_4$** , S. R. Park, A. Hamann, L. Pintschovius, D. Lamago, G. Khaliullin, M. Fujita, K. Yamada, G. D. Gu, J. M. Tranquada, D. Reznik, *Phys. Rev. B*, **84**, 214516 (2011)
 24. **Unusual electron-phonon interaction of the buckling mode in $\text{YBa}_2\text{Cu}_3\text{O}_7$** , M. Raichle, D. Reznik, M. Bakr, C. Ulrich, V. Hinkov, K. Hradil, D. Lamago, M. Bröll, C.T. Lin, and B. Keimer, *Phys. Rev. Lett.* **107**, 177004 (2011).
 25. **Extended phonon collapse and the origin of the charge-density-wave in NbSe_2** , F. Weber, S. Rosenkranz, J.-P. Castellán, R. Osborn, R. Hott, R. Heid, K.-P. Bohnen, T. Egami, A. Said, and D. Reznik, *Phys. Rev. Lett.*, **107**, 107403 (2011).
 26. **Search for an Influence of Superconductivity on the Phonons in $\text{Ba}(\text{Fe}_{1-x}\text{Co}_x)_2\text{As}_2$** , D. Lamago, L. Pintschovius, D. Reznik, R. Heid, T. Wolf, R. Mittal, S.L. Chaplot, *Physica C*, doi:10.1016/j.physc.2011.08.004 (2011).
 27. **Temperature dependence of low-energy phonons in magnetic non-superconducting $\text{TbNi}_2\text{B}_2\text{C}$** , S. Anissimova, A. Kreyssig, O. Stockert, M. Loewenhaupt, and D. Reznik, *Phys. Rev. B*, 104509 (2011).
 28. **Magnetic blue phase in an itinerant magnet MnSi** , A. Hamann, D. Lamago, Th. Wolf, H. von Löhneysen, D. Reznik, *Phys. Rev. Lett.*, **107**, 037207 (2011).
 29. **Measurement of strong phonon softening in Cr with and without Fermi-surface nesting by inelastic x-ray scattering**, D. Lamago, M. Hoesch, M. Krisch, R. Heid, K.-P. Bohnen, P. Böni, and D. Reznik, *Phys. Rev. B* **82**, 195121 (2010).
 30. **Pressure dependence of phonon modes across the tetragonal to collapsed tetragonal phase transition in CaFe_2As_2** , R. Mittal, R. Heid, A. Bosak, T. R. Forrest, S. L. Chaplot, D. Lamago, D. Reznik, K. P. Bohnen, Y. Su, N. Kumar, S. K. Dhar, A. Thamizhavel, Ch. Ruegg, M. Krisch, D. F. McMorrow, Th. Brueckel, and L. Pintschovius, *Phys. Rev. B* **81**, 144502 (2010).
 31. **Giant electron-phonon anomaly in doped La_2CuO_4 and other cuprates**, D. Reznik, arXiv:0909.0769, *Advances in Condensed Matter Physics*, vol. 2010, Article ID 523549, 24 pages, 2010. doi:10.1155/2010/523549

32. **Phonons in doped and undoped BaFe₂As₂ investigated by inelastic x-ray scattering**, D. Reznik, K. Lokshin, D. C. Mitchell, D. Parshall, W. Dmowski, D. Lamago, R. Heid, K.-P. Bohnen, A. S. Sefat, M. A. McGuire, B. C. Sales, D. G. Mandrus, A. Subedi, D. J. Singh, A. Alatas, M. H. Upton, A. H. Said, A. Cunsolo, Yu. Shvyd'ko, and T. Egami, *Phys. Rev. B* **80**, 214534 (2009).
33. **Signature of checkerboard fluctuations in the phonon spectra of a possible polaronic metal La_{1.2}Sr_{1.8}Mn₂O₇**, F. Weber, N. Aliouane, H. Zheng, J.F. Mitchell, D.N. Argyriou, and D. Reznik, *Nature Materials*, **8**, 798 - 802 (2009).
34. **Measurement of anomalous phonon dispersion of CaFe₂As₂ single crystals using inelastic neutron scattering**, R. Mittal, L. Pintschovius, D. Lamago, R. Heid, K-P. Bohnen, D. Reznik, S. L. Chaplot, Y. Su, N. Kumar, S. K. Dhar, A. Thamizhavel, and Th. Brueckel, *Phys. Rev. Lett.* **102**, 217001 (2009).
35. **Superconductivity coexisting with phase-separated static magnetic order in (Ba,K)Fe₂As₂, (Sr,Na)Fe₂As₂ and CaFe₂As₂**, T. Goko, A.A. Aczel, E. Baggio-Saitovitch, S.L. Budko, P.C. Canfield, J.P. Carlo, G.F. Chen, Pengcheng Dai, A.C. Hamann, W.Z. Hu, H. Kageyama, G.M. Luke, J.L. Luo, B. Nachumi, N. Ni, D. Reznik, D.R. Sanchez-Candela, A.T. Savici, K.J. Sikes, N.L. Wang, C.R. Wiebe, T.J. Williams, T. Yamamoto, W. Yu, and Y. J. Uemura, *Phys. Rev. B* **80**, 024508 (2009).
36. **C-axis phonons in Fe-As based superconductors investigated by inelastic x-ray scattering**, D. Reznik, K. Lokshin, D. C. Mitchell, D. Parshall, W. Dmowski, D. Lamago, R. Heid, K.-P. Bohnen, A. S. Sefat, M. A. McGuire, B. C. Sales, D. G. Mandrus, A. Subedi, D. J. Singh, A. Alatas, M. H. Upton, A. H. Said, Yu. Shvyd'ko, T. Egami, arXiv:0810.494 (2008).
37. **Direct observation of the superconducting gap in phonon spectra**, F. Weber, A. Kreyssig, L. Pintschovius, R. Heid, W. Reichardt, D. Reznik, O. Stockert, and K. Hradil, *Phys. Rev. Lett.*, **101**, 237002 (2008).
38. **q-Dependence of the giant bond-stretching phonon anomaly in the stripe compound La_{1.48}Nd_{0.4}Sr_{0.12}CuO₄ measured by IXS**, D. Reznik, T. Fukuda, A. Baron, M. Fujita, and K. Yamada, *J. Phys. Chem. Solids*, **69**, 3103 (2008).
39. **Phonon linewidths in YNi₂B₂C**, L. Pintschovius, F. Weber, W. Reichardt, A. Kreyssig, R. Heid, D. Reznik, O. Stockert, K. Hradil, *Pramana J. of Phys.* **71**, 687 (2008).
40. **Photoemission kinks and phonons in cuprates**, D. Reznik, G. Sangiovanni, O. Gunnarsson, and T. P. Devereaux, *Nature*, **455**, E6 (2008).
41. **Short-range antiferromagnetism in an optimally-doped high T_c superconductor**, D. Reznik, J.-P. Ismer, I. Eremin, L. Pintschovius, M. Arai, Y. Endoh, T. Masui, and S. Tajima, *Phys. Rev. B* **78**, 132503 (2008).
42. **Temperature dependence of the bond-stretching phonon anomaly in YBa₂Cu₃O_{6.95}**, D. Reznik, L. Pintschovius, J. M. Tranquada, M. Arai, T. Masui, and S. Tajima, *Phys. Rev. B* **78**, 094507 (2008).
43. **Magnetic field and pressure dependence of small angle neutron scattering in MnSi**, C. Pfleiderer, D. Reznik, L. Pintschovius, and J. Huang, *Phys. Rev. Lett.*, **99**, 156406 (2007).
44. **Spin waves in the ferromagnetic metallic manganites La_{1-x}(Ca_{1-y}Sr_y)_xMnO₃**, F. Moussa, M. Hennion, P. Kober-Lehouelleur, D. Reznik, S. Petit, H. Moudden, A. Ivanov, Ya. M. Mukovskii, R. Privezentsev, and F. Albenque-Rullier, *Phys. Rev. B* **76**, 064403 (2007).
45. **Electron-phonon anomaly related to charge stripes: static stripe phase versus optimally-doped superconducting La_{1.85}Sr_{0.15}CuO₄**, D. Reznik, L. Pintschovius, M. Fujita, K. Yamada, G.D. Gu, and J.M. Tranquada, *J. Low Temp. Phys.* **147**, 353 (2007).
46. **Oxygen phonon branches in overdoped La_{1.7}Sr_{0.3}CuO₄**, L. Pintschovius, D. Reznik, and K. Yamada, *Phys. Rev. B*, **74**, 174514 (2006).

47. **Electron phonon coupling reflecting dynamic charge inhomogeneity in copper oxide superconductors**, D. Reznik, L. Pintschovius, M. Ito, S. Iikubo, M. Sato, H. Goka, M. Fujita, K. Yamada, G.D. Gu, and J.M. Tranquada, *Nature* **440** 1170 (2006).
48. **Quasiparticle-like peaks, kinks, and electron-phonon coupling at the $(\pi,0)$ Regions in the CMR Oxide $\text{La}_{2-2x}\text{Sr}_{1+2x}\text{Mn}_2\text{O}_7$** , Z. Sun, Y. -D. Chuang, A. V. Fedorov, J. F. Douglas, D. Reznik, F. Weber, N. Aliouane, D. N. Argyriou, H. Zheng, J. F. Mitchell, T. Kimura, Y. Tokura, A. Revcolevschi, and D. S. Dessau, *Phys. Rev. Lett.* **97**, 056401 (2006).
49. **Spin gap in optimally-doped YBCO**, D. Reznik, L. Pintschovius, Y. Endoh, P. Bourges, Y. Sidis, T. Masui, S. Tajima, *J. Phys. Chem. Solids*, **67**, 509 (2006).
50. **Chirality of magnetic-field aligned helical order in MnSi at high pressure**, C. Pfleiderer, D. Reznik, L. Pintschovius, and H. V. Löhneysen, *Physica B* **359**, 1159 (2005).
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