PRESENTATIONS

INVITED TALKS / COLLOQUIA / SEMINARS

   *Superfluid phase diagrams in the attractive Fermi Hubbard model*

2. 16th National Conference on Magnetism Theories (第十六届全国磁学理论会议), Yangzhou, China, 
   *Superfluid behavior of Fermi gases under arbitrary Zeeman splitting in mixed dimensions*

3. 17th National Conference on Low Temperature Physics (第十七届全国低温物理学术会议), Jinhua, 
   China, June 3-6, 2021. 
   *Suppressing pairing fluctuations using population imbalance in atomic Fermi gases in a 2D optical lattice*

   *Destruction and enhancement of superfluidity: Unusual effects of population imbalance in a continuum-lattice mixed system of atomic Fermi gases*

5. 5th Conference on Condensed Matter Physics, Liyang, Jiangsu, China, June 27-30, 2019. 
   *Enhancement and destruction of superfluidity: Unusual effects of population imbalance of atomic Fermi gases on a 1D optical lattice*

6. Kavli ITS Workshop on “Emergent phenomena in ultracold atoms: Emerging topology, interaction, 
   and dynamics”, Beijing, June 2-23, 2019. 
   *Unusual enhancement of superfluidity by spin imbalance in Fermi gases in 1D optical lattices*

   *Ultra high temperature superfluidity in atomic Fermi gases using mixed dimensionality.*

   *Ultra high temperature superfluidity in atomic Fermi gases using mixed dimensionality.*

9. 12th International Conference on Materials and Mechanism of Superconductivity and High 
   *Two fluid model for diamagnetic susceptibility and Nernst effect in high Tc superconductors.*

10. 12th International Conference on Ceramic Materials Components for Energy and Environmental 
    *Two fluid model for diamagnetic susceptibility and Nernst effect in high Tc superconductors.*

11. 16th National Conference on Low Temperature Physics (第十六届全国低温物理学术会议), Xinxiang, 
    Henan, Apr. 17-20, 2018. 
    *Achieving the highest superfluid transition Tc in atomic Fermi gases using mixed dimensionality.*

    *Exotic superfluidity, pairing phenomena and the search for higher Tc in atomic Fermi gases in mixed dimensions.*

13. Condensed matter theory seminar, Department of Physics, University of Illinois, Urbana, IL , USA, 
    Apr 27, 2017. 
    *Instability of Fulde-Ferrell-Larkin-Ovchinnikov states in three and two dimensions.*

14. 15th National Conference on Low Temperature Physics (第十五届全国低温物理学术会议), Shaoguan, 
    Guangdong, Nov. 16-18, 2016. 
    *BCS-BEC crossover in atomic Fermi gases in mixed dimensions.*

15. Workshop of Quantum Connections at Hangzhou 2016, Wilceck Quantum Center, Hangzhou, Nov. 6-7, 2016. 
    *Instability of Fulde-Ferrell-Larkin-Ovchinnikov states in ultracold atomic Fermi gases.*
Superfluidity, pairing, and other exotic quantum states in ultracold atomic Fermi gases.

17. Physics Department Colloquium/Seminar, South University of Science and Technology of China (南方科技大学), Shenzhen, May 13, 2016.
Superfluidity, pairing, pseudogap and other exotic quantum states in ultracold atomic Fermi gases.

18. 6th Workshop on Quantum Many-Body Computation (第六届量子多体计算会议), Beijing, April 21-24, 2016.
Instability of the Fulde-Ferrell-Larkin-Ovchinnikov states in ultracold atomic Fermi gases in 3D continuum

19. 1\textsuperscript{st} WHU Summer Theory Institute: Frontiers in Condensed Matter and Cold Atoms, Wuhan, June 15 – 26, 2015.
Searching for the Fulde-Ferrell-Larkin-Ovchinnikov states in ultracold atomic Fermi gases in 3D continuum

20. 14\textsuperscript{th} National Conference on Low Temperature Physics (第十四届全国低温物理学术研讨会),
Hangzhou, Mar 31-Apr 4, 2015.
Death of the Fulde-Ferrell-Larkin-Ovchinnikov states in ultracold atomic Fermi gases in 3D continuum

21. 5\textsuperscript{th} School on Frontiers in Theoretical Physics – Frontiers of Cold Atom Physics (第五届理论物理前沿
Pairing, superfluidity, and pseudogap phenomena in ultracold atomic Fermi gases.

Pinning down the location of the Feshbach resonance in atomic Fermi gases: Density and particle-hole fluctuation effects

23. Center for Atom Optics and Ultrafast Spectroscopy, Swinburne University of Technology, Melbourne, Victoria, Australia, Aug. 23, 2013.
Exotic Pairing in Strongly Interacting Ultracold Fermi Gases at High Densities.

24. 7\textsuperscript{th} National workshop for young scholars on cold atom physics and quantum information (第七届全国
Exotic pairing in ultracold Fermi gases at high densities.

Exotic pairing of ultracold Fermi gases with mass imbalance or long range interactions

26. 7\textsuperscript{th} CAS Cross-Trait and International Conference on Quantum Manipulation (第七届海峡两岸及国际
量子调控会议), Beijing, China, Jan 28-30, 2013.
Exotic pairing of ultracold Fermi gases with mass imbalance or long range interactions

27. 3\textsuperscript{rd} International Conference on Quantum Foundation and Technology: Frontier and Future,
Pairing and superfluidity in atomic Fermi gases in the presence of mass and population imbalance.

28. 4\textsuperscript{th} International Workshop on Quantum Condensation, Pohang, Korea, Aug 13-24, 2012.
Zero density limit extrapolation of the superfluid transition temperature in a unitary atomic Fermi gas on a lattice

29. Lecture Series on Theories and Technology of Superconductivity, No. 25, National Key Lab for
Superconductivity, Chinese Academy of Sciences (超导国家重点实验室 超导基础理论和实验技术系列
讲座之二十五), Beijing, China, April 20, 2012.
BCS-BEC crossover theory and its applications in superconductivity and superfluidity

30. Quantum Control Workshop on Ultracold Atoms（超冷原子量子调控研讨会）, Shanghai, China, Apr 6-8, 2012.
Phase diagrams of Fermi gases in a trap with mass and population imbalances at finite temperature.

31. 11\textsuperscript{th} National conference on superconductivity (第十一届全国超导会议), Hangzhou, China, Oct. 31-
Nov. 4, 2011.
Pairing fluctuation theory for the pseudogap phenomena in high Tc superconductivity.
32. 5th National workshop for young scholars on cold atom physics and quantum information (第五届全国冷原子物理和量子信息青年学者学术讨论会), Lanzhou, China, Aug 1-6, 2011. 
Strongly interacting atomic Fermi gases: Superfluidity, pairing, and pseudogap phenomena.

33. 10th International Conference on Condensed Matter Theory and Computational Materials (第十届国际凝聚态理论与计算材料学会议), Jinhua, China, July 13-17, 2011.
Effects of particle-hole channel on BCS-BEC crossover in cold Fermi gases.

34. 3rd International Workshop on Quantum Condensation, QC11, Hong Kong, July 4-15, 2011. 
Effects of particle-hole channel on BCS-BEC crossover in cold Fermi gases.

35. Seventh workshop on Quantum Control (第七届量子调控研讨会), Beijing, Feb 20, 2011.
Superfluidity and pairing in ultracold atomic Fermi gases.

36. Zhejiang Normal University, Department of Physics, Jinhua, Zhejiang, China, Dec 15, 2010.
Superfluidity and pairing in ultracold atomic Fermi gases.

Superfluidity and pairing in ultracold atomic Fermi gases.

Superfluidity and pairing in ultracold atomic Fermi gases.

BCS-BEC crossover in cold atomic Fermi gases. (Tutorial lecture)

Radio frequency spectroscopy in atomic Fermi gases. (Invited talk)
BCS-BEC crossover. (Tutorial Lecture)

Radio frequency spectroscopy in atomic Fermi gases.

42. Chinese Physical Society Fall Meeting (中国物理学会秋季会议), Shanghai, September 17-20, 2009
Pairing fluctuation theory for the protected nodes and the Fermi arcs in the cuprate superconductors.

43. 9th Int'l Conf. Materials and Mechanisms of Superconductivity (M2S-IX), Tokyo, September 7-12, 2009
Superfluidity in atomic Fermi gases with and without population imbalance.

44. Summer Workshop on Quantum Condensation, Asian Pacific Center for Theoretical Physics, Pohang, Korea, August 16-31, 2009.
Superfluidity in atomic Fermi gases

45. 5th Singapore-China Joint Symposium on Research Frontiers in Physics, Singapore, July 22-24, 2009
Superfluidity in atomic Fermi gases.

46. Hong Kong Forum 2008, Quantum Matter and Quantum Simulations, The University of Hong Kong, December 13-15, 2008
Fermionic superfluidity in cold atomic Fermi gases.

47. Max-Planck Institute for Physics of Complex Systems, Quantum Dynamics Seminar, Dresden, Germany, July 9, 2008
Superfluidity in ultracold atomic Fermi gases.

Superfluidity in ultracold atomic Fermi gases.

49. Temple University, Department of Physics Colloquium, May 8, 2007.
Superfluidity in ultracold Fermi gases.
   *The important role of temperature in BCS—Bose-Einstein condensation crossover phenomena with population imbalance.*

51. 5th International Conference of the Stripes, Roma, Italy, Dec 17-22, 2006.
    *Fermionic superfluidity: From high Tc superconductors to ultracold Fermi gases.*

52. Fudan University (复旦大学), Department of Physics, Shanghai, China, Jul 3, 2006.
    *Superfluidity in correlated fermions: From high Tc superconductors to ultracold atomic Fermi gases.*

    *Superfluidity in correlated fermions: From high Tc superconductors to ultracold atomic Fermi gases.*

54. Institute of Physics, Chinese Academy of Sciences (中国科学院物理研究所), Beijing, China, Jun 28, 2006.
    *Superfluidity in correlated fermions: From high Tc superconductors to ultracold atomic Fermi gases.*

55. Zhejiang University (浙江大学), Department of Physics, Hangzhou, China, Jun 16, 2006.
    *Superfluidity in correlated fermions: From high Tc superconductors to ultracold atomic Fermi gases.*

56. Nanjing University (南京大学), Department of Physics, Nanjing, China, Jun 14, 2006.
    *Superfluidity in correlated fermions: From high Tc superconductors to ultracold atomic Fermi gases.*

57. University of Science & Technology of China (中国科学技术大学), Department of Physics, Hefei, China, Jun 12, 2006.
    *Superfluidity in correlated fermions: From high Tc superconductors to ultracold atomic Fermi gases.*

58. Northeastern University, Department of Physics Colloquium, Boston, MA, USA, Feb 10, 2006.
    *Superfluidity in correlated fermions: From high Tc superconductors to ultracold atomic Fermi gases.*

59. University of Michigan, Department of Physics, FOCUS Special Seminar, Ann Arbor, MI, USA, Feb 24, 2005.
    *Superfluidity in correlated fermions: From high Tc superconductors to ultracold atomic Fermi gases.*

60. North Carolina State University, Department of Physics Colloquium, Raleigh, NC, USA, Feb 15, 2005.
    *Superfluidity in correlated fermions: From high Tc superconductors to ultracold atomic Fermi gases*

61. University at Buffalo, SUNY, Department of Physics Colloquium, Buffalo, NY, USA, Feb 3, 2005.
    *Superfluidity in correlated fermions: From high Tc superconductors to ultracold atomic Fermi gases*

62. University of Notre Dame, Department of Physics Seminar, South Bend, IN, USA, Jan 28, 2005.
    *Superfluidity in correlated fermions: From high Tc superconductors to ultracold atomic Fermi gases*

    *Pseudogap from a pseudo-order parameter: Finite center-of-mass momentum state pairing in high Tc superconductors.*

    *Pseudogap from a pseudo-order parameter: Non-time reversal state pairing in high Tc superconductors.*

    *Generalization of BCS theory to short coherence length superconductors.*

66. National Laboratory for Superconductivity, Chinese Academy of Sciences (中国科学院超导国家实验室), Beijing, China, July 1999.
    *Pairing fluctuation theory for small pair superconductors.*
OTHER CONFERENCE PRESENTATIONS

   *Superfluidity of interacting fermions in optical lattices: Interplay of population imbalance, dimensionality, and lattice-continuum mixing.*
   (contributed talk)

68. APS March Meeting, Boston, MA, USA, Mar 4-8, 2019.
   *Enhancement and destruction of superfluidity: Unusual effects of population imbalance of atomic Fermi gases on a 1D optical lattice.*
   (contributed talk)

69. APS March Meeting, Boston, MA, USA, Mar 4-8, 2019.
   *Probing the many-body physics via measurement of the closed-channel fraction in a $^6$Li superfluid.*
   (contributed talk)

70. APS March Meeting, Los Angeles, CA, USA, Mar 5-9, 2018.
   *Achieving higher superfluid transition Tc in atomic Fermi gases using mixed dimensionality.*
   (contributed talk)

71. APS March Meeting, New Orleans, LA, USA, Mar 13-17, 2017.
   *Instability of Fulde-Ferrell-Larkin-Ovchinnikov states in three and two dimensions.*
   (contributed talk)

72. APS March Meeting, Baltimore, MD, USA, Mar 14-18, 2016.
   *Superfluidity and BCS-BEC crossover of ultracold atomic Fermi gases in mixed dimensions.*
   (contributed talk)

73. APS March Meeting, Denver, CO, USA, Mar 2-7, 2014.
   *Theory of BCS-BEC crossover in ultracold atomic Fermi gases in the presence of impurities.*
   (contributed talk)

74. APS March Meeting, Baltimore, MD, USA, Mar 17-22, 2013.
   *Density and particle-hole fluctuation effects on the position of Feshbach resonances in atomic Fermi gases.*
   (contributed talk)

75. APS March Meeting, Baltimore, MD, USA, Mar 17-22, 2013.
   *Superfluidity of atomic Fermi gases with dipolar interactions.*
   (contributed talk)

76. APS March Meeting, Boston, MA, USA, Feb 27-Mar 2, 2012.
   *Superfluid transition temperature and its zero density limit extrapolation in a unitary atomic Fermi gas on a lattice.*
   (contributed talk)

77. APS March Meeting, Boston, MA, USA, Feb 27-Mar 2, 2012.
   *Strongly interacting atomic Fermi gases in a trap with mass and population imbalances at finite temperature.*
   (contributed talk)

78. APS March Meeting, Dallas, TX, USA, March 21-25, 2011.
   *Effects of particle-hole channel on the behavior of BCS-BEC crossover.*
   (contributed talk)

   *Probing the homogeneous spectral function of a trapped atomic Fermi gas using momentum resolved rf spectroscopy.*
   (contributed talk)

80. APS March Meeting, Pittsburg, PA, March 16-20, 2009
   *Probing the spectral function using momentum resolved radio frequency spectroscopy in trapped Fermi gases.*
   (contributed talk)

   *Understanding the protected nodes and collapse of the Fermi arcs in underdoped cuprate superconductors.*
   (contributed talk)
82. APS March Meeting, New Orleans, LA, March 9-13, 2008. (contributed talk) *Understanding the protected nodes and the Fermi arcs in the cuprate superconductors.*

83. APS March Meeting, Baltimore, MD, March 13-17, 2006. (contributed talk) *Understanding the superfluid phase diagram in trapped Fermi gases.*

84. APS March Meeting, Baltimore, MD, March 13-17, 2006. (contributed talk) *Population of closed-channel molecules in trapped Fermi gases with broad Feshbach resonances.*


86. APS March Meeting, Indianapolis, IN, March 18-22, 2002. (contributed talk) *Pairing fluctuation theory of high Tc superconductivity in the presence of nonmagnetic impurities.*


88. APS March Meeting, Seattle, WA, March 12-16, 2001. (contributed talk) *Superconducting phase coherence in the presence of a pseudogap in phase insensitive experiments.*

89. Conference on High Temperature Superconductivity, Institute for Theoretical Physics, University of California, Santa Barbara, August 13-17, 2000. (poster) *Nodal quasiparticles versus phase fluctuations in high Tc superconductors: An intermediate scenario.*


94. APS Centennial Meeting, Atlanta, GA, March 22-26, 1999. (contributed talk) *BCS to Bose-Einstein crossover on a quasi-2D lattice with a d-wave pairing symmetry.*


96. Seventh Annual STCS Graduate Student Workshop, Chicago, IL, April 29, 1998. (contributed talk) *BCS to Bose-Einstein crossover and pseudogap phenomena via resonant pair scattering.*


WORK PRESENTED BY COAUTHORS

98. APS March Meeting, virtual, Mar 15–19, 2021. (contributed talk by Zhiqiang Wang)
Quantum Geometric Contributions to the BKT Transition: Beyond Mean Field Theory.

99. APS March Meeting, virtual, Mar 15–19, 2021. (contributed talk by Rufus Boyack)
   The effect of the pseudogap on thermomagnetic transport in cuprates.

100. APS March Meeting, Denver, CO, USA, Mar 2-6, 2020.
   Unusual superfluid behavior of population imbalanced atomic Fermi gases in a two-dimensional optical lattice. (contributed talk by Lin Sun)

101. APS March Meeting, Denver, CO, USA, Mar 2-6, 2020. (contributed talk by Xiaoyu Wang)
   Strong pairing in two dimensions: Pseudogaps, domes, and other implications.

102. APS March Meeting, Los Angeles, CA, USA, Mar 5-9, 2018. (contributed talk by Rufus Boyack)
   Superfluidity of ultracold atomic gases of Fermi-Fermi mixtures on an optical lattice.

103. APS March Meeting, Los Angeles, CA, USA, Mar 5-9, 2018. (contributed talk by Xiaoyu Wang)
   Hall Effect in Hole-doped Cuprates: Pairing Fluctuations Versus Fermi Surface Reconstruction

104. APS March Meeting, Baltimore, MD, USA, Mar 14-18, 2016. (contributed talk by Jibiao Wang)
   Fulde-Ferrell-Larkin-Ovchinnikov states in Fermi-Fermi mixtures.

105. APS March Meeting, San Antonio, TX, USA, Mar 2-7, 2015. (contributed talk by Jibiao Wang)
   Stability of Fulde-Ferrell-Larkin-Ovchinnikov states in ultracold atomic Fermi gases.

106. APS March Meeting, San Antonio, TX, USA, Mar 2-7, 2015. (contributed talk by Yanming Che)
   Effects of nonmagnetic impurities on BCS-BEC crossover in atomic Fermi gases.

   Fulde-Ferrell-Larkin-Ovchinnikov states in Fermi-Fermi mixtures. (contributed talk by Jibiao Wang)

108. APS March Meeting, Pittsburgh, PA, USA, March 16-20, 2009. (contributed talk, by Yan He)
   Temperature and final state effects in radio frequency spectroscopy experiments on atomic Fermi gases.

109. APS March Meeting, Pittsburgh, PA, USA, March 16-20, 2009. (contributed talk, by Hao Guo)
   Finite temperature effects of Li-40K mixtures in the BCS-BEC crossover.

110. APS March Meeting, Pittsburgh, PA, USA, March 16-20, 2009. (contributed talk, by C.-C. Chien)
   Ultra-cold fermions with attractive interactions in optical lattices.

111. APS March Meeting, New Orleans, LA, March 9-13, 2008. (contributed talk, by Yan He)
   First- and second-sound-like modes at finite temperature in trapped Fermi gases from BCS to BEC.

112. APS March Meeting, New Orleans, LA, March 9-13, 2008. (contributed talk, by Chih-Chun Chien)
   Transport Properties of a Fermi gas with attractive interactions in the BEC-BCS crossover.

113. APS March Meeting, Denver, CO, March 5-9, 2007.
   Single-plane-wave Larkin-Ovchinnikov-Fulde-Ferrell state in BCS--Bose-Einstein condensation crossover. (contributed talk, by Yan He)

114. APS March Meeting, Denver, CO, March 5-9, 2007. (contributed talk, by Chih-Chun Chien)

   Finite Temperature Effects in Ultracold Fermi Gases. (invited talk, by K. Levin)

116. APS March Meeting, Baltimore, MD, March 13-17, 2006. (contributed talk, by Yan He)
   Radio frequency spectroscopy and the pairing gap in trapped Fermi gases.
Ground state description of a single vortex in an atomic Fermi gas: From BCS to Bose-Einstein condensation. (contributed talk, by Chih-Chun Chien)

Density Profiles of Strongly Interacting Trapped Fermi Gases. (contributed talk, by Jelena Stajic)

Theory of Pair-breaking Effects in the Pseudogap Phase. (contributed talk, by Ying-Jer Kao)

Using Scaling Observations of the Superfluid Density to Distinguish Models of the Pseudogap. (contributed talk, by Jelena Stajic)

Using ab-plane AC Conductivity to Distinguish Models of the Pseudogap. (contributed talk, by Andrew P. Iyengar)

Magnetic Field Effects on T and Tc in the Presence of a Pseudogap. (contributed talk, by Andrew P. Iyengar)

A precursor superconductivity approach to magnetic field effects in the pseudogap phase. (contributed talk, by Ying-Jer Kao)

Magnetic field effect in the pseudogap phase: A precursor superconductivity scenario. (contributed talk, by Andrew P. Iyengar)

Origin of the pseudogap phase: Precursor superconductivity versus a competing energy gap scenario. (invited talk, by K. Levin)

Pair Excitations, Collective Modes and Gauge Invariance in the BCS-Bose Einstein Crossover Scenario. (contributed talk, by Ioan Kosztin)

Short coherence length superconductivity: A generalization of BCS theory for the underdoped cuprates. (invited talk, by K. Levin)

Theory of Small Pair Superconductors: Between BCS Theory and Bose Condensation. (contributed talk, by Ioan Kosztin)

What happens below Tc in the pseudogap phase of the cuprates?: A pairing fluctuation scenario and its experimental implications. (invited talk, by Ioan Kosztin)

Pseudogap effects above and below Tc: A resonant pair scattering approach. (contributed talk, by Ioan Kosztin)