Martin Mourigal

Dunn Family Professor, School of Physics, Georgia Institute of Technology

Professional Contact
School of Physics, 837 State Street, Atlanta, GA 30332, USA
Office: +1 (404) 385-5669; Mobile: +1 (404) 747-4969
Email: mourigal@gatech.edu

Laboratory
Howey Physics Building
Office: C202; Laboratory: S207
Web: mourigal.gatech.edu

Personal Information

Birth:	1984 in Limoges, France
Status:	Married + 2 children (born 2016, 2024)
Citizenship:	French, U.S. permanent resident
Residence:	Peachtree Hills, Atlanta, GA

Employment

2025-	Professor	School of Physics, Georgia Institute of Technology (GT), Atlanta, GA, USA *Dunn Family Professor (2025-)*
2020-2025	Associate Professor	School of Physics, Georgia Institute of Technology (GT), Atlanta, GA, USA *Elwood P. "Doc" Blanchard Early-Career Professor (2022-2025)*
2015-2020	Assistant Professor	School of Physics, Georgia Institute of Technology (GT), Atlanta, GA, USA
2011-2014	Postdoctoral Fellow	The Johns Hopkins University (JHU), Baltimore, MD, USA *Advisor:* Collin L. Broholm
2008-2011	Graduate Student	Institut Laue-Langevin (ILL), Grenoble, France *Advisor:* Mechthild Enderle
2008-2011	Graduate Student	École Polytechnique Fédérale de Lausanne (EPFL), Switzerland *Advisor:* Henrik M. Rønnow
2007-2008	Master Student	Commissariat à l'Énergie Atomique (CEA), Grenoble, France *Advisor:* Mike E. Zhitomirsky
2006	Summer Student	Commissariat à l'Énergie Atomique (CEA), Moronvilliers, France *Advisors:* B. Etchessahar and C. Vermare

Education

2006-2011 École Polytechnique Fédérale de Lausanne (EPFL), Switzerland,
Ph.D., Physics, June 2011,
M.Sc., Physics, February 2008.

2004-2007 École des Mines de Nancy, France,
B.Sc. (Equivalent), Materials Science, September 2007, *"Diplôme d'Ingénieur Civil des Mines"*.

2002-2004 Lycée Gay-Lussac, Limoges, France,
Undergraduate coursework, Physics and Chemistry, *"Classes Préparatoires aux Grandes Écoles"*.

Awards and Fellowships

2025 Dunn Family Professorship (GT, School of Physics).
2022 Elwood P. "Doc" Blanchard Early Career Professorship (GT, College of Sciences).
2022 Science Prize, Neutron Scattering Society of America.
2019 Kavli Fellow, U.S. National Academy of Sciences.
2019 Cullen-Peck Faculty Scholar Award (GT, College of Sciences).
2019 Sigma Xi Young Faculty Award, ΣΞ Scientific Research Honor Society (GT, University wide).
2019 BP Junior Faculty Teaching Excellence Award, Center for Teaching and Learning (GT, University wide).
2018 CAREER Award, National Science Foundation.
2017 Class of 1969 Teaching Fellow, Center for Teaching and Learning (GT, University wide).
2016 Ralph E. Powe Junior Faculty Enhancement Award, Oak Ridge Associated Universities.
2011 Johns Hopkins–Princeton Institute for Quantum Matter Postdoctoral Fellowship (2011-2014).
2008 Institut Laue-Langevin Graduate Student Fellowship (2008-2011).

Publications

2,788 Group Website	http://mourigal.gatech.edu
Profiles	[Google Scholar], [Web of Science], [Scopus], [Orcid].
Citations	Google Scholar: **4,021**, h = **33**; Web of Science: **2,788**, h = **28**; Scopus: **2,788**, h = **28**.

Submitted Journal Articles

74. D. N. Rathnaweera, X. Huai, K. R. Kumar, M. J. Winiarski, T. Klimczuk, A. G. Iwanicki, S. Kushwaha, **M. Mourigal**, T. M. McQueen, and T. T. Tran, "Atomically Modulating Competing Exchange Interactions in Centrosymmetric Skyrmion Hosts $GdRu_2X_2$ (X = Si, Ge)", *Submitted* (2025); https://arxiv.org/abs/2502.21169.

73. **C. Kim**, **O. Vilella**, Y. Lee, P. Park, Y. An, W. Cho, M. B. Stone, A. I. Kolesnikov, S. Asai, S. Itoh, T. Masuda, S. Matin, S. Kim, S.-J. Kim, **M. Mourigal** and Je-Geun Park "Higher-order skyrmion crystal in van der Waals Kitaev triangular antiferromagnet NiI_2", *Submitted* (February 2025), https://arxiv.org/abs/2502.14167.

Published and Accepted Journal Articles

72. D. Dahlbom, H. Zhang, C. Miles, **S. Quinn**, A. Niraula, B. Thipe, M. Wilson, S. Matin, H. Mankad, S. Hahn, D. Pajerowski, S. Johnston, Z. Wang, **H. Lane**, Y. W. Li, X. Bai, **M. Mourigal**, C. D. Batista , and K. Barros, "Sunny.jl: A Julia Package for Spin Dynamics", *Journal of Open Source Software* **10**, 8138 (2025); https://doi.org/10.21105/joss.08138.

71. **C. Kim**, S. Rathi, N. Zhang, A. Seth, N. V. Simonov, A. Rutherford, L. Chen, H. D. Zhou, C. Peng, M. Xu, W. Xie, A. D. Vira, M. Tian, M. Ozerov, I. Kimchi, **M. Mourigal**, D. Smirnov and Z. Jiang, "Sharp spectroscopic fingerprints of disorder in an incompressible magnetic state" *Nature Communications* In press (2025), [DOI].

70. **C. Kim**, **M. Mourigal**, "Emulation of quantum correlations by classical dynamics in a spin-1/2 Heisenberg chain" *Physical Review B* **112**, 214437 (2025); [DOI].

69. L. Spitz, A. Razpopov, S. Biswas, **H. Lane**, S. E. Nikitin, K. Iida, R. Kajimoto, M. Fujita, M. Arai, **M. Mourigal**, C. Rüegg, R. Valentí, B. Normand, "Phonon spectrum in the spin-Peierls phase of $CuGeO_3$", *Physical Review B* **112**, 184302 (2025); [DOI].

68. C. Dhital, **C. Kim**, B. Wilson, R. Rai, M. Stone, D. Pajerowski, Y. Hao, R. Gonzalez-Hernandez, J. Guerrero Sanchez, E. Sang Choi, J. Bacsa, **M. Mourigal**, "Dzyalloshinskii-Moriya interaction induced canted magnetism and p-d hybridization induced magnetodielectric coupling in $CoTeMoO_6$," *Physical Review Materials* **9**, 104412 (2025); [DOI].

67. **H. Lane**, K. Barros, and **M. Mourigal**, "Classical signatures of quenched and thermal disorder in the dynamics spin systems", *J. Phys.: Condens. Matter* **37**, 265802 (2025), [DOI].

66. **H. Lane**, **M. Mourigal**, "Thermally-induced mimicry of quantum cluster excitations and implications for the magnetic transition in $FePSe_3$", *Physical Review B* **111**, 174446 (2025); [DOI].

65. A. Ramanathan, **M. Mourigal**, H. S. La Pierre, "Frustrated magnetism and spin anisotropy in a buckled square net $YbTaO_4$", *Inorganic Chemistry* **64**, 158–165 (2025); [DOI].

64. **A. Desai**, T. Williams, **M. Daum**, G. Sala, A. Aczel, B. Winn, G. Granroth, and **M. Mourigal**, "Monte-Carlo ray-tracing studies of multiplexed prismatic graphite analyzers for the cold-neutron triple-axis spectrometer at the High Flux Isotope Reactor", *Nucl. Instrum. Methods Phys. Res. A* **1065**, 169508 (2024), [DOI].

63. **A. Jones**, **M. Mourigal**, A. Mounce, M. Lilly, "Cryogenic platform to investigate strong microwave cavity-spin coupling in correlated magnetic materials", *Journal of Physics: Condensed Matter* **36**, 355802 (2024); [DOI].

62. **H. Lane**, H. Zhang, D. Dahlbom, **S. Quinn**, R. D. Somma, **M. Mourigal**, C. D. Batista, and K. Barros, "Kernel Polynomial Method for Linear Spin Wave Theory", *SciPost* **17**, 145 (2024), [DOI].

61. G. E. Granroth, **M. Daum**, A. A. Aczel, T. J. Williams, B. Winn, J. A. Fernandez-Baca, **M. Mourigal**, M. D. Lumsden, "Incident Beamline Design for a Modern Cold Triple Axis Spectrometer at the High Flux Isotope Reactor", *Nucl. Instrum. Methods Phys. Res. A* **1064**, 169440 (2024), [DOI].

60. X. Huai, E. Acheampong, E. Delles, M. J. Winiarski, **L. Nassar**, M. Liang, C. Ramette, H. Ji, A. Scheie, S. Calder, **M. Mourigal**, T. T. Tran, "Noncentrosymmetric Triangular Magnet $CaMnTeO_6$: Strong Quantum Fluctuations and Role of s^0 vs. s^2 Electronic States in Competing Exchange Interactions", *Advanced Materials* (March 2024), [arxiv], [DOI]

59. D. Dahlbom, **F. T. Brooks**, S. Chi, A. I. Kolesnikov, M. B. Stone, H. Cao, K. Barros, **M. Mourigal**, C. D. Batista, and X. Bai, "Quantum to classical crossover in generalized spin systems: example of the temperature-dependent spin dynamics of FeI_2", *Physical Review B* **109**, 014427 (2024), [DOI].

58. **L. S. Nassar**, **H. Lane**, B. Haberl, B. Winn, M. Graves-Brook, S.M. Koohpayeh, and **M. Mourigal**, "Pressure control of magnetic order and excitations in the pyrochlore antiferromagnet $MgCr_2O_4$", *Physical Review B* **109**, 064415 (2024), [DOI].

57. C. Kim, S. Kim, P. Park, T. Kim, J. Jeong, S. Ohira-Kawamura, N. Murai, K. Nakajima, A. L. Chernyshev, **M. Mourigal**, S.-J. Kim and J.-G. Park, "Bond-dependent anisotropy and magnon breakdown in cobalt Kitaev triangular antiferromagnet", *Nature Physics* **19**, 1624–1629 (2023), [DOI].

56. A. Ramanathan, E. D. Walter, **M. Mourigal**, H. S. La Pierre, "Crystal field engineering of Praseodymium Qubits minimizes decoherence", *Journal of the American Chemical Society (JACS)* **145**, 17603–17612 (2023); [DOI].

JACS Spotlight: "Tetravalent Praseodymium Qubits Are Turning Heads", *JACS* **145**, 19141–19142 (2023).

55. **X. Bai**, S.-S. Zhang, H. Zhang, **Z. L. Dun**, W. A. Phelan, V. O. Garlea, **M. Mourigal**, C. D. Batista, "Instabilities of heavy magnons in an anisotropic magnet", *Nature Communications* **14**, 4199 (2023); [DOI].

54. A. Ramanathan, **J. Kaplan**, D.-C. Sergentu, J. A. Branson, M. Ozerov, A. Kolesnikov, S. G. Minasian, J. Autschbach, J. W. Freeland, Z. Jiang, **M. Mourigal**, H. S. La Pierre, "Chemical design of electronic and magnetic energy scales in tetravalent Praseodymium", *Nature Communications* **14**, 3134 (2023); [DOI].

53. B. Zager, J. R. Chamorro, **L. Ge**, V. Bisogni, J. Pelliciari, J. Li, G. Fabbris, T. M. McQueen, **M. Mourigal**, K. W. Plumb, "Electronic structure of the frustrated diamond lattice magnet $NiRh_2O_4$", *Physical Review B* **106**, 045134 (2022); [DOI].

52. G. Sala, **M. Mourigal**, C. Boone, N. P. Butch, A. D. Christianson, O. Delaire, A. J. DeSantis, C. L. Hart, R. P. Hermann, T. Huegle, D. N. Kent, J. Y. Y. Lin, M. D. Lumsden, M. E. Manley, D. G. Quirinale, M. B. Stone, and Y. Zhang, "CHESS: The future direct geometry spectrometer at the Second Target Station", *Review of Scientific Instruments* **93**, 065109 (2022); [DOI].

51. R. S. D. Mudiyanselage, H. Wang, **O. Vilella**, **M. Mourigal**, G. Kotliar, W. Xie, "$LiYbSe_2$: Magnetism in a New Type Pyrochlore Lattice", *Journal of the American Chemical Society (JACS)* **144**, 11933–11937 (2022); [DOI].

50. Jing Zhou, Guy Quirion, Jeffrey A. Quilliam, Huibo Cao, Feng Ye, Matthew B. Stone, Qing Huang, Haidong Zhou, Jinguang Cheng, **X. Bai**, **M. Mourigal**, Yuan Wan, and **Z. L. Dun**, "Anticollinear order and degeneracy lifting in square lattice antiferromagnet $LaSrCrO_4$", *Physical Review B* **105**, L180411 (2022); [DOI].

49. Q. Chen, R. Sinclair, A. Akbari-Sharbaf, Q. Huang, **Z. L. Dun** , J. Q. Yan, E. S. Choi, **M. Mourigal**, A. Verrier, R. Rouane, X. Bazier-Matte, J. A. Quilliam, A. A. Aczel, H. D. Zhou, "Ferromagnetism and spin liquid behavior in $[Mo_3]^{11+}$ molecular magnets" (Editors' Sugg.), *Physical Review Materials* **6**, 044414 (2022); [DOI].

48. A. Legros, S.-S. Zhang, **X. Bai**, H. Zhang, **Z. L. Dun**, W. A. Phelan, C. D. Batista, **M. Mourigal**, and N. P. Armitage, "Observation of 4- and 6-magnon bound-states in the spin-anisotropic frustrated antiferromagnet FeI_2", *Physical Review Letters* **127**, 267201 (2021); [DOI].

47. J. Wang, Y. Jiang, T. Zhao, **Z. L. Dun**, A. L. Miettinen, X. Wu, **M. Mourigal**, H. D. Zhou, W. Pan, D. Smirnov, Z. Jiang, "Magneto-transport evidence for strong topological insulator phase in narrow-gap materials, *Nature Communications* **12**, 6758 (2021); [DOI].

46. M. M. Bordelon, X. Wang, D. M. Pajerowski, A. Banerjee, M. Sherwin, C. M. Brown, M. S. Eldeeb, T. Petersen, L. Hozoi, U. K. R osser, **M. Mourigal**, S. D. Wilson, "Magnetic properties and signatures of moment ordering in triangular lattice antiferromagnet $KCeO_2$", *Physical Review B* **104**, 094421 (2021); [DOI].

45. J. Xing, K. M. Taddei, L. D. Sanjeewa, R. S. Fishman, **M. J. Daum**, **M. Mourigal**, C. dela Cruz, and A. S. Sefat, "Stripe antiferromagnetic ground state of the ideal triangular lattice compound $KErSe_2$", *Physical Review B* **103**, 144413 (2021); [DOI].

44. **Z. L. Dun**, **X. Bai**, M. B. Stone, H. D. Zhou, **M. Mourigal**, "Effective point-charge analysis of crystal electric fields – application to rare earth pyrochlores and tripod kagome magnets $R_3Mg_2Sb_3O_{14}$", *Physical Review Research* **3**, 023012 (2021); [DOI].

43. **M. J. Daum**, A. Ramanathan, A. I. Kolesnikov, S. Calder, **M. Mourigal**, H. S. La Pierre, "Collective excitations in the tetravalent lanthanide honeycomb antiferromagnet, Na_2PrO_3", *Physical Review B* **103**, L121109 (2021); [DOI].

42. **Z. L Dun**, **M. J. Daum**, R. Baral, H. B. Cao, Y. Liu, J. A. Rodriguez-Rivera, H. E. Fischer, E. S. Choi, Q. Huang, H. D. Zhou, **M. Mourigal**, B. Frandsen, "Neutron scattering investigations of proposed Kosterlitz-Thouless transitions in transverse-field Ising model triangular lattice antiferromagnet $TmMgGaO_4$", *Physical Review B* **103**, 064424 (2021); [DOI].

41. **X. Bai**, S.-S. Zhang, **Z. L. Dun**, H. Zhang, Q. Huang, H. D. Zhou, M. B. Stone, A. I. Kolesnikov, F. Ye, C. D. Batista, **M. Mourigal**, "Hybridized quadrupolar excitations in the frustrated and spin-anisotropic magnet FeI_2", *Nature Physics* **17**, 467-472 (2021); [DOI].

40. **Z. L. Dun**, **X. Bai**, **J. A. M. Paddison**, **E. Hollingworth**, N. P. Butch, C. D. Cruz, M. B. Stone, T. Hong, M. Mourigal, H. D. Zhou, "Quantum spin fragmentation in kagome ice $Ho_3Mg_2Sb_3O_{14}$"; *Physical Review X* **10**, 031069 (2020); [DOI].

39. Y. Jiang, J. Wang, T. Zhao, **Z. L. Dun**, Q. Huang, X. S. Wu, **M. Mourigal**, H. D. Zhou, W. Pan, M. Ozerov, D. Smirnov, Z. Jiang, "Unraveling the topological phase of $ZrTe_5$ via magneto-infrared spectroscopy"; *Physical Review Letters* **125**, 046403 (2020); [DOI].

38. X. Gui, T.-R. Chang, K. Wei, **M. J. Daum**, D. E. Graf, R. E. Baumbach, **M. Mourigal**, and W. Xie, "A novel magnetic material by design: observation of Yb3+ with spin-1/2 and possible superconducting trace in Yb_xPt_5P", *ACS Central Science* **6**, 2023 (2020); [DOI].

37. Z. Wang, H. Ying, W. Chern, S. Yu, **M. Mourigal**, J. D. Cressler, and Asif I. Khan, "Cryogenic characterization of a ferroelectric field-effect-transistor", *Applied Physics Letters* **116**, 042902 (2020); [DOI].

36. W. Wan, N. B. Christensen, A. W. Sandvik, P. Tregenna-Piggott, G. J. Nilsen, **M. Mourigal**, T. G. Perring, C. D. Frost, D.F. McMorrow, H.M. Rønnow, "Temperature dependence of the $(\pi, 0)$ anomaly in the excitation spectrum of the 2D quantum Heisenberg antiferromagnet", *Journal of Physics Condensed Matter* **32**, 374007 (2020); [DOI].

35. J. A. M. Paddison, P. Mukherjee, **X. Bai**, **Z. L. Dun**, C. R. Wiebe, H. Zhou, J. S. Gardner, **M. Mourigal**, S. E. Dutton, "Modeling spin dynamics in the singlet ground state garnet $Ho_3Ga_5O_{12}$", *Unpublished* (August 2019), [arxiv].

34. N. Jiang, **X. Bai**, J. Bacsa, **M. Mourigal**, and H. S. La Pierre, "Synthesis and magneto-structural characterization of $Yb_3(OH)_7SO_4{\cdot}1.5H_2O$: a frustrated quantum magnet with tunable stacking disorder", *Inorganic Chemistry* **58**, 10417-10423 (2019); [DOI].

33. R. Rawl, **L. Ge**, Z. Lu, Z. Evenson, C. R. Dela Cruz, Q. Huang, M. Lee, E. S. Choi, **M. Mourigal**, H. D. Zhou, and J. Ma, "$Ba_8MnNb_6O_{24}$: a model two-dimensional spin-5/2 triangular lattice antiferromagnet", *Physical Review Materials* **3**, 054412 (2019); [DOI].

32. **X. Bai**, **J. A. M. Paddison**, E. Kapit, S. M. Koohpayeh, J.-J. Wen, S. E. Dutton, A. T. Savici, A. I. Kolesnikov, G. E. Granroth, C. L. Broholm, J. T. Chalker, and **M. Mourigal**, "Magnetic excitations of the classical spin liquid $MgCr_2O_4$", *Physical Review Letters* **122**, 097201 (2019); [DOI].

31. J. Schlappa, U. Kumar, K. J. Zhou, S. Singh, **M. Mourigal**, V. N. Strocov, A. Revcolevschi, L. Patthey, H. M. Rønnow, S. Johnston, and T. Schmitt, "Direct observation of multi-spinon excitations outside of the two-spinon continuum in the antiferromagnetic spin chain cuprate Sr_2CuO_3", *Nature Communications* **9**, 5394 (2018); [DOI].

30. H. Ying, J. Dark, A. P. Omprakash, B. R. Wier, **L. Ge**, U. Raghunathan, N. E. Lourenco, Z. E. Fleetwood, **M. Mourigal**, D. Davidović, and J. D. Cressler, "Collector transport in SiGe HBTs operating at cryogenic temperatures", *IEEE Trans. on Electron Devices* **65**, 3697 (2018); [DOI].

29. Y. Kamiya, **L. Ge**, Tao Hong, Y. Qiu, D. L. Quintero-Castro, Z. Lu, H. B. Cao, M. Matsuda, Z. Lu, E. Choi, C. D. Batista, M. Mourigal, H. D. Zhou, and J. Ma, "The nature of spin excitations in the one-third magnetization plateau phase of $Ba_3CoSb_2O_9$", *Nature Communications* **9**, 2666 (2018); [DOI].

28. X. Zhang, F. Mahmood, **M. Daum**, Z. L. Dun, J. A. M. Paddison, N. J. Laurita, T. Hong, H. D. Zhou, N. P. Armitage, and **M. Mourigal**, "Hierarchy of exchange interactions in the triangular-lattice spin-liquid $YbMgGaO_4$", *Physical Review X* **8**, 031001 (2018); [DOI].

27. Nora Hassan, S. Cunningham, M. Mourigal, E. I. Zhilyaeva, S. Turunova, R. N. Lyubovskaya, J. Schlueter, and N. Drichko, "Evidence for a quantum dipole liquid state in an organic quasi-two-dimensional material", *Science* **360**, 1101-1104 (2018); [DOI].

Perspective by B. J. Powell, "The expanding materials multiverse", *Science* **360**, 1073-1074 (2018).

26. J. Leiner, Joosung Oh, A. I. Kolesnikov, M. B. Stone, Manh Duc Le, E. P. Kenny, B. J. Powell, **M. Mourigal**, E. E. Gordon, M.-H. Whangbo, J.-W. Kim, S.-W. Cheong, and Je-Geun Park, "Magnetic excitations of the Cu^{2+} quantum spin chain in Sr_3CuPtO_6", *Physical Review B* **97**, 104426 (2018); [DOI].

25. J. R. Chamorro, **L. Ge**, J. Flynn, M. A. Subramanian, **M. Mourigal**, and T. M. McQueen, "Frustrated spin one on a diamond lattice" (Editors' Sugg.), *Physical Review Materials* **2**, 034404 (2018); [DOI].

24. **M. Mourigal**, "The two faces of a magnetic honeycomb" (News & Views, Non Peer-Reviewed Editorial), *Nature* **554**, 307-308 (2018); [DOI].

23. N. Blanc, J. Trinh, L. Dong, **X. Bai**, A. A. Aczel, M. Mourigal, L. Balents, T. Siegrist, and A. P. Ramirez, "Quantum criticality among entangled spin chains", *Nature Physics* **14**, 273-276 (2018); [DOI].

22. D. Davidović, H. Ying, J. Dark, B. R. Wier, **L. Ge**, N. E. Lourenco, A. P. Omprakash, M. Mourigal and J. D. Cressler, "Tunneling, current gain, and transconductance in silicon-germanium heterojunction bipolar transistors operating at milliKelvin temperatures", *Physical Review Applied* **8**, 024015 (2017); [DOI].

21. **L. Ge**, J. Flynn, J. A. M. Paddison, M. B. Stone, S. Calder, M. A. Subramanian, A. P. Ramirez, **M. Mourigal**, "Spin order and dynamics in the diamond-lattice Heisenberg antiferromagnets $CuRh_2O_4$ and $CoRh_2O_4$" (Editors' Suggestion), *Physical Review B* **96**, 064413 (2017); [DOI].

20. R. Rawl, **L. Ge**, H. Agrawal, Y. Kamiya, C. R. Dela Cruz, N. P. Butch, X. F. Sun, M. Lee, E. S. Choi, J. Oitmaa, C. Batista, M. Mourigal, H. D. Zhou, and J. Ma, "$Ba_8CoNb_6O_{24}$: a spin-1/2 triangular-lattice Heisenberg antiferromagnet in the 2D limit", *Physical Review B* **95**, 060412 (2017); [DOI].

19. J. A. M. Paddison, **M. Daum**, Z. L. Dun, G. Ehlers, Y. Liu, M. B. Stone, H. D. Zhou, and M. Mourigal, "Continuous excitations of the triangular-lattice quantum spin liquid $YbMgGaO_4$", *Nature Physics* **13**, 117-122 (2017); [DOI].

    Web of Science's Highly Cited Paper (Top 1% in its academic field). News & Views on concurrent work by L. Balents, "Condensed-matter physics: Quantum mechanics in a spin", *Nature* **540**, 534-535 (2016). Listed as ORNL Neutron Scattering Top 10 most impactful papers of 2017.

18. H. Ying, B. R. Wier, J. Dark, N. E. Lourenco, **L. Ge**, A. P. Omprakash, M. Mourigal, D. Davidović, and J. D. Cressler, "Operation of SiGe HBTs down to 70 mK", *IEEE Electron Device Letters* **38**, 12-15 (2017); [DOI].

17. J. A. M. Paddison, H. S. Ong, J. O. Hamp, P. Mukherjee, **X. Bai**, M. G. Tucker, N. P. Butch, C. Castelnovo, **M. Mourigal**, and S. E. Dutton, "Emergent order in the kagome Ising magnet $Dy_3Mg_2Sb_3O_{14}$", *Nature Communications* **7**, 13842 (2016); [DOI].

16. A. M. Fry-Petit, A. F. Rebola, **M. Mourigal**, M. Valentine, N. Drichko, J. P. Sheckelton, C. J. Fennie, and T. M. McQueen, "Direct assignment of molecular vibrations through normal mode analysis of the neutron dynamic pair distribution function technique". *Journal of Chemical Physics* **143**, 124201 (2015); [DOI].

15. D. E. MacLaughlin, O. O. Bernal, L. Shu, J. Ishikawa, Y. Matsumoto, J.-J. Wen, **M. Mourigal**, C. Stock, C. L. Broholm, G. Ehlers, K. Kimura, Y. Machida, S. Nakatsuji, Y. Shimura, and T. Sakakibara, "Unstable spin-ice order in the stuffed metallic pyrochlore $Pr_{2+x}Ir_{2-x}O_{7-\delta}$" (Editors' Suggestion), *Physical Review B* **92**, 054432 (2015); [DOI].

14. **M. Mourigal**, S. Wu, M. B. Stone, J. R. Neilson, J. M. Caron, T. M. McQueen, and C. L. Broholm, "Block magnetic excitations in the orbitally selective Mott insulator $BaFe_2Se_3$", *Physical Review Letters* **115**, 047401 (2015); [DOI].

13. M. Valentine, S. M. Koohpayeh, **M. Mourigal**, T. M. McQueen, C. L. Broholm, N. Drichko, S. Dutton, R.J . Cava, T. Birol, H. Das, and C. J. Fennie, "Raman study of magnetic excitations and magneto-elastic coupling in $SrCr_2O_4$", *Physical Review B* **91**, 144411 (2015); [DOI].

12. B. Dalla Piazza, **M. Mourigal**, N. B. Christensen, G. J. Nilsen, P. Tregenna-Piggott, T. G. Perring, M. Enderle, D. F. McMorrow, D. A. Ivanov, and H. M. Rønnow, "Fractional excitations in the square-lattice quantum antiferromagnet", *Nature Physics* **11**, 62-68 (2015); [DOI].

    News & Views by F. Becca and S. Sorella, "Quantum Magnets: Break it up", *Nature Physics* **11**, 8-9 (2015).

11. **M. Mourigal**, W. T. Fuhrman, J. P. Sheckelton, A. Wartelle, J. A. Rodriguez-Rivera, D. L. Abernathy, T. M. McQueen, and C. L. Broholm, "Molecular quantum magnetism in $LiZn_2Mo_3O_8$",

Physical Review Letters, **112**, 027202 (2014); [DOI].

10. S. M. Koohpayeh, J.-J. Wen, **M. Mourigal**, S. E. Dutton, R. J. Cava, C. L. Broholm, and T. M. McQueen, "Optical floating zone crystal growth and magnetic properties of $MgCr_2O_4$", *Journal of Crystal Growth* **384**, 39-43 (2013); [DOI].

9. **M. Mourigal**, W. T. Fuhrman, A. L. Chernyshev, and M. E. Zhitomirsky, "Dynamical structure factor of triangular lattice antiferromagnet", *Physical Review B* **88**, 094407 (2013); [DOI].

8. **M. Mourigal**, M. Enderle, A. Klöpperpieper, J.-S. Caux, A. Stunault, and H. M. Rønnow, "Fractional spinon excitations in the quantum Heisenberg antiferromagnetic chain", *Nature Physics* **9**, 435-441 (2013); [DOI].

7. **M. Mourigal**, M. Enderle, B. Fåk, R. K. Kremer, J. M. Law, A. Schneidewind, A. Hiess, and A. Prokofiev, "Evidence of a bond-nematic phase in $LiCuVO_4$", *Physical Review Letters* **109**, 027203 (2012); [DOI].

6. W. T. Fuhrman, **M. Mourigal**, M. E. Zhitomirsky, and A. L. Chernyshev, "Dynamical structure factor of quasi-2D antiferromagnet in high fields", *Physical Review B* **85**, 184405 2012); [DOI].

5. S. E. Dutton, M. Kumar, **M. Mourigal**, Z. G. Soos, J.-J. Wen, C. L. Broholm, N. H. Andersen, Q. Huang, M. Zbiri, R. Toft-Petersen, and R. J. Cava, "Quantum spin liquid in frustrated one-dimensional $LiCuSbO_4$", *Physical Review Letters* **108**, 187206 (2012); [DOI].

4. J. Schlappa, K. Wohlfeld, K. Zhou, **M. Mourigal**, M. Haverkort, V. N. Strocov, L. Hozoi, C. Monney, S. Nishimoto, S. Singh, A. Revcolevschi, J.-S. Caux, L. Patthey, H. M. Rønnow, J. v.d.Brink, and T. Schmitt, "Spin-orbital separation in the quasi-1D Mott insulator Sr_2CuO_3", *Nature*, **485**, 82-85 (2012); [DOI].

   Web of Science's Highly Cited Paper (Top 1% in its academic field). News & Views by R. Claessen, Solid-state physics: Electrons do the split", *Nature* **485**, 46-47 (2012).

3. B. Dalla Piazza, **M. Mourigal**, M. Guarise, H. Berger, T. Schmitt, M. Grioni, and H. M. Rønnow, "Unified quantitative model for magnetic and electronic spectra of the undoped cuprates", *Physical Review B* **85**, 100508(R) (2011); [DOI].

2. **M. Mourigal**, M. Enderle, R. K. Kremer, J. M. Law, and B. Fåk, "Ferroelectricity from spin supercurrents in $LiCuVO_4$", *Physical Review B* **83**, 100409(R) (2011); [DOI].

1. **M. Mourigal**, M. E. Zhitomirsky, and A. L. Chernyshev, "Field-induced decay dynamics in square-lattice antiferromagnets", Editors' Suggestion, *Physical Review B*, **82**(14), 144402 (2010); [DOI].

Dissertations (Including Mentees)

9. S. Katta (Advisors: **M. Mourigal**), "Magnetic properties of quasi-two-dimensional non-Kramers magnets TmX_3 and TmOX". Undergraduate Thesis, Georgia Institute of Technology (December 2024). [DOI]

8. O. Villela (Advisor: **M. Mourigal**), "Novel magnetic phases of quantum matter from geometric, spin-space and chemical frustration". Ph.D. Dissertation, Georgia Institute of Technology (July 2024).

7. A. K. Jones (Advisors: **M. Mourigal**, M. Lilly), "Deep cryogenic electron spin resonance". Undergraduate Thesis, Georgia Institute of Technology (May 2024).

6. A. S. Desai (Advisor: **M. Mourigal**), "Monte-Carlo simulations of prismatic analyzers for neutron scattering spectrometers". Undergraduate Thesis, Georgia Institute of Technology (December 2023).

5. M. Daum (Advisor: **M. Mourigal**), "Quantum magnetism in quasi-two-dimensional rare-earth oxides: neutron scattering and instrumentation". Ph.D. Dissertation, Georgia Institute of Technology (August 2021); [DOI]

4. L. Ge (Advisor: **M. Mourigal**), "Versatile spin-wave approaches to the spin dynamics of transition-metal insulators". Ph.D. Dissertation, Georgia Institute of Technology (May 2020); [DOI]

3. X. Bai (Advisor: **M. Mourigal**), "Neutron scattering and quantitative modeling of magnetic excitations in frustrated magnets". Ph.D. Dissertation, Georgia Institute of Technology (December 2019); [DOI]

2. **M. Mourigal** (Advisors: H. M. Rønnow and M. Enderle), "Order and dynamics of model quantum antiferromagnets". Ph.D. Dissertation, Ecole Polytechnique Fédérale de Lausanne (June 2011); [DOI].

1. **M. Mourigal** (Advisor: M. E. Zhitomirsky), "Effect of magnetic field on dynamics of antiferromagnets"; Master's Thesis, Ecole Polytechnique Fédérale de Lausanne (February 2008); [DOI].

Teaching and Mentoring

Courses Taught

Spring 2026	PHYS 2212	Principles of Physics II	250 students
Fall 2025	PHYS 3122	Electro & Magnetostatics	56 students
Spring 2025	PHYS 2212	Principles of Physics II	231 students
Spring 2024	PHYS 6211	Condensed Matter Physics II	25 students
Fall 2023	PHYS 6210	Condensed Matter Physics I	30 students
Spring 2023	PHYS 6211	Condensed Matter Physics II	17 students
Fall 2022	PHYS 3143	Quantum Mechanics I	40 students
Spring 2022	PHYS 6211	Condensed Matter Physics II	16 students
Fall 2021	PHYS 3143	Quantum Mechanics I	45 students
Spring 2021	PHYS 6211	Condensed Matter Physics II	15 students
Fall 2020	PHYS 3122	Electro & Magnetostatics	57 students
Spring 2020	PHYS 4262	Solid State Physics	24 students
Spring 2019	PHYS 4262	Solid State Physics	30 students
Fall 2018	PHYS 3122	Electro & Magnetostatics	55 students
Spring 2018	PHYS 4262	Solid State Physics	16 students
Fall 2017	PHYS 3122	Electro & Magnetostatics	61 students
Spring 2017	PHYS 2212	Introductory Physics II	45 students
Spring 2016	PHYS 2212	Introductory Physics II	79 students
Spring 2015	PHYS 2212	Introductory Physics II	92 students

Graduate Students Supervised

6. Sathvik Nallapati — GT Physics Graduate Student — 01/2023-Current
5. Faith Brooks — GT Physics Graduate Student — 01/2021-Current
   GT Physics Bonnie and Charles Rice Jr. Fellowship, 2024
4. Olivia Vilella — GT Physics Graduate Student — 01/2021-07/2024
   Subsequently: Quantum Physicist, Northrop Grumman (MD)
3. Marcus Daum — GT Physics Graduate Student — 01/2016-07/2021
   Subsequently: Future Technical Leader Program, Northrop Grumman (MD)
2. Luwei Ge — GT Physics Graduate Student — 01/2015-05/2020
   Subsequently: Software Engineer, Google (CA)
1. Xiaojian Bai — GT Physics Graduate Student — 01/2015-12/2019
   Subsequently: Postdoctoral Fellow, High Flux Isotope Reactor, ORNL (TN)
   Currently: Assistant Professor of Physics, Louisiana State University (LA)

Postdocs Mentored

5. Rasmus Christiansen — Postdoctoral Research Associate — 06/2024–
4. Chaebin Kim — Postdoctoral Research Associate — 03/2024–
3. Harry Lane — Postdoctoral Research Associate — 08/2022–09/2023
   Subsequently: 1851 Research Fellow, School of Physics and Astronomy, University of St Andrews (UK)
   Currently: Dame Kathleen Ollerenshaw Fellow, University of Manchester (UK)
2. Zhiling Dun — Postdoctoral Research Associate — 09/2017–07/2021
   Subsequently: Tenure-Track Researcher, Institute of Physics, Chinese Academy of Sciences, Beijing
   Currently: Process Engineer, Advanced Materials, Santa Clara (CA)
1. Joseph Paddison — Postdoctoral Research Associate — 06/2015–09/2016
   Subsequently: Junior Research Fellow, Churchill College & Cavendish Lab, Cambridge University
   Currently: Permanent Staff, Neutron Scattering Division, ORNL (TN)

Undergraduate Students Supervised

26. Delano Ducasse GT Physics Undergraduate Resesearch 09/2024–Current

25. Sierra Diller GT Physics Undergraduate Resesearch 09/2024–Current

24. Elise Barron GT Physics Undergraduate Resesearch 02/2024–Current

23. Anya Johnson REU Student and Spelman Physics Undergraduate Researcher 05/2023–Current

22. Nina Casselberry GT Aerospace Undergraduate Resesearch 09/2023–05/2025
Subsequently: Graduate Student in Physics, Florida State University

21. Shreenithi Katta GT Physics Undergraduate Researcher 08/2022–05/2025
NSF Graduate Research Fellowship Honorable Mention, 2025
DOE Science Undergraduate Laboratory Internships Award, Argonne, 2023
Subsequently: Graduate Student in Physics, University of Illinois, Urbana-Champaign

20. Sam Quinn GT Physics Postbaccalaureate Researcher 07/2023-07/2024
Subsequently: Graduate Student in Physics, University of California Los Angeles

19. Aulden Jones GT Physics Undergraduate Researcher 01/2021–07/2024
NSF Graduate Research Fellowship, 2024
GT Physics Fukuyo Outstanding Physics Undergraduate Award, 2023
Sandia-GT Academic Alliance Summer Fellowship, 2021 & 2023
Global Quantum Leap Intern at NIMS, Tsukuba, Japan, 2022
Subsequently: Graduate Student in Physics, Harvard University

18. Adit Desai GT Physics Undergraduate Researcher 01/2021–05/2024
NSF Graduate Research Fellowship, 2024
GT Physics Letson Scholarship, 2021
DOE Science Undergraduate Laboratory Internship Award, Oak Ridge, 2023
Subsequently: Graduate Student in Physics, California Institute of Technology

17. Lila Nassar GT Physics Undergraduate Researcher 01/2022–07/2023
NSF Graduate Research Fellowship, 2023
GT Wartell and Brossette Award 2022; GT Pierotti Memorial Scholarship, 2023
Subsequently: Graduate Student in Physics, Princeton University

16. Katlyn Grimes Summer Student (NSF REU Program) 05/2022–07/2022
Subsequently: Master Student, European Master in Quantum Science & Technology

15. Milkias Balkew GT Physics and ECE Undergraduate Researcher 01/2021–05/2022
Subsequently: Vivian Thomas Scholar and Graduate Student in Physics, Johns Hopkins University

14. Robin Glefke GT Physics Undergraduate Student 01/2020–05/2021
NSF Graduate Research Fellowship, 2021
Subsequently: Graduate Student in Physics at the University of California San Diego

13. Charles Cardot GT Physics Undergraduate Student 01/2020–05/2021
NSF Graduate Research Fellowship, 2022
Subsequently: Graduate Student in Physics at the University of Washington (US)

12. Patrick Pinney GT Physics Undergraduate Student 05/2019–12/2019
Subsequently: Intern at Los Alamos National Laboratory (LANL)

11. Liam Ritchie GT Physics Undergraduate Student 05/2018–12/2019
Subsequently: Intern at Oak Ridge National Laboratory

10. Emilly Hollingworth GT Physics Undergraduate Student 06/2018–07/2019
NSF Graduate Research Fellowship, 2021
Subsequently: Graduate Student in Physics at the University of California, Berkeley

9. Hannah Price GT Physics Undergraduate Student 09/2017–07/2019
Subsequently: Master Student in Theoretical Physics at ETH Zürich (CH)

8. Zack Kennedy GT Physics Undergraduate Student 09/2017–07/2019
Subsequently: Graduate Student in Physics at Cornell University (US)

7. Emmanuel Aneke Summer Student (NSF REU Program) 06/2018–07/2018
Subsequently: Al Ashley Fellow, SLAC National Accelerator Laboratory

6. Darian Hartsell GT Physics Undergraduate Student 09/2016–06/2018
Subsequently: Graduate Student in Physics at the University of Southern California (US)

5. Cheetan Velivela Cornell Physics Undergraduate Student (Visiting) 01/2017–07/2017
Subsequently: Continued as Physics Undergraduate Student at Cornell University (US)

4. Sai Paladugu GT Physics and Computer Science Undergraduate Student 06/2016–05/2017
Subsequently: Graduate Student in Physics at the University of Illinois, Urbana-Champaign (US)

3. Patrick Nave ORNL Intern (Challenge Program) 06/2016–08/2016
Co-advised with Dr. Jiao Lin at Oak Ridge National Laboratory's NDAV Division
Subsequently: Graduate Student in Mathematics at Duke University, Durham

2. Michael Wadell ORNL Intern (Challenge Program) 06/2016–08/2016
Co-advised with Dr. Matthew Stone at Oak Ridge National Laboratory's QCMD Division
Subsequently: Graduate Student in Data Analytics at Columbia University, New York

1. Michael Waterbury GT Physics Undergraduate Student 04/2015–08/2016
Subsequently: Graduate Student in Physics at the University of California, Irvine (US)

Major Professional Activities and Service

Leadership in Professional Societies

2025-Current Chair Line, Topical Group on Magnetism (GMAG), American Physical Society (APS)

Meeting Organization

2025 Program Committee, International Conference on Neutron Scattering, Copenhagen (DK)
2025 Program Committee, 13th International Conference on Highly Frustrated Magnetism, Toronto (CA)
2024 Co-Organizer, Methods for Modeling Transport and Dynamics of Quantum Magnets Workshop, Los Alamos National Laboratory, 80 international participants, May 28–31, 2024.
2024 Lead GMAG Topical Program Organizer (Spin Liquids), APS March Meeting 2024, Minneapolis (MN).
2023 Lead GMAG Topical Program Organizer (Spin Liquids), APS March Meeting 2023, Las Vegas (NV).
2021 Member GMAG Topical Program Organizer, APS March Meeting 2022, Chicago (IL).
2019 Science at the Second Target Station Workshop, ORNL, December 9–10, 2019 (200+ attendees).
2019 Member GMAG Topical Program Organizer, APS March Meeting 2020, Denver (CO).
2017 Organizer, Workshop on Early Quantum Materials Science at ORNL's Second Target Station, GT

Advisory and Technical Roles with Oak Ridge National Laboratory

2018-Current Spokesperson, MANTA Instrument Advisory Committee, Neutron Scattering Division.
2020-2024 Spokesperson, CHESS Instrument Advisory Committee, Second Target Station Project.
2019-2021 Member and Chair (2021), SNS-HFIR User Group Executive Committee (SHUG-EC).

Georgia Tech Institutional Service

2024-Current Elected Member, Georgia Tech Faculty Senate.
2022-Current ORNL-GT Faculty Liaison, Vice President for Interdisciplinary Research's Office.
2021-2024 Science Advisor, Institute for Materials (now Institute for Matter & Systems).
2019-2021 Co-Director, Georgia Tech Quantum Alliance, Institute for Electronics and Nanotechnology.

Georgia Tech Departmental Service

2025- Chair, Faculty Review Committee, School of Physics.
2023-2025 Elected Member and Co-Chair, Faculty Advisory Committee, School of Physics.
2022-2024 Chair, Awards and Fellowships Committee, School of Physics.
2021-2022 Chair, Faculty Search Committee in Quantum Physics, School of Physics (2 hires).
2019-2020 Member, Condensed Matter Faculty Search Committee, School of Physics (1 hire).
2018-2020 Elected Member and Secretary, Faculty Advisory Committee, School of Physics.
2017-2018 Chair, Condensed Matter Faculty Search Committee, School of Physics (1 hire).

Membership in Professional Societies

American Physical Society
Materials Research Society
Neutron Scattering Society of America
Sigma Xi, The Scientific Research Honor Society
American Association of University Professors (President of GT Chapter, 2024-2026)

Oral Presentations

Invited Presentations at International Conferences & Workshops

2025

42. "Inelastic Neutron Scattering in the Quasiparticle Zoo: Magnons, Spinons, Bound States, and Their Interactions", Workshop on Quantum Geometry and Transport of Collective Excitations in (Non-)Magnetic Insulators, Mainz (Germany). May 7, 2025.

2024

41. "Cryogenic platform to investigate strong microwave cavity-spin coupling in correlated magnetic materials", Southeastern Magnetic Resonance Conference (SEMRC) 2024, Atlanta (GA). October 26, 2024.

2023

40. "Tetravalent Praseodynium: from Kitaev magnets to spin qubits", Workshop on Quantum Materials in the Quantum Information Era, Max Planck Institute for the Physics of Complex Systems, Dresden (Germany). September 2023.
39. "Magnon pairing, interactions, and decay in iodine-based triangular spin-orbit magnets", KITP Conference on Dynamical Response and Transport in Quantum Magnets, KITP, UC Santa Barbara (CA). August 29, 2023.
38. "Probing spins with spins: recent neutron scattering advances in quantum magnetism", KITP Program on Topological Quantum Matter: Concepts and Realizations, KITP, UC Santa Barbara (CA). July 20, 2023.
37. "Unusual magnetic excitations of product-state spin systems", Workshop on Topology and Fractionalization in Magnetic Materials, Columbus (OH). May 15, 2023.

2022

36. "Magnon pairing, interactions and decay in the spin-orbital magnet FeI_2", Frustrated Metals and Insulators Workshop, International Centre for Theoretical Sciences (ICTS), Bangalore (India). September 15, 2022
35. "Magnon pairing, interactions and decay in the spin-orbital magnet FeI_2", Swiss Workshop on Materials with Novel Electronic Properties (SWM-2020), Les Diablerets (Switzerland). August 30, 2022.
34. "Novel Forms of Quantum Magnetism using Kramers/non-Kramers Rare-Earth Pairs", 29th Rare Earth Research Conference (RERC29), Philadelphia (PA). June 28, 2022.
33. "Magnons are not forever" (Science Prize Talk), American Conference on Neutron Scattering, Boulder (CO). June 2022.
32. "Magnon pairing, interactions and decay in the spin-orbital magnet FeI_2", Workshop on Correlated Topological Materials for Quantum Information Sciences, Brookhaven National Laboratory User Meeting (NY). May 23, 2022.

2021

31. "Magnon pairing, interactions and decay in the spin-orbital magnet FeI_2" (online), Korean Physical Society Annual Meeting (Virtual), October 21, 2021.
30. "Magnon pairing, interactions and decay in the spin-orbital magnet FeI_2" (online), Workshop on Quantum Materials: New Insights from Neutron Scattering, University of Minnesota (Virtual), June 9, 2021.
29. "Frustrated Magnetism Beyond Kramers Doublets" (online), Quantum Materials Canada 2020, Jouvence (Québec). May 26, 2021.
28. "Hybridization and interaction between quantum multipolar fluctuations in a conventional magnet" (online), International workshop on Emergence and Dynamics in Quantum Matter, Korea Institute for Advanced Study. February 3, 2021.

2020

27. (Postponed to 202X), Third International Workshop From Electronic Correlations to Functionality, Kloster Seeon (Germany).

2019

26. "Nature of magnetic excitations in 2D and 3D spin liquids", Materials Research Society (MRS) Fall Meeting 2019, Boston (MA). December 2, 2019.
25. "Continuous magnetic spectra in absence of quasiparticle fractionalization", KITP Program on Topological Quantum Matter: Concepts and Realizations, KITP, UC Santa Barbara (CA). October 15, 2019.
24. "Magnetic Materials: a gateway to quantum matter and information" (Poster), Second Japanese-American-German Frontiers of Science Symposium, Kyoto (Japan). September 27, 2019.
23. "Magnetic excitations in classical spin liquids: the case of MgCr2O4 and beyond", International Conference on Strongly Correlated Electron Systems (SCES) 2019, Okayama (Japan). September 25, 2019.
22. "Anomalous spin dynamics in triangular quantum magnets", Workshop on Quantum Matter: Dynamics of Quantum Magnetism, Tsung-Dao Lee Institute, Shanghai (China). August 29, 2019.
21. "Magnetic excitations in classical spin liquids: the case of $MgCr_2O_4$ and beyond". Workshop on Competing Interactions and Colossal Responses in Transition Metal Oxides, Telluride Science Research Center (CO). June

26, 2019.

20. "Magnetic excitations of a classical spin liquid: the case of $MgCr_2O_4$", Workshop on Constrained Many-Body Dynamics, Max Planck Institute for the Physics of Complex Systems, Dresden (Germany). March 29, 2019.
19. "Nature of magnetic excitations in spin liquids", Quantum Materials Workshop, Oak Ridge National Laboratory (TN). February 19, 2019.
18. "Nature of magnetic excitations in spin liquids", Quantum Materials Symposium 2019, YongPyong (South Korea). February 12, 2019.

2018

17. "Exotic magnetic matter and the search for spin liquids", The 85th Annual Meeting of the APS Southeastern Section, Knoxville (TN). November 8, 2018.
16. "Anomalous spin dynamics in triangular quantum magnets", International Conference on Highly Frustrated Magnetism 2018, Davis (CA). July 14, 2018.
15. "Impact and future of cold neutrons for quantum materials research", Neutron Users New Instrument Workshop, American Conference on Neutron Scattering, College Park (MD). June 24, 2018.

2017

14. "Spin fragmentation in kagome Ising magnets". Seventy fifth Pittsburgh Diffraction Conference, Indiana (PA). October 19, 2017.
13. "Kagome Ising physics realized in bulk magnets: the $RE_3Mg_2Sb_3O_{14}$ family". International Conference on Strongly Correlated Electron Systems (SCES) 2017, Prague (Czech Republic). July 17, 2017.
12. "Spin-liquid candidates in novel triangular and kagome rare-earth oxides". Workshop on Competing Interactions and Colossal Responses in Transition Metal Oxides, Telluride Science Research Center (US). June 28, 2017.
11. "Non-harmonic magnons in quantum antiferromagnets". Workshop on Larmor precession techniques for ultrahigh-resolution spectroscopy, Oak Ridge National Laboratory (US). May 25, 2017.
10. "Current investigations in quantum magnetism using (mostly) cold neutrons". Workshop on the MANTA spectrometer, Oak Ridge National Laboratory (US). May 4, 2017.
9. "Continuous magnetic excitations in the triangular-lattice quantum spin-liquid $YbMgGaO_4$". APS March Meeting, New Orleans (US). March 13, 2017.

2015

8. "Block magnetic excitations in the orbitally selective Mott insulator $BaFe_2Se_3$". User Meeting 2015, Oak Ridge National Laboratory (US). October 27, 2015.
7. "Opportunities for Cold Neutrons on Quantum Materials: Bright, Focused, Extreme and Polarized". MANTA: A Next Generation Cold Triple Axis Spectrometer for the High Flux Isotope Reactor, Oak Ridge National Laboratory (US). May 19, 2015.

Before 2015 (pre-GT)

6. "Frustrated magnetism with magnetic molecules". American Conference on Neutron Scattering, Knoxville (US). June 2, 2014.
5. "Molecular quantum magnetism in $LiZn_2Mo_3O_8$". APS March Meeting, Denver (US). March 3, 2014.
4. "Molecular quantum magnetism in $LiZn_2Mo_3O_8$". Mott Physics Beyond Heisenberg, Monte Veritá (Switzerland). October 28, 2013.
3. "Origin of ferroelectricity and exotic magnetism in frustrated $LiCuVO_4$". APS March Meeting, Baltimore (US). March 20, 2013.
2. "Origin of ferroelectricity and exotic magnetism in frustrated $LiCuVO_4$". FLIPPER, International Workshop on Single-Crystal Diffraction with Polarised Neutrons, Institut Laue-Langevin, Grenoble (France). January 25, 2013.
1. "Neutron scattering from quantum and frustrated spin chains". SYNEMAG – International Workshop on Synchrotron and Neutron Applications of High Magnetic Fields, European Synchrotron Radiation Facility, Grenoble (France). October 19, 2012.

Invited Presentations at Universities & Institutes

2025

52. "Spin Liquids: A deep dive into exotic magnetic matter", Colloquium, Clemson University (SC). October 2, 2025.

2024

51. "Quantum or not? Decoding spin dynamics in magnetic insulators ", Condensed Matter Seminar, University of Illinois, Urbana-Champaign (IL). December 7, 2024.
50. "Modeling neutron scattering experiments on quantum materials using semiclassical spin dynamics and ray-tracing simulations", Symposium on Advancements in Simulating Neutron Scattering Instruments and Experiments, Oak Ridge National Laboratory (TN). October 29, 2024.

49. "Spin Liquids: A dive into exotic magnetic matter", Colloquium, Kennesaw State University (GA). August 23, 2024.

2023

48. "Quasiparticle interactions and quantum-to-classical crossover in the spin-orbital magnet FeI_2", Condensed Matter Seminar, Boston University (MA). November 3, 2023.
47. "Quasiparticle pairing, decay and fractionalization in quantum spin systems", Colloquium, Jülich Center for Neutron Scattering and RWTH Aachen University (Germany). August 25, 2023.
46. "Quantum materials grand challenges for neutrons", Neutron Scattering User Meeting, Oak Ridge National Laboratory (TN). June 8, 2023.
45. "Magnons are not forever", Elasto-Q-Mat Colloquium, Universities of Frankfurt, Karlsruhe and Mainz (Germany). June 1, 2023.
44. "The secret life of electrons' spins in quantum materials ", Seminar, Morehouse College (GA). April 19, 2023.
43. "Magnon pairing, interactions and decay in the spin-orbital magnet FeI_2", Condensed Matter Seminar, Brown University (RI). April 13, 2023.
42. "Quantum ground-states and excitations of magnetic matter – from neutron scattering to quantum information", Quantum Science and Engineering Symposium, Florida State University (FL). April 6, 2023.

2022

41. "Magnon pairing, interactions and decay in the spin-orbital magnet FeI_2", Condensed Matter Seminar, University of Minnesota (MN). November 16, 2022.
40. "Magnon interactions, pairing, decay and fractionalization in triangular lattice magnets", Physics Colloquium, University of Tennessee, Knoxville (TN). October 24, 2022.
39. "The new wave of Quantum Magnetism", Physics Colloquium, University of Georgia, Athens (GA). September 29, 2022.
38. "Magnons are not forever", Physical Review X Editor's Seminar, American Physical Society. September 16, 2022.
37. "Magnons are not forever", Laboratory for Neutron Scattering, Paul Scherrer Institute (Switzerland). September 2, 2022.

2021

36. "Magnon pairing, decay and fractionalization in quantum magnets", Special MRSEC Seminar, Ohio State University Columbus (OH). October 18, 2021.
35. "Magnons are (not) forever", Physics Colloquium, University of Tennessee, Knoxville (TN). April 22, 2021.
34. "Magnon pairing, interactions and decay in the spin-orbital magnet FeI_2" Theory of Quantum Matter Seminar, Okinawa Institute of Science and Technology (Japan). March 31, 2021.

2020

33. "Anomalous excitation spectra of conventional magnets", Condensed Matter Seminar, University of Tennessee, Knoxville (TN). November 18, 2020.
32. "Anomalous excitation spectra of conventional magnets", Condensed Matter Seminar, Florida State University and High Magnetic Field Laboratory, Tallahassee (FL). October 16, 2020.
31. "Anomalous excitation spectra of conventional magnets", Quantum Matter Seminars, Northeastern University, Boston (MA). September 16, 2020.

2019

30. "Spin Liquids: A dive into exotic magnetic matter", Physics Colloquium, Louisiana State University, Baton Rouge (LA). November 21, 2019.
29. "Nature of magnetic excitations in spin-liquids", Condensed Matter Seminar, University of Colorado, Boulder (CO). November 7, 2019.
28. "Continuous magnetic spectra in absence of quasiparticle fractionalization", Condensed Matter Seminar, University of Tennessee, Knoxville (TN). October 21, 2019.
27. "Spin Liquids: A dive into exotic magnetic matter", Physics Colloquium, Georgia Tech, Atlanta (GA). September 09, 2019.
26. "Nature of magnetic excitations in selected 2D and 3D spin liquids", Solid State Physics Seminar, ETH Zürich (CH). June 03, 2019.
25. "Spin liquids: the New Wave of Magnetism", Physics Colloquium, Emory University, Atlanta (GA). March 26, 2019.
24. "Exotic magnetic matter and the search for spin-liquids", Institute of Quantum Matter Seminar, Johns Hopkins University, Baltimore (MD). March 18, 2019.
23. "Anomalous spin dynamics in triangular quantum antiferromagnets", Condensed Matter Seminar, Texas A&M, College Station (TX). January 18, 2019.

2018

22. "Anomalous spin dynamics in triangular quantum magnets", Condensed Matter Seminar, University of Kentucky (KY). November 13, 2018.
21. "Exotic magnetic matter and the search for spin-liquids", Physics Colloquium, North Carolina State University, Raleigh (NC). September 17, 2018.
20. "Neutron scattering from quantum materials", Quantum Café, Flatiron Institute, Simons Foundation, New York City (US); April 11, 2018.

2017

19. "Spin-liquids in novel triangular and kagome rare-earth magnets", Condensed Matter Seminar, Brookhaven National Laboratory, Upton (US); April 28, 2017.
18. "Triangular and kagome rare-earth magnets: a new route to spin-liquids?", Quantum Matters Seminar, University of Waterloo, Waterloo (CA); April 21, 2017.
17. "Triangular and kagome rare-earth magnets: a new route to spin-liquids?", Brockhouse Institute for Materials Research Seminar, McMaster Univeristy, Hamilton (CA); April 20, 2017.
16. "Spin-liquids in novel triangular and kagome rare-earth magnets", Condensed Matter Seminar, Department of Physics and Astronomy, University of Utah, Salt Lake City (US); February 28, 2017.
15. "Magnetic excitations in spin-liquids: from classical to quantum", Condensed Matter Seminar, Department of Physics and Astronomy, University of California, Irvine (US); January 11, 2017.

2016

14. "Novel spin-liquids in triangular and kagome rare-earth magnets", "Chez Pierre" Seminar, Department of Physics, Massachusetts Institute of Technology, Cambridge (US); December 5, 2016.
13. "Probing the exotic collective behavior of frustrated magnetic matter", Department of Chemistry and Physics, Augusta University, Augusta (US); September 2, 2016.
12. "Using neutron scattering to probe exotic magnetic excitations in quantum materials". Department of Physics, Clark Atlanta University, Atlanta (US). April 14, 2016.

Before 2015 (pre-GT)

11. "Interacting quasiparticles in quantum and frustrated magnets". School of Physics, Georgia Institute of Technology, Atlanta (US). March 13, 2014.
10. "Interacting quasiparticles in quantum and frustrated magnets", "Chez Pierre" Seminar, Department of Physics, Massachusetts Institute of Technology, Cambridge (US). February 12, 2014.
9. "Interacting quasiparticles in quantum and frustrated magnets", Department of Physics and Astronomy, SUNY Stony Brook (US). January 24, 2014.
8. "Counting fractional excitations in quantum and frustrated spin chains", Clarendon Laboratory, Oxford University (UK). January 28, 2013.
7. "Counting fractional magnetic excitations with neutrons", Department of Physics, Rice University, Houston (US). January 16, 2013.
6. "Excitations fractionnaires et effet de la frustration dans les chaines de spins quantiques", Laboratoire Léon Brillouin, Saclay (FR). October 22, 2012.
5. "Neutron Scattering Experiments for Quantum and Frustrated Spin Chain", Kavli Institute for Theoretical Physics, Santa Barbara (US). October 2, 2012.
4. "Neutron scattering from frustrated quantum spin chains", Spallation Neutron Source, Oak Ridge National Laboratory (US). November 10, 2011.
3. "Polarized neutron scattering from model spin-1/2 antiferromagnets", NIST Center for Neutron Research, Gaithersburg (US). February 8, 2011.
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