
Songxue Chi

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Education and Training

University of Tennessee, Knoxville, U.S.A.

Ph. D. in Physics

December 2008

Thesis: “*Structural and magnetic properties of manganites $Pr_{1-x}Ca_{1+x}MnO_4$, oxyphnictides $CeFeAsO_{1-x}F_x$ and filled skutterudite $PrOs_4As_{12}$* ”

Pukyong National University, R. Korea

M.S. in Physics

August 2001

Thesis: “*I-V characteristics of pulsed laser Ablated $SrBi_2Ta_2O_9$ Thin Films*”

Yanbian University, P. R. China

B.S. in Physics

July 1993

Professional Experience

01/2013 – present **Oak Ridge National Laboratory, USA**

R&D staff

11/2010 – 01/2013 **Oak Ridge Associated Universities, USA**

Post doctoral associate, working at the Oak Ridge National Laboratory

01/2009 – 11/2010 **NIST Center for Neutron Research, USA**

Instrument scientist

Yanbian University, P.R.China

09/2001 – 07/2003 *Lecturer*

01/1999 – 08/1999 *Lecturer*

07/1993 – 08/1996 *Lecturer*

Swaneng Hill School, Botswana

09/1996 – 12/1998 *Teacher*

Awards

Chancellor's Honor for Extraordinary Professional Promise

The University of Tennessee, Knoxville , April, 2008

JINS Neutron Fellowship

The University of Tennessee, Knoxville, Feb, 2008

Sigma Pi Sigma, the Physics National Honor Society membership

The University of Tennessee, Knoxville, May, 2006

Skills

- **Experimental:** Triple-axis and 4-circle spectrometer neutron scattering measurements; time-of-flight neutron scattering measurements; X-ray and synchrotron diffraction; single crystal growth with floating zone method; transport measurements; synthesis and characterization of thin films with Pulsed Laser Deposition method.
- **Programming:** Proficient with Matlab, Python and IDL programming languages. Have extensive experience with FORTRAN, C/C++, and Python programming languages. Proficient using Unix/Linux. Experience using VAX/VMS, DOS/Windows and MacOS operation system.
- **Languages:** Native proficiency with Chinese (Mandarin), full professional proficiency with English, and limited working proficiency with Korean

Publications

Published: **119**

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Web of Science ResearcherID: <https://www.webofscience.com/wos/author/record/A-6713-2013>

Web of Science Core Collection Metrics as of 07/10/2023: H-index: 33, sum of Citations: 3820

1. **Gapless spin-excitations in the superconducting state of a quasi-one-dimensional spin-triplet superconductor** Keith M. Taddei,, Bing-Hua Lei, Michael A. Susner, Hui-Fei Zhai, Thomas J. Bullard, Liurukara D. Sanjeewa, Qiang Zheng, Athena S. Sefat, Songxue Chi, Clarina dela Cruz, David J. Singh,, and Bing Lv *Physical Review B*, **107**, L180504 (2023).
2. **Strongly over-doped $\text{La}_{2-x}\text{Sr}_x\text{CuO}_4$: Evidence for Josephson-coupled grains of strongly-correlated superconductor** Yangmu Li, A. Sapkota, P. M. Lozano, Zengyi Du, Zebin Wu, Asish Kundu, B. L. Winn, Songxue Chi, M. Matsuda, M. Frontzek, I. Bo_zovi_c, Abhay N. Pasupathy, Ilya K. Drozdov, Kazuhiro Fujita, G. D. Gu, I. A. Zaliznyak, Qiang Li, and J. M. Tranquada *Physical Review B*, **106**, 224515 (2022).
3. **Antiferromagnetic fluctuations and orbital-selective Mott transition in the van der Waals ferromagnet $\text{Fe}_{3-x}\text{GeTe}_2$** Xiaojian Bai, Frank Lechermann, Yaohua Liu, Yongqiang Cheng, Alexander I. Kolesnikov, Feng Ye, Travis J. Williams, Songxue Chi, Garrett E. Granroth, Andrew F. May, and Stuart Calder *Physical Review B* **106**, L180409 (2022)

4. **Unconventional short-range structural fluctuations in cuprate superconductors** D. Pelc, R. J. Spieker, Z. W. Anderson, M. J. Krogstad, N. Brinkos, N. G. Lielinski, B. Yu, T. Sasagawa, L. Chauviere, P. Dosanjh, R. Liang, D. A. Bonn, A. Damascelli, S. Chi, Y. Liu, R. Osborn, and M. Greven *Scientific Reports* **12**, 20483 (2022)
5. **Magnetic excitation linking quasi-one-dimensional Chevrel-type selenide and arsenide superconductors** Logan M. Whitt, Tyra C. Douglas, Songxue Chi, Keith M. Taddei, Jared M. Allred *Physical Review Materials* **6**, 124804 (2022)
6. **Incommensurate magnetic orders and possible field-induced skyrmion state in the square-net centrosymmetric EuGa_2Al_2 system** Jaime M. Moya, Shiming Lei, Eleanor M. Clements, Kevin Allen, Qizhi Li, Y.Y.Peng, Matthew James Krogstad, Raymond Osborn, Douglas S. Robinson, Stella Sun, P. Abbamonte, Songxue Chi, Anand B. Puthirath, Jeffrey W. Lynn, and E. Morosan *Phys. Rev. Mater.* **6**, 074201 (2022)
7. **Generic character of charge and spin density waves in superconducting cuprates** Sangjun Lee Edwin W. Huang, Thomas A. Johnson, Xuefei Guo, Ali A. Husain, Matteo Mitrano, Kannan Lu, Alexander V. Zakrzewski, Gilberto A. de la Pena, Yingying Peng, Hai Huang, Sang-Jun Lee, H. Jang, Jun-Sik Lee, Young Il Joe, William B. Doriese, Paul Szypryt, Daniel Swetz, Songxue Chi, Adam A Aczel, Gregory J. MacDougall, Steven A. Kivelson, Eduardo Fradkin, P. Abbamonte *PNAS* **119**, e2119429119 (2022)
8. **Parallel Spin Stripes and Their Coexistence with Superconductivity at Optimal and High Doping in $\text{La}_{1.6-x}\text{Nd}_{0.4}\text{Sr}_x\text{CuO}_4$** Qianli Ma, Kirrily C. Rule, Zachary W. Cronkwright, Mirela Dragomir, Gabrielle Mitchell, Evan M. Smith, Songxue Chi, Alexander I. Kolesnikov, Matthew B. Stone, and Bruce D. Gaulin *Phys. Rev. Research* **3**, 023151 (2021)
9. **Growth and characterization of large $(\text{Y},\text{La})\text{TiO}_3$ and $(\text{Y},\text{Ca})\text{TiO}_3$ single crystals** S. Hameed, J. Joe, L. R. Thoutam, J. Garcia-Barriocanal, B. Yu, G. Yu, S. Chi, T. Hong, T. J. Williams, J. W. Freeland, P. M. Gehring, Z. Xu, M. Matsuda, B. Jalan, and M. Greven *Physical Review Materials* **5**, 125003 (2021)
10. **Magnetic order and its interplay with structure phase transition in the van der Waals ferromagnet Vl_3** Yiqing Hao, Yiqing Gu, Yimeng Gu, Erxi Feng, Huibo Cao, Songxue Chi, Hua Wu and Jun Zhao *Chin. Phys. Lett.* **38**, 096101 (2021)
11. **Canted antiferromagnetic order and spin dynamics in the honeycomb-lattice compound $\text{Tb}_2\text{Ir}_3\text{Ga}_9$** Feng Ye, Zachary Morgan, Wei Tian, Songxue Chi, Xiaoping Wang, Michael E. Manley, David Parker, Mojmammal A. Khan, J. F. Mitchell, and Randy Fishman *Physical Review B*, **103**, 18, 184413 (2021).
12. **Field-induced topological Hall effect and double-fan spin structure with a c-axis component in the metallic kagome antiferromagnetic compound YMn_6Sn_6** Qi Wang, Kelly J. Neubauer, Chunruo Duan, Qiangwei Yin, Satoru Fujitsu, Hideo Hosono, Feng Ye, Rui Zhang, Songxue Chi, Kathryn Krycka, Hechang Lei, and Pengcheng Dai *Phys. Rev. B* **103**, 014416 (2021)
13. **Quantized thermoelectric Hall effect induces giant power factor in a topological semimetal** Fei Han, Nina Andrejevic, Thanh Nguyen, Brian Skinner, Quynh Nguyen, Zhiwei Ding, Ricardo Pablo-Pedro, Shreya Parjan, Vladyslav Kozii, Ahmet Alatas, Ercan Alp, Songxue Chi, Jaime Fernandez-Baca, Shengxi Huang, Liang Fu, Mingda Li *Nature Communications*, **11**, 6167 (2020).
14. **Noncollinear magnetic structure and magnetoelectric coupling in buckled honeycomb $\text{Co}_4\text{Nb}_2\text{O}_9$: A single crystal neutron diffraction study** Lei Ding, Minseong Lee, Tao Hong, Zhiling Dun, Ryan Sinclair, Songxue Chi, Harish K. Agrawal, Eun Sang Choi, Bryan C. Chakoumakos, Haidong Zhou and Huibo Cao *Phys. Rev. B* **102**, 174443 (2020)

15. **Competition of three-dimensional magnetic phases in $\text{Ca}_2\text{Ru}_{1-x}\text{Fe}_x\text{O}_4$: A structural perspective**
Songxue Chi, Feng Ye, Gang Cao, Huibo Cao, and Jaime A. Fernandez-Baca *Phys. Rev. B* **102**, 014452 (2020)
16. **Extended anharmonic collapse of phonon dispersions in SnS** T. Lanigan-Atkins, S. Yang, J. L. Niedziela, D. Bansal, A. F. May, A. A. Purezky, J. Y. Y. Lin, D. M. Pajerowski, T. Hong, S. Chi, G. Ehlers, and O. Delaire *Nature Communications* **11**, 4430 (2020)
17. **High-temperature short-range order in Mn_3RhSi** Hiroki Yamauchi, Dita Puspita Sari, Isao Watanabe, Yukio Yasui, Lieh-Jeng Chang^e, Keietsu Kondō, Takashi U. Ito, Motoyuki Ishikado, Masato Hagihara, Matthias D. Frontzek, Songxue Chi, Jaime A. Fernandez-Baca, James Lord, Adam Berlie, Chris Goodway, Atsuhiko Kotani, Shigeo Mori, Shin-ichi Shamoto *Commun Mater* **1**, 43 (2020)
18. **Giant isotope effect on phonon dispersion and thermal conductivity in methylammonium lead iodide**
M. E. Manley, K. Hong, P. Yin, S. Chi, Y. Cai, L. L. Daemen, R. P. Hermann, H. Wang, A. May, M. Asta, M. Ahmadi *Science Advances*, **6**, 31, eaaz1842 (2020)
19. **Topological singularity-induced chiral Kohn anomaly in a Weyl semimetal** Thanh Nguyen, Fei Han, Nina Andrejevic, Ricardo Pablo-Pedro, Anuj Apte, Zhiwei Ding, Kunyan Zhang, Ahmet Alatas, Ercan Alp, Songxue Chi, Jaime Fernandez-Baca, Masaaki Matsuda, David A. Tennant, Yang Zhao, Zhijun Xu, Jeffrey W. Lynn, Shengxi Huang, and Mingda Li *Phys. Rev. Lett.* **124**, 236401 (2020)
20. **Anisotropic effect of a magnetic field on the neutron spin resonance in FeSe** Tong Chen, Youzhe Chen David W. Tam Bin Gao Yiming Qiu Astrid Schneidewind Igor Radelytskyi, Karel Prokes, Songxue Chi, Masaaki Matsuda, Collin Broholm, and Pengcheng Dai *Phys. Rev. B* **101**, 140504 (R) (2020)
21. **Magnetic anisotropy in ferromagnetic CrI_3** Lebing Chen, Jae-Ho Chung, Tong Chen, Chunruo Duan, Astrid Schneidewind, Igor Radelytskyi, David J. Voneshen, Russel A. Ewings, Matthew B. Stone, Alexander I. Kolesnikov, Barry Winn, Songxue Chi, R. A. Mole, D.H.Hu, Bin Gao, and Pengcheng Dai *Phys. Rev. B* **101** 134418 (2020)
22. **Coexistence of Soft Modes and Dynamic Ti Disorder in Cubic BaTiO_3 Studied by Inelastic Neutron Scattering** Izumi Tomeno, Jaime Fernandez-Baca, Songxue Chi, Kunihiko Oka, and Yorihiro Tsunoda, *Journal of the Physical Society of Japan* **89**, 054601 (2020)
23. **The f -electron State of the Heavy Fermion Superconductor NpPd_5Al_2 and the Isostructural Family**
Naoto Metoki, Adam A. Aczel, Dai Aoki, Songxue Chi, Jaime A. Fernandez-Baca, Jean-Christophe Griveau, Masato Hagihara, Tao Hong, Yoshinori Haga, Kazuhiko Ikeuchi, Y. Inamura, Kazuya Kamazawa, Ryoichi Kajimoto, Hideaki Kitazawa, Takatsugu Masuda, Masaaki Matsuda, Mitsutaka Nakamura, Junya Ohtsuki, Daniel Pajerowski, Hiroyuki S. Suzuki, Etsuji Yamamoto, and Hiroki Yamauchi *JPS Conf. Proc.* **30**, 011123 (2020)
24. **Anharmonic Eigenvectors and Acoustic Phonon Disappearance in Quantum Paraelectric SrTiO_3** Xing He, Dipanshu Bansal, Barry Winn, Songxue Chi, Lynn Boatner, and Olivier Delaire *Phys. Rev. Lett.* **124**, 145901 (2020)
25. **Lattice distortion in the spin-orbital entangled state in RVO_3 perovskites** J. -Q. Yan, W. Tian, H. B. Cao, S. Chi, F. Ye, A. Llobet, Q. Chen, J. Ma, Y. Ren, J. -G. Cheng, J. -S. Zhou, M. A. McGuire, R. J. McQueeney *Phys. Rev. B* **100**, 184423 (2019)
26. **Flat band magnetism and helical magnetic order in Ni-doped SrCo_2As_2** Yu Li, Zhonghao Liu, Zhuang Xu, Yu Song, Yaobo Huang, Dawei Shen, Ni Ma, Ang Li, Songxue Chi, Matthias Frontzek, Huibo Cao, Qingzhen Huang, Weiyi Wang, Yaofeng Xie, Yan Rong, David P. Young, J. F. DiTusa, and Pengcheng Dai *Phys. Rev. B* **100**, 094446 (2019)
27. **Spin-liquid-like state in pure and Mn-doped TbInO_3 with a nearly triangular lattice** M. G. Kim, B. Winn, S. Chi, A. T. Savici, J. A. Rodriguez-Rivera, W. C. Chen, X. Xu, Y. Li, J. W. Kim, S.-W. Cheong, and V. Kiryukhin *Phys. Rev. B* **100**, 024405 (2019)
28. **Low-temperature anharmonicity and the thermal conductivity of cesium iodide** Bin Wei, Chao Yang, Xiaoxia Yu, Xin Rao, Xueyun Wang, Songxue Chi, Xuefeng Sun, Jiawang Hong *Phys. Rev. B* **99**, 184301 (2019)

29. **Anomalous magnetic behavior of Ba_2CoO_4 with isolated CoO_4 tetrahedra** Qiang Zhang, Guixin Cao, Feng Ye, Huibo Cao, Masaaki Matsuda, D. A. Tennant, Songxue Chi, S. E. Nagler, W. A. Shelton, Rongying Jin, E. W. Plummer, Jiandi Zhang *Phys. Rev. B* **99**, 094416 (2019)
30. **Neutron spin resonance as a probe of Fermi surface nesting and superconducting gap symmetry in $\text{Ba}_{0.67}\text{K}_{0.33}(\text{Fe}_{1-x}\text{Co}_x)_2\text{As}_2$** Rui Zhang, Weiyi Wang, Thomas A. Maier, Meng Wang, Matthew B. Stone, Songxue Chi, Barry Winn, and Pengcheng Dai *Phys. Rev. B* **98**, 060502 (R) (2018)
31. **Local orthorhombic lattice distortions in the paramagnetic tetragonal phase of superconducting $\text{NaFe}_{1-x}\text{Ni}_x\text{As}$** Weiyi Wang, Yu Song, Chongde Cao, Yu Li, L. W. Harriger, Wei Tian, Songxue Chi, Rong Yu, Andriy H. Nevidomskyy, and Pengcheng Dai *Nature Communications* **9**, 3128 (2018)
32. **The f -electron states in PrPd_5Al_2** Naoto Metoki, Hiroki Yamauchi, Hiroyuki S. Suzuki, Hideaki Kitazawa, Masato Hagihara, Takatsugu Masuda, Adam Aczel, Songxue Chi, Tao Hong, Masaaki Matsuda, Daniel Pajerowski, and Jaime A. Fernandez-Baca *Journal of the Physical Society of Japan*, **87**, 094704 (2018)
33. **Coexistence of superconductivity and short-range double-stripe spin correlations in Te-vapor annealed $\text{FeTe}_{1-x}\text{Se}_x$ with $x=0.2$** Zhijun Xu, J. A. Schneeloch, Ming Yi, Yang Zhao, Masaaki Matsuda, D. M. Pajerowski, Songxue Chi, R. J. Birgeneau, Genda Gu, J. M. Tranquada, and Guangyong Xu *Phys. Rev. B* **97**, 214511 (2018)
34. **Glassy phonon heralds a strain glass state in a shape memory alloy** P.J. Stonaha, M.E. Manley, I. Karaman, R. Arroyave, N. Bruno, M. Chisholm, S. Chi, D. Abernathy *Phys. Rev. Lett.* **120**, 245701 (2018)
35. **Dynamic spin-lattice coupling and nematic fluctuations in NaFeAs** Yu Li, Zahra Yamani, Yu Song, Weiyi Wang, Chenglin Zhang, David W. Tam, Tong Chen, Zhuang Xu, Songxue Chi, Ke Xia, Li Zhang, Shifeng Cui, Wenan Guo, Ziming Fang, Yi Liu, and Pengcheng Dai *Phys. Rev. X* **8**, 021056 (2018)
36. **Supersonic propagation of lattice energy by phasons in fersnoite** M. E. Manley, P. J. Stonaha, D. L. Abernathy, Songxue Chi, R. Sahul, R. P. Hermann, J. D. Budai *Nature Communications*, **9**, 1823 (2018)
37. **Momentum-resolved observations of the phonon instability driving geometric improper ferroelectricity in yttrium manganite** Dipanshu Bansal, Jennifer L. Niedziela, V. Ovidiu Garlea, Douglas L. Abernathy, Songxue Chi, Yang Ren, Haidong Zhou, and Olivier Delaire *Nature Communications*, **9**, 1, 15 (2018)
38. **Suppression of the antiferromagnetic order when approaching the superconducting state in a phase-separated crystal of $\text{K}_x\text{Fe}_{2-y}\text{Se}_2$** Shichao Li, Yuan Gan, Jinghui Wang, Ruidan Zhong, J. A. Schneeloch, Zhijun Xu, Wei Tian, M. B. Stone, Songxue Chi, M. Matsuda, Y. Sidis, Ph. Bourges, Qiang Li, Genda Gu, J. M. Tranquada, Guangyong Xu, R. J. Birgeneau, and Jinsheng Wen *Phys. Rev. B* **96**, 094503 (2017)
39. **Manganese-induced magnetic symmetry breaking and its correlation with the metal-insulator transition in bilayered $\text{Sr}_3(\text{Ru}_{1-x}\text{Mn}_x)_2\text{O}_7$** Qiang Zhang, Feng Ye, Wei Tian, Huibo Cao, Songxue Chi, Dalgis Mesa, Biao Hu, Zhenyu Diao, David A. Tennant, Rongying Jin, Ward Plummer, Jiandi Zhang *Phys. Rev. B* **95**, 220403(R) (2017)
40. **Competing spin density wave, collinear, and helical magnetism in Fe_{1+x}Te** C. Stock, E. E. Rodriguez, P. Bourges, R. A. Ewings, H. Cao, S. Chi, J. A. Rodriguez-Rivera, and M. A. Green *Phys. Rev. B* **95**, 144407 (2017)
41. **Magnetic Structure and Quadrupolar Order Parameter Driven by Geometrical Frustration Effect in NdB_4** Hiroki Yamauchi, Naoto Metoki, Ryuta Watanuki, Kazuya Suzuki, Hiroshi Fukazawa, Songxue Chi, and Jaime A. Fernandez-Baca, *J. Phys. Soc. Jpn* **86**, 044705 (2017)
42. **Itinerant Antiferromagnetism in RuO_3** Berlijn, P. C. Snijders, O. Delaire, H.-D. Zhou, T. A. Maier, H.-B. Cao, S. Chi, M. Matsuda, Y. Wang, M. R. Koehler, P. R. C. Kent, and H. H. Weitering *Phys. Rev. Lett.* **118**, 077201 (2017)
43. **Phonon-mediated spin-flipping mechanism in the spin ices $\text{Dy}_2\text{Ti}_2\text{O}_7$ and $\text{Ho}_2\text{Ti}_2\text{O}_7$** M. Ruminy, S. Chi, S. Calder, and T. Fennell *Phys. Rev. B* **95**, 060414(R) (2017)
44. **Phase diagram and neutron spin resonance of superconducting $\text{NaFe}_{1-x}\text{Cu}_x\text{As}$** Guotai Tan, Yu Song, Rui Zhang, Lifang Lin, Zhuang Xu, Long Tian, Songxue Chi, Barry Winn, M. K. Graves-Brook, Shiliang Li, and Pengcheng Dai *Phys. Rev. B* **95**, 054501 (2017)
45. **A Mott insulator continuously connected to iron pnictide superconductors** Song Y., Yamani Z., Cao C., Li Y., Zhang C., Chen J.S., Huang Q.Z., Wu H., Tao J., Zhu Y., Tian W., Chi S.X., Cao H.B., Huang Y.B., Dantz M., Schmitt T., Yu R., Nevidomskyy A.H., Morosan E., Si Q., Dai P.C., *Nature Communications*, **7**, 13879 (2016)
46. **Magnetic precursor of the pressure-induced superconductivity in Fe-ladder compound** Songxue Chi, Yoshiya Uwatoko, Huibo Cao, Yasuyuki Hirata, Kazuki Hashizume, Takuya Aoyama, and Kenya Ohgushi *Phys. Rev. Lett.* **117**, 047003 (2016)

47. **Electron doping evolution of the neutron spin resonance in $\text{NaFe}_{1-x}\text{Co}_x\text{As}$** Chenglin Zhang, Weicheng Lv, Guotai Tan, Yu Song, Scott V. Carr, Songxue Chi, M. Matsuda, A. D. Christianson, J. A. Fernandez-Baca, L. W. Harriger, and Pengcheng Dai *Phys. Rev. B* **93**, 174522 (2016)
48. **Experimental elucidation of the origin of the 'double spin resonances' in $\text{Ba}(\text{Fe}_{1-x}\text{Co}_x)_2\text{As}_2$** Meng Wang, M. Yi, H. L. Sun, P. Valdivia, M. G. Kim, Z. J. Xu, T. Berlijn, A. D. Christianson, Songxue Chi, M. Hashimoto, D. H. Lu, X. D. Li, E. Bourret-Courchesne, Pengcheng Dai, D. H. Lee, T. A. Maier, R. J. Birgeneau *Phys. Rev. B* **93**, 205149 (2016)
49. **Transition from Sign-Reversed to Sign-Preserved Cooper-Pairing Symmetry in Sulfur-Doped Iron Selenide Superconductors** Qisi Wang, J. T. Park, Yu Feng, Yao Shen, Yiqing Hao, Bingying Pan, J. W. Lynn, A. Ivanov, Songxue Chi, M. Matsuda, Huibo Cao, R. J. Birgeneau, D. V. Efremov, and Jun Zhao *Phys. Rev. Lett.* **116**, 197004 (2016)
50. **Pressure effects on magnetic ground states in cobalt doped multiferroic $\text{Mn}_{1-x}\text{Co}_x\text{WO}_4$** Jinchen Wang, Feng Ye, Songxue Chi, Jaime A. Fernandez-Baca, Huibo Cao, Wei Tian, M. Gooch, K.-C. Liang, Yaqi Wang, Bernd Lorenz, and C. W. Chu *Phys. Rev. B* **93**, 155164 (2016)
51. **Pressure dependence of the magnetic ground states in MnP** M. Matsuda, F. Ye, S. E. Dissanayake, J.-G. Cheng, S. Chi, J. Ma, H. D. Zhou, J.-Q. Yan, S. Kasamatsu, O. Sugino, T. Kato, K. Matsubayashi, T. Okada, and Y. Uwatoko *Phys. Rev. B* **93**, 100405(R) (2016)
52. **Structure symmetry determination and magnetic evolution in $\text{Sr}_2\text{Ir}_{1-x}\text{Rh}_x\text{O}_4$** Feng Ye, Xiaoping Wang, Christina Hoffmann, Songxue Chi, Masaaki Matsuda, Bryan C. Chakoumakos, Jaime A. Fernandez-Baca, Jinchen Wang, and G. Cao *Phys. Rev. B* **92**, 201112 (R) (2015)
53. **Spin dynamics near a putative antiferromagnetic quantum critical point and its relation to high- T_c in Cu substituted BaFe_2As_2** M. G. Kim, P. N. Valdivia, M. Wang, G. S. Tucker, D. L. Abernathy, Songxue Chi, A. D. Christianson, A. A. Aczel, T. Hong, T. W. Heitmann, S. Ran, P. C. Canfield, E. D. Bourret-Courchesne, A. Kreyssig, D. H. Lee, A. I. Goldman, R. J. McQueeney, and R. J. Birgeneau *Phys. Rev. B* **92**, 214404 (2015)
54. **Anharmonic phonons from orbitally driven lattice instability in SnSe** Li C. W., Hong J., May A., Bansal D., Hong T., Chi S., Ehlers G., and Delaire O. *Nature Physics* **3492**, (2015).
55. **Vibrational entropy drives magnetic transition in metamagnetic shape memory alloy** P.J. Stonaha, M.E. Manley, N. Bruno, I. Karaman, D.L. Abernathy, S. Chi *Phys. Rev. B* **92** 140406 (2015)
56. **Structure of Water and Ice in Poly-N,N-Dimethylacrylamide Hydrogel** Yurina SEKINE, Tomoko IKEDA-FUKAZAWA, Hiroki YAMAUCHI, Songxue CHI, Jaime A. FREMANDEZ-BACA, and Hiroshi FUKAZAWA *JPS Conf. Proc.* **8**, 033009 (2015)
57. **Properties of Ferroelectric Ice** Hiroshi FUKAZAWA, Masashi ARAKAWA, Hiroki YAMAUCHI, Yurina SEKINE, Riki KOBAYASHI, Yoshiya UWATOKO, Songxue CHI, and Jaime A. FERNENDEZ-BACA *JPS Conf. Proc.* **8**, 033010 (2015)
58. **The effects of Co_3O_4 on the structure and unusual magnetism of LaCoO_3** A M Durand, T J Hamil, D P Belanger, S Chi, F Ye, J A Fernandez-Baca, Y Abdollahian and C H Booth *J. Phys.: Condens. Matter* **27** 126001 (2015)
59. **Temperature and composition phase diagram in the iron-based ladder compounds $\text{Ba}_{1-x}\text{Cs}_x\text{Fe}_2\text{Se}_3$** Takafumi Hawai, Yusuke Nambu, Kenya Ohgushi, Fei Du, Yasuyuki Hirata, Maxim Avdeev, Yoshiya Uwatoko, Yurina Sekine, Hiroshi Fukazawa, Jie Ma, Songxue Chi, Yutaka Ueda, Hideki Yoshizawa, and Taku J. Sato *Phys. Rev. B* **91**, 184416 (2015)
60. **The unusual magnetism of nanoparticle LaCoO_3** A.M. Durand, D. P. Belanger, T. J. Hamil, F. Ye, S. Chi, J. A. Fernandez-Baca, C. H. Booth, Y. Abdollahian, M. Bhat *J. Phys.: Condens. Matter* **27** 176003 (2015)
61. **Neutron-scattering measurements of the spin excitations in LaFeAsO and $\text{Ba}(\text{Fe}_{0.953}\text{Co}_{0.047})_2\text{As}_2$: Evidence for a sharp enhancement of spin fluctuations by nematic order** Qiang Zhang, Rafael M. Fernandes, Jagat Lamsal, Jiaqiang Yan, Songxue Chi, Daniel K. Pratt, Je-rey W. Lynn, R. W. McCallum, Paul C. Canfield, Thomas A. Lograsso, Alan Goldman, David Vaknin, and Robert J. McQueeney *Phys. Rev. Lett.* **114**, 057001 (2015)

62. **Neutron Diffraction of Ice in Hydrogels** Yurina Sekine, Tomoko Ikeda-Fukazawa, Mamoru Aizawa, Riki Kobayashi, Songxue Chi, Jaime Fernandez-Baca, Hiroki Yamauchi, Hiroshi Fukazawa *Journal of Physical Chemistry B* 118, 13453 (2014)
63. **High-pressure single-crystal neutron scattering study of magnetic and Fe vacancy orders in $(\text{Ti,Rb})_2\text{Fe}_4\text{Se}_5$ superconductor** Feng Ye, Wei Bao, Songxue Chi, Antonio M. dos Santos, Jamie J. Molaison, Minghu Fang, Hangdong Wang, Qianhui Mao Jincheng Wang, Juanjuan Liu, Jieming Sheng *Chin. Phys. Lett.* **31**, 127401 (2014)
64. **Neutron-scattering evidence for a periodically modulated superconducting phase in the underdoped cuprate $\text{La}_{1.905}\text{Ba}_{0.095}\text{CuO}_4$** Zhijun Xu, C. Stock, Songxue Chi, A. I. Kolesnikov, Guangyong Xu, Genda Gu, and J. M. Tranquada *Phys. Rev. Lett.* **113**, 177002 (2014)
65. **Magnetoelectric coupling tuned by competing anisotropies in $\text{Mn}_{1-x}\text{Ni}_x\text{TiO}_3$** Songxue Chi, Feng Ye, H. D. Zhou, E. S. Choi, J. Hwang, Huibo Cao, Jaime A. Fernandez-Baca *Phys. Rev. B* **90** 144429 (2014)
66. **Two spatially separated phases in semiconducting $\text{Rb}_{0.8}\text{Fe}_{1.5}\text{S}_2$** Meng Wang, Wei Tian, P. Valdivia, Songxue Chi, E. Bourret-Courchesne, Pengcheng Dai, and R. J. Birgeneau, *Phys. Rev. B* **90** 125148 (2014)
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81. **Powder Neutron Diffraction Study of HoCoGa_5** Riki Kobayashi, Koji Kaneko, Songxue Chi, Naoyuki Sanada, Ryuta Watanuki and Kazuya Suzuki *J. Korean Phys. Soc.* **63**, 337 (2013)
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85. **Single-bilayer E-type antiferromagnetism in Mn-substituted $\text{Sr}_3\text{Ru}_2\text{O}_7$: Neutron scattering study** Dalgis Mesa, Feng Ye, Songxue Chi, J. A. Fernandez-Baca, Biao Hu, R. Jin, E.W. Plummer, Jiandi Zhang *Phys. Rev. B* **85**, 180410 (R) (2012)
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97. **Local-moment magnetism in superconducting $\text{FeTe}_{0.35}\text{Se}_{0.65}$ as seen via inelastic neutron scattering** Zhijun Xu, Jinsheng Wen, Guangyong Xu, Songxue Chi, Wei Ku, Genda Gu, and J. M. Tranquada *Phys. Rev. B* **84**, 052506 (2011)
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108. **Effect of magnetic field on the spin resonance in $\text{FeTe}_{0.5}\text{Se}_{0.5}$ as seen via inelastic neutron scattering** Jinsheng Wen, Guangyong Xu, Zhijun Xu, Zhi Wei Lin, Qiang Li, Ying Chen, Songxue Chi, Genda Gu, J. M. Tranquada *Phys. Rev. B* **81**, 100513(R) (2010)
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115. **Effect of antiferromagnetic spin correlations on lattice distortion and charge ordering in $\text{Pr}_{0.5}\text{Ca}_{1.5}\text{MnO}_4$** Songxue Chi, F. Ye, Pengcheng Dai, J. A. Fernandez-Baca, Q. Huang, J. W. Lynn, E. W. Plummer, R. Mathieu, Y. Kaneko, and Y. Tokura *Proc. Natl. Acad. Sci. USA (PNAS)* **104**, 11796-11801 (2007).
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117. **Resonance in the electron doped high transition temperature superconductor $\text{Pr}_{0.88}\text{LaCe}_{0.12}\text{CuO}_4$** Stephen D. Wilson, Pengcheng Dai, Shiliang Li, Songxue Chi, H. J. Kang and J. W. Lynn *Nature* **442**, 59-62 (2006)
118. **Conduction Behavior of $\text{SrBi}_2\text{Ta}_2\text{O}_9$ Thin Film Grown by Pulsed Laser Deposition** Jin Soo Kim, Ill Won Kim, Chang Won Ahn, Tae Kwon Song, Sang Su Kim, Song Xue Chi, Jong Seong Bae and Jung Hyun Jeong, *Japanese Journal of Applied Physics*, **41**, 6785-6789 (2002)
119. **Ferroelectric Properties of $\text{La}_{0.75}\text{Bi}_{3.25}\text{Ti}_3\text{O}_{12}$ Ceramic and Thin Films Prepared by Pulsed Laser Deposition** Ill Won Kim, Sung Hoon Kim, Sung Lae Cho, Jong Seong Bae, Song Xue Chi, Jung Hyun Jeong and Jae Shin Lee, *Ferroelectrics*, **260**, 119-124 (2001)

Talks and Presentations

Invited talks:

1. Effect of antiferromagnetic spin correlations on lattice distortion and charge ordering in $\text{Pr}_{0.5}\text{Ca}_{1.5}\text{MnO}_4$

Invited seminar at the Dept. of Phys. of University of Tennessee (Oct. 2007)

2. Evolution of CE-phase in layered manganites

Seminar at NIST Center for Neutron Research (Aug. 2008)

3. Spin fluctuations in iron-based superconductors

Seminar at NIST Center for Neutron Research (June 2009)

4. Crystalline Electric Field (CEF) as a probe for AFM order and SC state of $\text{CeFeAsO}_{1-x}\text{F}_x$

Seminar at ORNL (June 2010)

5. Magnetic phase transitions of Ni-doped MnTiO_3

Seminar at ORNL (Dec. 2011)

6. Magnetic structure and spin dynamics of the intercalated iron selenide superconductors

Seminar at ORNL (Oct. 2013)

7. HB3 Backend Upgrade Plan

Seminar at ORNL (Oct. 2015)

8. HB3 Neutron Velocity Selector Project

Scientific Productivity Steering Committee Meeting (Sept. 2016)

9. Status of Triple-axis Spectrometers at HFIR

Quantum Materials Young Investigator Workshop (June 2018)

Conference Presentations

1. Current-Voltage Characteristic of Pulsed Laser Ablated $\text{SrBi}_2\text{Ta}_2\text{O}_3$ Thin Films

2001 Physical Society-Spring Meeting. (South Korea)

2. Structural and magnetic properties of single layered manganite $\text{Pr}_{0.5}\text{Ca}_{1.5}\text{MnO}_4$

2006 American Physical Society March Meeting

3. Magnetic structure and crystal field potential of $\text{PrOs}_4\text{As}_{12}$

2007 American Physical Society March Meeting

4. Phase separation in $\text{Pr}_{0.55}\text{Ca}_{1.45}\text{MnO}_4$ evidenced by magnetic excitations

2008 American Physical Society March Meeting

5. The crystal electric field as a probe for long range magnetic ordering and superconductivity in $\text{CeFeAsO}_{1-x}\text{F}_x$

2009 American Physical Society March Meeting

6. Evolution of the bulk properties, structure, magnetic order and superconductivity with Ni doping in $\text{CaFe}_{2-x}\text{Ni}_x\text{As}_2$

2010 American Physical Society March Meeting

7. Neutron study of spin fluctuations in iron chalcogenide

2011 American Physical Society March Meeting

8. Elastic neutron scattering study of $\text{BaMn}_{0.97}\text{Li}_{0.03}\text{O}_3$ single crystal

2011 American Crystallographic Association Meeting

9. Magnetic phase transitions in single crystalline $\text{Mn}_{1-x}\text{Ni}_x\text{TiO}_3$

2012 American Physical Society March Meeting

10. Effective J_1 - J_2 model for the spin wave in the superconducting $(\text{Ti,Rb})_2\text{Fe}_4\text{Se}_5$

2013 American Physical Society March Meeting

11. Magnetic order and negative thermal expansion in $\text{Ca}_2\text{Ru}_{1-x}\text{Fe}_x\text{O}_4$

2014 American Physical Society March Meeting

12. Neutron scattering studies on semiconducting $\text{Rb}_{0.8}\text{Fe}_{1.5}\text{S}$

2015 American Physical Society March Meeting

13. The pressure effects on the antiferromagnetic orders in iron-based ladder compounds BaFe_2S_3

2016 American Physical Society March Meeting

14. Magnetic precursor of the pressure-induced superconductivity in Fe-ladder compound

2017 American Physical Society March Meeting

15. The magnetic field effect on the two competing magnetic phases in $\text{Ca}_2\text{Ru}_{0.92}\text{Fe}_{0.08}\text{O}_4$

2018 American Physical Society March Meeting

16. Competition of three-dimensional magnetic phases in $\text{Ca}_2\text{Ru}_{1-x}\text{Fe}_x\text{O}_4$: A structural perspective

2021 American Physical Society March Meeting

Services

Chairing Sessions at Conferences

1. Session K6: Ruthenates

2016 American Physical Society March Meeting

2. Session A43: Spin Orbit Physics in Oxides I

2017 American Physical Society March Meeting

3. Session X11: Fe-based superconductivity - Neutron scattering and magnetism

2018 American Physical Society March Meeting

Workshops

August 2020 **Virtual Workshop on Neutrons and Complementary Techniques for Quantum Materials**

September 2022 **Virtual Workshop on Neutrons and Complementary Techniques for Quantum Materials**

Manuscript Reviews

Reviewed more than 70 manuscripts for 20 research journals such as **Nature Physics, Nature Communications, Physical Review Letters, Physical Review B** and **Journal of Physics:Condensed Matter**.

Editorial Roles:

Associate Editor for ***Frontiers in Electronic Materials***