Frank Marsiglio

Curriculum Vitae

Mail Addresses

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Department of Physics
University of Alberta
Edmonton, AB T6G 2E1
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(780) 492-1067

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fm3@ualberta.ca

Current Status

Professor of Physics, University of Alberta

Education

B.A.Sc. Engineering Science, University of Toronto, 1979-1983
M.Sc. Physics, McMaster University, 1983-1984
Ph.D. Physics, McMaster University, 1984-1988

Honours and Awards

1983-87 Natural Sciences and Engineering Research Council (NSERC) Scholarships
1983-87 Harry Lyman Hooker Graduate Scholarships
1984-86 Desmond G. Burns Scholarships in Mathematical or Theoretical Physics
1987-88 Desmond G. Burns Scholarships in Mathematical or Theoretical Physics
1988-90 Natural Sciences and Engineering Research Council (NSERC) Postdoctoral Fellowship (La Jolla)
1994-2014 CIfAR (Canadian Institute for Advanced Research) Associate in Superconductivity/Quantum Materials Program
1997 Winter 1997 Distinguished Cave Lecturer, Dept. of Physics, Queen's University
2002-03 McCalla Professor, Faculty of Science, University of Alberta
2005-06 Visiting Professor, University of Geneva
2011-12 McCalla Professor, Faculty of Science, University of Alberta
2012-13 Visiting Professor, University of Camerino
2016 Outstanding Referee, journals of the American Physical Society
2016-17 Faculty of Science Students' Choice Honor Roll (excellence in teaching)
2017-18 AD-LIB (Associate Dean of Learning and Innovation Besties) (teaching award)
2023 Faculty of Science Excellent Teaching Award

Employment History

NSERC Summer Research Assistant at TRIUMF – preliminary estimates for design of neutron-proton spectrometer – Summer, 1982

NSERC Summer Research Assistant at University of Toronto – commensurate-incommensurate transitions in one and two dimensional systems – Summer, 1983

Graduate Work – Strong-coupling Superconductivity – September, 1983 to March, 1988

Postdoctoral Fellowship at University of California, San Diego – High T_c superconductivity – April, 1988 to Aug. 1990

Research Scientist in the Neutron and Condensed Matter Science Branch at Chalk River Laboratories – 1990 to 1997

Adjunct Professor of Physics at McMaster University – 1991 to 1997

Associate Professor of Physics at the University of Alberta – 1997 to 2001

Professor of Physics at the University of Alberta — 2001 to present

Director of the Theoretical Physics Institute at the University of Alberta – 2001 to 2008

Acting Chair of the Department of Physics at the University of Alberta – July 1, 2009 to Dec. 31, 2009

Associate Chair, Research, Department of Physics at the University of Alberta – July 1, 2013 to June 30, 2015

Acting Chair of the Department of Physics at the University of Alberta – July 1, 2015 to June 30, 2016

Associate Chair, Graduate Studies, Department of Physics at the University of Alberta – July 1, 2017 to Sept. 30, 2018

Interim Dean of Science, University of Alberta – Oct. 1, 2018 to June 30, 2019

Grants Information

NSERC Research Grant, 1998-2002 — \$23 562/annum

NSERC Research Grant, 2002-2007 — \$40 000/annum

NSERC Research Grant, 2007-2012 — \$46 950/annum

IIPP equipment grant for multi-processor SGI computer (1998) (primary investigator: J. Schaeffer) — \$320 000.

CFI/IIPP Grant for computer equipment, 1999-2002 — \$10.1 million (primary investigators: J. Schaeffer, B. Unger)

NSERC equipment grant (1998) — \$ 10 500.

ASRA (Alberta Science and Research Authority) Grant for Atom Manipulation Facility (Phase 1) — \$ 425 000. (primary investigator: M. Freeman)

Nanoscale Engineering Physics Initiative (ICORE, Alberta) — \$ 250 000 per year (2001-2006) (renewed, 2007-2012) (PI: M. Freeman)

NSERC Research Grant, 2012-2016 — $20 000/annum

iCiNano (ICORE, Alberta) — $ 300 000 per year (2012-2015) (PI: Frank Hegmann)

McCalla Award Fund, 2011-2012 — $32 000

Teaching and Learning Enhancement Fund, 2012-2013 — $39 000 NSERC Research Grant, 2016-present — $25 000/annum

NSERC Research Grant, 2021-present — $50 000/annum

Citations

The total number of citations of my papers (as of February, 2023) is 6439 (h-index = 45) Google Scholar Citations.

Graduate Students and Post-Doctoral Fellows Supervised

Bill Minor (PhD) 1992 - 1996 (McMaster)

Kamran Kaveh (MSc) 1997 - 1999

Simona Verga (PhD) 1999 - 2005

Lucian Covaci (PhD) 2000 - 2006

Fatih Dogan (MSc) 2000 - 2002

Fatih Dogan (PhD) 2002 - 2009

Paul Moffatt (MSc) 2002 - 2004 (co-supervised with P.N. Roy, Chemistry)

Giang Bach (PhD) 2006 - 2011

Zhou Li (PhD) 2007 - 2012

Chris Polachic (PhD) 2009 - 2014

Carl Chandler (MSc-PhD) 2011 - 2016

Robert Lee Pavelich (MSc) 2014 - 2016

Anas Othman (MSc) 2014 - 2015 (co-sup. with Marc de Montigny, Faculte St. Jean)

Joel Hutchinson (PhD) 2015 - 2019 (co-supervised with Joseph Maciejko)

Majid Kheirkhah (PhD) 2016 - 2021

Mason Protter (MSc) 2017 - 2019

Mason Protter (Phd) 2019 - present (co-supervised with Joseph Maciejko)

Sepideh Mirabi (MSc) May, 2018 - 2020

Pramodh Senarath Yapa Arachchige (PhD) January, 2019 - present (co-supervised with Joseph Maciejko)

Ted Hsu (PostDoc) 1991-1993 (Chalk River Labs.)

Kaori Tanaka (PostDoc) 1998-2000

Anton Knigavko (PostDoc) 2000-2002

Wonkee Kim (PostDoc) 2002-2007

Aditya Raghavan (PostDoc) 2009-2011 (co-supervised with Kevin Beach)

Reza Nourafkan (PostDoc) 2010-2011

Shu-Ping Lee (PostDoc) 2015-2017 (co-supervised with Joseph Maciejko)

Rufus Boyack (PostDoc) 2017-present (co-supervised with Joseph Maciejko)

Undergraduate Students Supervised

Marcin Sawicki (1991) (Chalk River Labs.)

Mark Madsen (2000)

Matthew Dowling (2005)

Cindy Blois (NSERC) (2006)

Gerry Leenders (NSERC) (2007)

Devin Baillie (2007)

Cindy Blois (2007)

Devin Baillie (2008) co-supervised with F. Hegmann and R. Sydora

Marc Baker (2009)

Melle Buruma (NSERC) (2009) co-supervised with F. Hegmann

Carl Chandler (NSERC) (2010)

Carl Chandler (NSERC) (2011)

Joel Hutchinson (499, winter, 2012)

Jelic Vedran (TLEF) (2012)

Bernadine Jugdutt (TLEF) (2012)

Will Stacey (TLEF) (2012)

Jeff Maki (NSERC, TLEF) (2013)

Lindsay Forestell (TLEF) (2014)

Krishan Saraswat (TLEF) (2014)

Dylan Grandmont (TLEF) (2014)

Tyler Dauphinee (TLEF) (2014)

Robert Lee Pavelich (TLEF) (2014)

Ketty Na (NSERC, iCinano) (2015)

Christian Prosko (NSERC, iCinano) (2015)

Michael Staelens (iCinano) (2015)

Collin Tittle (499) (2015)

Noel Hoffer (499) (2015)

Kameron Palmer (iCinano + 499) (2015)

Harrison Varley (499) (2016)

Connor Stephens (NSERC USRA) (2017)

Alexander Ibrahim (Physics Dept. USRA) (2017)

Gavin Forcade (499) (2018)

Sophie Taylor (NSERC USRA) (2018)

Xinyuan Xu (Physics Dept. USRA) (2018)

Puyuan Liu (2018)

Daniel Cresta (Physics Dept. USRA) (2018)

Hao (Jack) Chen (NSERC USRA) (2018)

Asadullah Bhuiyan (Physics Dept. USRA) January-April 2019

Aparajit Gnanasekaran (499) (2019)

Thanh Nguyen (recipient of Canada-ASEAN Scholarships and Educational Exchanges for Development (SEED)) 2018-2019 (internship for 8 months)

Asadullah Bhuiyan (NSERC USRA) May - Aug 2020

Dhananjhay Bansal (Physics Dept. SUPRE USRA) May - Aug 2020

Aneca Su (Physics Dept. NSERC USRA) May - Aug 2021

Ashaduzzaman Joy (Physics Dept. SUPRE USRA) May - Aug 2021

Nico Schiavone (NSERC USRA) May - Aug 2021

Asadullah Bhuiyan (Physics Dept. SUPRE USRA) May - Aug 2021

Roger Felix ALcantara-Tangonan (NSERC USRA) May - Aug 2022

Sean Chen (NSERC USRA) May - Aug 2022

Bassam Nima (SUPRE USRA) May - Aug 2023

Kyle Turpin (SUPRE USRA) May - Aug 2023

Xinyu Guo (SUPRE USRA) May - Aug 2023

Courses Taught at Univ. of Alberta

Fall 1997: Phys 646 (6 students) Condensed Matter II

Winter 1998: Phys 413 (5 students) Statistical Physics II

Winter 1998: Phys 417 (5 students) (25 %) Condensed Matter II

Fall 1998: Phys 541 (2 students) Condensed Matter I

Winter 1999: Phys 413 (5 students) Statistical Physics II

Winter 1999: Phys 417 (5 students) Condensed Matter II

Fall 1999: Phys 130 (112 students) Wave Motion, Optics, and Sound

Winter 2000: Phys 543 (5 students) Condensed Matter II

Winter 2000: Phys 417 (5 students) Condensed Matter II

Fall 2000: Phys 130 (105 students) Wave Motion, Optics, and Sound

Winter 2001: Phys 543 (5 students) Condensed Matter II

Winter 2001: Phys 417 (4 students) Condensed Matter II

Fall 2003: Phys 130 (134 students) Wave Motion, Optics, and Sound

Fall 2003: Phys 646 (6 students) Quantum Materials

Fall 2004: Phys 130 (185 students) Wave Motion, Optics, and Sound

Winter 2005: Phys 541 (3 students) Condensed Matter I

Fall 2005/Spring 2006: Sabbatical

Fall 2006: Phys 472 (21 students) Quantum Mechanics II

Winter 2007: Phys 372 (48 students) Quantum Mechanics I

Fall 2007: Phys 472 (15 students) Quantum Mechanics II

Winter 2008: Phys 372 (56 students) Quantum Mechanics I

Fall 2008: Phys 472 (16 students) Quantum Mechanics II

Winter 2009: Phys 372 (45 students) Quantum Mechanics I

Winter 2010: Phys 543 (9 students) Condensed Matter II

Fall 2010: Phys 541 (2 students) Condensed Matter I

Winter 2011: Phys 646 (2 students) Superconductivity

Fall 2011: Phys 472 (23 students) Quantum Mechanics II

Fall 2012/Spring 2013: Superconductivity (graduate course taught in Camerino while on Sabbatical)

Fall 2013: Phys 472 (28 students) Quantum Mechanics II

Winter 2014: Phys 372 (49 students) Quantum Mechanics I

Fall 2014: Phys 472 (24 students) Quantum Mechanics II

Winter 2014: Phys 543 (5 students) Condensed Matter II

Winter 2015: Phys 372 (56 students) Quantum Mechanics I

Fall 2015: Phys 472 (30 students) Quantum Mechanics II

Fall 2016: Graduate Condensed Matter Physics (graduate course at Perimeter Institute, Waterloo)

Winter 2016: Phys 372 (44 students) Quantum Mechanics I

Winter 2017: Phys 372 (38 students) Quantum Mechanics I

Winter 2018: Phys 372 (52 students) Quantum Mechanics I

Winter 2018: Phys 543 (5 students) Condensed Matter II

Winter 2020: Math 146 (131 students) Calculus II

Fall 2020: Phys 472 (21 students) Quantum Mechanics II

Fall 2021: Phys 472 (27 students) Quantum Mechanics II

Fall 2022: Phys 472 (36 students) Quantum Mechanics II

Fall 2022: Phys 415 (40 students) Introduction to Condensed Matter Physics

Fall 2023: Phys 472 (24 students) Quantum Mechanics II

Fall 2023: Phys 415 (16 students) Introduction to Condensed Matter Physics

Winter 2024: Phys 541 (10 students) Condensed Matter I

SERVICE

University of Alberta

1997-99 Member, Computing Committee

1998-00 Member, Graduate Advisory Committee, Graduate Admissions Committee

1998-99 Member, Advisory Selection Committee for Gravitational Physics Faculty Position

1999-00 Member, Advisory Selection Committee for Theoretical Particle Physics Faculty Position

1999-01 Coordinator for Theoretical Physics Institute Seminars

2000-01 Member, Hiring Selection Committee for Subatomic Physics Faculty Position

2000-01 Member, Hiring Selection Committee for Condensed Matter (CMP) Physics Faculty Position

2000-01 Physics Colloquium Organizer

2000-01 Physics Chair Selection Committee

2000-02 Elected member of Faculty of Science FEC (Faculty Evaluation Committee)

2001-02 Member, CRC Chair Selection Committee for Condensed Matter (CMP) Physics Faculty Position

2001-02 Member, CRC Chair Selection Committee for Space Physics Faculty Position

2001-08 Director of Theoretical Physics Institute

2003-08, Dept. of Physics Executive Committee, Chair Selection Committee (03), Avadh Bhatia Selection Committee, Killam Selection Committee, Co-organizer of Umezawa Distinguished Visitor Series

2004-05 Condensed Matter Physics Focus Area Coordinator

2006-07 CMP Theory Search Committee, Physics APO Search Committee, McCalla Selection Committee

2006-09 member of General Faculties Council (GFC)

2007-08 Member of CRC renewal committee

2007-08 Member of Advisory Selection Committee

2007-08 GAC (General Appeals Committee) member

2008-10 Graduate Affairs Committee, Killam pdf selection committee, Avadh Bhatia selection committee, co-organizer of CMP Lunchtime seminars

2008-15 member of President's Review Committee (3 FEC's in Enginnering, + 3 FEC's in Physical Education and Recreation (now Faculty of Kinesiology, Sport, and Recreation), plus sub-committee assignments

2009 Acting Chair, Department of Physics (July 1 - Dec. 31)

2010-12 Graduate Affairs and Curriculum Committee

2010-15 Chair of Tenure Committee (started in Dept. of Physics)

2011-12 Hiring Selection Committee for Astrophysics Faculty Position

2012-13 Hiring Selection Committee for CMP Faculty Position

2013-15 Associate Chair of Research, July 1, 2013-June 30, 2015 (cut short by request to be Acting Chair)

2014-15 Physics Chair Review Committee

2014 Judge, student presentations at the annual Physics Graduate Student Symposium, Sept. 26, 2014

2014-15 Selection committee for graduate student NSERC applications

2014-15 Chair, Killam PDF Selection Committee

2014-15 Member, CMP Theory Search Committee

2015-16 Acting Chair, July 1, 2015 — June 30, 2016

2016-17 Chair, CMP Theory Search Committee

2016-18 Undergraduate Curriculum Committee

2016-18 NSERC USRA/SUPRE selection committee

2016-17 Undergraduate Laboratories Committee

2016-17 Selection Committee for Award for Graduate Student Mentoring (Faculty)

2017-18 Associate Chair of Graduate Studies (cut short by request fo be Interim Dean)

2017-18 Chair, Graduate Affairs and Curriculum Committee

2017-18 Chair, Graduate Admissions Committee (Chair)

2017-18 Member, physics recruitment committee

2017-18 Chair, Graduate Awards and Scholarships Committee

2017-18 Focus Area Coordinator for Condensed Matter Physics

2017-18 CRC Renewal Committee

2017-18 Member, FGSR Council

2017-18 Member, PRC Committee (Emeritus)

2017-18 Prepared and wrote the self-assessment document for the Physics Graduate Program Review

2020- Member, Teaching and Learning Committee, Faculty of Science

2020- Member, Teaching and Learning Committee, Faculty of Science

Scientific

2003-05 Alberta Councillor and 'Friend' for Canadian Association of Physics,

2002-07 Member of TRIUMF Materials Science Experiments Evaluation Committee

2003-07 Member of the Executive, American Physical Society, Northwest Section

2003 Member of committee to review the CAMTEC (Centre for Advanced Materials and Related Technology) Facility, University of Victoria

2008 CAP judge for graduate student poster presentations at June 08 congress (Quebec City)

2010-14 Review panel for CINT (Center for Integrated Nanotechnologies) (Los Alamos)

2010-12 Scientific committee for the European Materials Research Society

Refereeing throughout, for journal publications, including Nature, Nature series, Science, PNAS, Phys. Rev. Lett. Phys. Rev. B, plus many others.

Referee for research proposals (NSERC, NSF, etc.), for promotion and tenure, for Society Fellowships, etc.

2015 Co-editor of a Special Issue of Physica C, Superconducting Materials: Conventional, Unconventional and Undetermined, with JE Hirsch and MB Maple.

2016-present Associate Editor for Scientific Reports

2016 Reviewed Department of Physics, Brock University

2020- Nanotechnology Initiative Review Panel

Conferences Organized and Co-organized

2000 Co-organizer of TPI Symposium

2001 Co-organizer of Banff Workshop on Inhomogeneous Systems and High T_c Superconductors

2002 Co-organizer of APSNW (American Physical Society Northwest Section) Annual Conference, Banff, AB

2002 Chair, organizing committee for annual TPI Symposium

2003 Co-organizer of TPI Symposium at BIRS (Banff International Research Station)

2004 Organizer of TPI Symposium at BIRS, September 2004

2007 Co-organizer and host of Theory Canada III Conference, Univ. of Alberta

2008 Co-organizer of Graphene Canada '08 international conference, Banff, AB

2015 Co-organizer of Canadian Association of Physicists Annual Congress, Edmonton, AB

F. MARSIGLIO

Refereed Journal Publications

1. Rippled Commensurate State: A Possible New Type of Incommensurate State
   A.E. Jacobs, C. Grein, and F. Marsiglio
   Phys. Rev. B**29**, 4179-4181 (1984).
2. Functional Derivative of the Specific-Heat Difference Near T_c for Superconductors
   F. Marsiglio and J.P. Carbotte,
   Phys. Rev. B**31**, 4192-4198 (1985).
3. Maximum $2\Delta_0/T_c$ for Electron-Phonon Superconductors
   J.P. Carbotte, F. Marsiglio, and B. Mitrovic
   Phys. Rev. B**33**, 6135-6140 (1986).
4. Strong-Coupling Corrections to Bardeen-Cooper-Schrieffer Ratios
   F. Marsiglio and J.P. Carbotte
   Phys. Rev. B**33**, 6141-6146 (1986).
5. Specific Heat Difference Functional Derivative Within Strong Coupling Theory
   F. Marsiglio, J.P. Carbotte, and E. Schachinger
   J. Low Temp. Phys. **65**, 305-324 (1986).
6. Toxen Relation for the Energy Gap
   F. Marsiglio, J.M. Coombes, and J.P. Carbotte
   Phys. Rev. B**35**, 3219-3225 (1987).
7. Dependence of the Upper Critical Field on the Spectral Density for Arbitrary Impurity Concentrations
   F. Marsiglio, M. Schossmann, E. Schachinger, and J.P. Carbotte
   Phys. Rev. B**35**, 3226-3237 (1987).
8. On Spinodals and Catastrophes
   F. Marsiglio and F.D. Manchester
   Phys. Lett. A**123**, 79-81 (1987).
9. Eliashberg Theory and the High T_c Oxides
   F. Marsiglio and J.P. Carbotte
   Solid State Commun. **63**, 419-423 (1987).
10. Thermodynamic and Other Properties of La-Sr-Cu-O
    M. Schossmann, F. Marsiglio, and J.P. Carbotte
    Phys. Rev. B**36**, 3627-3632 (1987).
11. Upper Critical Field for a High T_c Electron-Phonon Superconductor: Regime of $T_c/\omega_{\ln} = 1$
    F. Marsiglio and J.P. Carbotte
    Phys. Rev. B**36**, 3633-3637 (1987).
12. Thermodynamic and Other Properties of a High T_c Excitonic Superconductor
    F. Marsiglio and J.P. Carbotte

Phys. Rev. B**36**, 3937-3940 (1987).

13. Thermodynamics in Very Strong Coupling: A Possible Model for the High T_c Oxides
F. Marsiglio, R. Akis and J.P. Carbotte
Phys. Rev. B**36**, 5245-5250 (1987).

14. Combined Phonon-Exciton Mechanism in $La_{2-x}Sr_xCuO_4$
F. Marsiglio, R. Akis, and J.P. Carbotte
Solid State Commun. **64**, 905-910 (1987).

15. Iterative Analytic Continuation of the Electron Self-Energy to the Real Axis
F. Marsiglio, M. Schossmann, and J.P. Carbotte
Phys. Rev. B**37**, 4965-4969 (1988).

16. Ginzburg-Landau Parameter in the Very Strong Coupling Regime $T_c/\omega_{\ln} \approx 1$
F. Marsiglio and J.P. Carbotte
Solid State Commun. **65**, 1175-1178 (1988).

17. Upper Bound on Strong Coupling Corrections to the Second Upper Critical Field
R. Akis, F. Marsiglio, E. Schachinger, and J.P. Carbotte
Phys. Rev. B**37**, 9318-9324 (1988).

18. Penetration of a Magnetic Field in a High T_c Superconductor
J. Blezius, R. Akis, F. Marsiglio, and J.P. Carbotte
Phys. Rev. B**38**, 179-184 (1988).

19. Slope of Specific-Heat Jump at T_c in a Very Strong Coupling Superconductor
R. Akis, F. Marsiglio, and J.P. Carbotte
Phys. Rev. B **39**, 2722-2725 (1989).

20. Tunneling Inversion with an Excitonic Contribution
F. Marsiglio and J.P. Carbotte
Phys. Rev. B **39**, 2726-2728 (1989).

21. Asymptotic Limit for the Thermodynamics of a Boson-Exchange Superconductor
F. Marsiglio, P.J. Williams, and J.P. Carbotte
Phys. Rev. B **39**, 9595-9597 (1989).

22. The Superconducting State in an Oxygen Hole Metal
J.E. Hirsch and F. Marsiglio
Phys. Rev. B **39**, 11515-11525 (1989).

23. Tunneling Asymmetry: A Test of Superconductivity Mechanisms
F. Marsiglio and J.E. Hirsch
Physica C**159**, 157-160 (1989).

24. On the Dependence of Superconducting T_c on Carrier Concentration
J.E. Hirsch and F. Marsiglio
Phys. Lett. A**140**, 122-126 (1989).

25. Eliashberg Theory of Superconductivity with Repulsive Coulomb Enhancement
F. Marsiglio
Physica C**160**, 305-313 (1989).

26. Superconductivity in an Oxygen Hole Metal
J.E. Hirsch and F. Marsiglio
Phys. Rev. B**41**, 2049-2051 (1990).

27. Superconductivity in Oxides: From Strong to Weak Coupling
F. Marsiglio and J.E. Hirsch
Physica C**165**, 71-76 (1990).

28. Asymptotic Limit for H_{c2} in Eliashberg Theory
F. Marsiglio, J.P. Carbotte, and P.J. Williams
Phys. Rev. B**41**, 4484-4488 (1990).

29. Dependence of Some Electromagnetic Properties of Superconductors on Coupling Strength
F. Marsiglio, J.P. Carbotte, and J. Blezius
Phys. Rev. B**41**, 6457-6465 (1990).

30. Hole Superconductivity and the High T_c Oxides
F. Marsiglio and J.E. Hirsch
Phys. Rev. B**41**, 6435-6456 (1990).

31. Dependence of the Second Upper Critical Field on Coupling Strength
F. Marsiglio and J.P. Carbotte
Phys. Rev. B**41**, 8765-8771 (1990).

32. Asymptotic Limits for the Penetration Depth of Strong-Coupling Superconductors
F. Marsiglio and J.P. Carbotte
Phys. Rev. B**41**, 11114-11119 (1990).

33. Pairing and Charge-Density-Wave Correlations in the Holstein Model at Half-Filling
F. Marsiglio
Phys. Rev. B**42**, 2416-2424 (1990).

34. Hole Superconductivity in the Dilute Limit
F. Marsiglio and J.E. Hirsch
Physica C**171**, 554-560 (1990).

35. Prediction for the Change in Lattice Constants of Electron-Doped High T_c Superconductors under Hydrostatic Pressure based on Observed Pressure Dependence of T_c
J.E. Hirsch and F. Marsiglio
Physica C**172**, 265-266 (1990).

36. Hole Superconductivity in Oxides: A Two-Band Model
J.E. Hirsch and F. Marsiglio
Phys. Rev. B**43**, 424-434 (1991).

37. Gap Function and Density of States in the Strong Coupling Limit for an Electron-Boson System
F. Marsiglio and J.P. Carbotte
Phys. Rev. B**43**, 5355-5363 (1991).

38. Spectral Function of a Single Hole in a 2D Quantum Antiferromagnet

F. Marsiglio, A.E. Ruckenstein, S. Schmitt-Rink, and C.M. Varma
Phys. Rev. B**43**, 10882-10889 (1991).

39. Coherence Effects in Electromagnetic Absorption in Superconductors
F. Marsiglio
Phys. Rev. B**44**, 5373-5376 (1991).

40. Coherence Effects in Hole Superconductivity
F. Marsiglio and J.E. Hirsch
Phys. Rev. B**44**, 11960-11970 (1991).

41. Dependence of T_c on Normal and Magnetic Impurities in the Hole Mechanism of Superconductivity
F. Marsiglio
Phys. Rev. B**45**, 956-965 (1992).

42. The London Penetration Depth in Hole Superconductivity
J.E. Hirsch and F. Marsiglio
Phys. Rev. B**45**, 4807-4818 (1992).

43. Phonon Self-Energy Effects Due to Superconductivity: A Real Axis Formulation
F. Marsiglio, R. Akis and J.P. Carbotte
Phys. Rev. B**45**, 9865-9871 (1992).

44. Normal State Properties of High T_c Oxides
J.E. Hirsch and F. Marsiglio
Physica C**195**, 355-366 (1992).

45. Eliashberg Theory of the Critical Temperature and the Isotope Effect: Dependence on Bandwidth, Bandfilling, and Direct Coulomb Repulsion
F. Marsiglio
J. Low Temperature Physics **87**, 659-682 (1992).

46. Enhancement of Self-Energy Effects of Phonons with Finite Wave Vectors Due to Fermi-surface Nesting
F. Marsiglio
Phys. Rev. B**47**, 5419-5427 (1993).

47. Influence of Superconductivity on the Magnetic Dynamics of High-T_c Superconductors
F. Marsiglio
Phys. Rev. B**47**, 11555-11558 (1993).

48. The Spectral Function of a One-Dimensional Holstein Polaron
F. Marsiglio
Phys. Lett. A**180**, 280-284 (1993).

49. Superconductivity from Retarded Interactions in the Presence of Electron-hole Asymmetry
F. Marsiglio and J.E. Hirsch
Phys. Rev. B**49**, 1366-1375 (1994).

50. Eliashberg Treatment of the Microwave Conductivity of Niobium

F. Marsiglio, J.P. Carbotte, R. Akis, D. Achkir and M. Poirier
Phys. Rev. B**50**, 7203-7206 (1994).

51. Effects of Multiple Scattering and Wavelength-dependent Attenuation on Strain Measurements by Neutron Scattering
T.C. Hsu, F. Marsiglio, J.H. Root, and T.M. Holden
Journal of Neutron Research, **3**, 27-39 (1995).

52. Pairing in the Holstein Model in the Dilute Limit
F. Marsiglio
Physica C**244**, 21-34 (1995).

53. Signatures of the Electron-Phonon Interaction in the Far-Infrared
F. Marsiglio and J.P. Carbotte
Phys. Rev. B**52**, 16192-16198 (1995).

54. The Imaginary Part of the Optical Conductivity of $Ba_{1-x}K_xBiO_3$
F. Marsiglio, J.P. Carbotte, A. Puchkov and T. Timusk
Phys. Rev. B**53**, 9433-9441 (1996).

55. Review of High Temperature Superconductivity
F. Marsiglio
AECL Report, 220 pages (1996).

56. Comment on "Integrable Chain of Electrons Interacting with Phonons"
F. Marsiglio
Pis'ma Zh. Eksp. Teor. Fiz. **64**, 859-860 (1996); JETP Lett. **64**, 917-918 (1996).

57. Evaluation of the BCS approximation for the attractive Hubbard model in one dimension
F. Marsiglio
Phys. Rev. B**55**, 575-582 (1997).

58. Electron-phonon Mass Enhancement and Lifetime at Finite Temperature
F. Marsiglio
Phys. Rev. B**55**, 6674-6677 (1997).

59. Aspects of Optical Properties in Conventional and Oxide Superconductors
F. Marsiglio and J.P. Carbotte
Aust. J. Phys. **50**, 975-1009 (1997).

60. Quasiparticle Lifetimes and the Conductivity Scattering Rate
F. Marsiglio and J.P. Carbotte
Aust. J. Phys. **50**, 1010-1033 (1997).

61. On Scattering Rates Extracted from the Optical Conductivity
F. Marsiglio and J.P. Carbotte
Can. J. Phys. **75**, 509-516 (1997).

62. Effect of suppression of the inelastic scattering rate on the penetration depth and conductivity in a $d_{x^2-y^2}$ superconductor
E. Schachinger, J.P. Carbotte and F. Marsiglio

Phys. Rev. B**56**, 2738-2750 (1997).

63. Neutron Diffraction for Industry: Optimized Processing, Failure Analysis and Regulations
J.H. Root, P. Wanjara, S. Yue, R. Drew, A. Oddy, M. McDill, F. Marsiglio and R.W.L. Fong
Physica B **241-243**, 1181-1188 (1998).

64. Inversion of K_3C_{60} Reflectance Data
F. Marsiglio, T. Startseva and J.P. Carbotte
Phys. Lett. A**245**, 172-176 (1998).

65. Inversion of Optical Conductivity Data in Metals
F. Marsiglio
Journal of Superconductivity **12** 163-167 (1999).

66. Even-odd and super-even effects in the attractive Hubbard model
K. Tanaka and F. Marsiglio
Phys. Rev. B**60**, 3508-3526 (1999).

67. Self-Consistent Treatment of Dynamical Correlation Functions Using a Spectral Representation Technique
M. Letz and F. Marsiglio
J. Low Temp. Phys. **117**, 149-173 (1999).

68. Reliable Padé analytical continuation method based on a high-accuracy symbolic computation algorithm
K.S.D. Beach, R.J. Gooding and F. Marsiglio
Phys. Rev. B**61**, 5147-5157 (2000).

69. Where is 99% of the condensation energy of $Tl_2Ba_2CuO_y$ coming from?
J.E. Hirsch and F. Marsiglio
Physica C **331**, 150-154 (2000).

70. Possible electronic shell structure of nanoscale superconductors
K. Tanaka and F. Marsiglio
Phys. Lett. A **265** 133-138 (2000).

71. The Anderson prescription for surfaces and impurities
K. Tanaka and F. Marsiglio
Phys. Rev. B**62** 5345-5348 (2000).

72. Optical sum rule violation, superfluid weight and condensation energy in the cuprates
J.E. Hirsch and F. Marsiglio
Phys. Rev. B**62** 15131-15150 (2000).

73. Feedback effects and the self-consistent Thouless criterion line of the two-dimensional attractive Hubbard model
K.S.D. Beach, R.J. Gooding, and F. Marsiglio
Phys. Lett. **A** 282, 319-324, (2001).

74. Electron-Phonon or Hole Superconductivity in MgB_2?

J. E. Hirsch and F. Marsiglio
Phys. Rev B.**64** 144523-1-8 (2001).

75. Constraints from T_c and the isotope effect for MgB_2
A. Knigavko and F. Marsiglio
Phys. Rev. B**64**, 172513-1-4 (2001).

76. Implications of reflectance measurements on the mechanism for superconductivity in MgB_2
F. Marsiglio
Physical Review Letters **87**, 247001-1-4 (2001).

77. Constraints on the mechanism for MgB_2 from T_c and the isotope effect
A. Knigavko and F. Marsiglio
J. Phys. Chem. of Solids **63**, 2325-2328 (2002).

78. On a sum rule for the optical scattering rates
F. Marsiglio, J.P. Carbotte, and E. Schachinger
Phys. Rev. B**65**, 014515-1-10 (2002).

79. Microscopic study of inhomogeneous superconductors
K. Tanaka and F. Marsiglio
J. Phys. Chem. of Solids **63**, 2287-2293 (2002).

80. Spin Wave Response in the Dilute Quasi-one Dimensional Ising-like Antiferromagnet $CsCo_{0.83}Mg_{0.17}Br_3$
Y. S. Yang, F. Marsiglio, M. Madsen, B. D. Gaulin, R. B. Rogge, and J. A. Fernandez-Baca
Physical Review B**65**, 212408-1-4 (2002).

81. Superconductivity in $Ba_2Sn_3Sb_6$ and $SrSn_3Sb_4$
L. Deakin, R. Lam, F. Marsiglio, and A. Mar
Journal of Alloys and Compounds **388**, 69-72 (2002).

82. S-wave superconductivity near a surface
K. Tanaka and F. Marsiglio
Physica C**384**, 356 - 368 (2003).

83. Marsiglio Replies
F. Marsiglio
Physical Review Letters **89**, 129704 (2002).

84. Inversion of ARPES measurements in high T_c cuprates
S. Verga, A. Knigavko and F. Marsiglio
Physical Review B**67**, 054503-1-5 (2003).

85. Self-Consistent Modification To The Electron Density Of States Due To Electron-Phonon Coupling In Metals
F. Dogan and F. Marsiglio
Physical Review B**68**, 165102-1-8, (2003).

86. Low-temperature thermal conductivity of high-purity $YBa_2Cu_3O_{6.99}$ in the vortex

state: Analysis with arbitrary impurity scattering strength
Wonkee Kim, F. Marsiglio, and J. P. Carbotte
Physical Review B**68**, 174513-1-5 (2003).

87. Dynamic Hubbard model: Effect of finite boson frequency
F. Marsiglio, R. Teshima, and J. E. Hirsch
Physical Review B**68**, 224507-1-7 (2003)

88. Spin torque and its relation to spin filtering
Wonkee Kim and F. Marsiglio
Phys. Rev. B 69, 212406 (2004).

89. Demonstration of a robust pseudogap in a three-dimensional correlated electronic system
R.J. Gooding, F. Marsiglio, S. Verga, and K.S.D. Beach
J. Low Temp. Phys. **136**, 191 (2004).

90. Microwave conductivity of a high-purity d-wave superconductor
Wonkee Kim, F. Marsiglio, and J. P. Carbotte
Physical Review B**70**, 060505(R) (2004).

91. Optical sum increase due to electron undressing
A. Knigavko, J.P. Carbotte, and F. Marsiglio
Physical Review B**70**, 224501 (2004).

92. Transport in Vortex State of d-Wave Superconductors at Zero Temperature: Weidemann-Franz Violation
Wonkee Kim, F. Marsiglio, and J. P. Carbotte
Journal of Superconductivity **17**, 725 (2004).

93. How many electrons are needed to flip a local spin?
Wonkee Kim, R.K. Teshima, F. Marsiglio
Europhysics Letters **69**, 595 (2005).

94. Minimally self-consistent T-matrix approximation to describe the low-temperature properties of the Hubbard model in the atomic limit.
S. Verga, R.J. Gooding, and F. Marsiglio
Phys. Rev. B **71** 155111, (2005).

95. Observation of phonon structure in electron density of states of a normal metal.
A. Knigavko, J.P. Carbotte, and F. Marsiglio
Europhysics Letters **71**, 776 (2005).

96. Proximity effect and Josephson current in clean strong/weak/strong superconducting trilayers
L. Covaci and F. Marsiglio
Phys. Rev. B **73** 014503 (2006).

97. Off-Fermi surface cancellation effects in spin-Hall conductivity of a two-dimensional Rashba electron gas
C. Grimaldi, E. Cappelluti, and F. Marsiglio

Phys. Rev. B **73** 081303 (2006) (Rapid Communication)

98. Sum rule anomaly from suppression of inelastic scattering in the superconducting state
F. Marsiglio
Phys. Rev. B **73** 064507 (2006); see also 099904

99. Hidden symmetries of electronic transport in a disordered one-dimensional lattice
W. Kim, L. Covaci, and F. Marsiglio
Phys. Rev. B**73**, 195109 (2006).

100. Electron-Phonon vs. Electron-Impurity Interactions with Small Electron Bandwidths
F. Dogan and F. Marsiglio
J. Superconductivity and Novel Magnetism **20**, 225-232 (2007).

101. Spin transfer in ferromagnetic systems
W. Kim and F. Marsiglio
Canadian J. Physics, **84**, 507 (2006).

102. Spin-hall conductivity in electron-phonon coupled systems
C. Grimaldi, E. Cappelluti, and F. Marsiglio
Physical Review Letters **97**, 066601 (2006).

103. Doping dependence of the redistribution of optical spectral weight in $Bi_2Sr_2CaCu_2O_{8+\delta}$
F. Carbone, A.B. Kuzmenko, H.J.A. Molegraaf, E. van Heumen, V. Lukovac, F. Marsiglio, D. van der Marel, K. Haule, G. Kotliar, H. Berger, S. Courjault, P.H. Kes, and M. Li,
Phys. Rev. B **74**, 064510 (2006).

104. Temperature Dependence of the Conductivity Sum Rule in the Normal State due to Inelastic Scattering
L. Benfatto, J.P. Carbotte, and F. Marsiglio
Phys. Rev. B**74**, 155115 (2006).

105. Intraband Optical Spectral Weight in the presence of a van Hove singularity: application to $Bi_2Sr_2CaCu_2O_{8+\delta}$
F. Marsiglio, F. Carbone, A.B. Kuzmenko, and D. van der Marel
Phys. Rev. B**74**, 174516 (2006).

106. Impurity Scattering of Wave Packets on a Lattice
Wonkee Kim, L. Covaci, and F. Marsiglio
Phys. Rev. B **74**, 205120 (2006).

107. Optical properties and electronic structure of ZrB_{12}
J. Teyssier, A.B. Kuzmenko, D. van der Marel, F. Marsiglio, V. Filippov, and N. Shitsevalova
Phys. Rev. B 75, 134503 (2007).

108. Model-independent sum rule analysis based on limited-range spectral data
A.B. Kuzmenko, D. van der Marel, F. Carbone, and F. Marsiglio
New J. Phys. 9 (2007) 229.

109. Topological Change of the Fermi Surface in Low Density Rashba Gases: Application to Superconductivity
E. Cappeluti, C. Grimaldi, and F. Marsiglio
Phys. Rev. Lett. 98, 167002 (2007).

110. Quantum mechanics of spin transfer in coupled electron-spin chains
W. Kim, L. Covaci, F. Dogan, and F. Marsiglio
Europhysics Letters **79**, 67004 (2007).

111. Electron-phonon effects on spin-orbit split bands of two dimensional systems
E. Cappelluti, C. Grimaldi, and F. Marsiglio
Physical Review B**76**, 085334 (2007).

112. Impact of a finite cut-off for the optical sum rule in the superconducting state
F. Marsiglio, E. van Heumen, and A. B. Kuzmenko
Phys. Rev. B**77**, 144510 (2008).

113. Electron and spin transport in the presence of a complex absorbing potential
Fatih Dogan, Wonkee Kim, C. M. Blois, and F. Marsiglio
Phys. Rev. B**77**, 195107-1-11 (2008).

114. Hall Conductivity of a Spin-Triplet Superconductor
Wonkee Kim, F. Marsiglio, and C.S. Ting
Phys. Rev. Lett. **100**, 227003 (2008).

115. Hole superconductivity in arsenic-iron compounds
F. Marsiglio and J.E. Hirsch
Physica C**468**, 1047-1052 (2008).

116. Geometrical effects in the energy transfer mechanism for silicon nanocrystals and Er3+
K. Choy, F. Lenz, X.X. Liang, F. Marsiglio and A. Meldrum
Applied Physics Letters **93**, 261109 (2008).

117. The harmonic oscillator in quantum mechanics: A third way
F. Marsiglio
American Journal of Physics **77**, 253-258 (2009).

118. Optical Sum Rule Anomalies in the High-Tc Cuprates
F. Marsiglio
J. Superconductivity and Novel Magnetism **22**, 269-273 (2009).

119. Superconductivity in lithium under high pressure investigated with density functional and Eliashberg theory
Y.S. Yao, J.S. Tse, K. Tanaka, F. Marsiglio, and Y. Ma
Phys. Rev. B**79**, 054524 (2009).

120. Emerging nonequilibrium bound state in spin-current-local-spin scattering
F. Dogan, L. Covaci, W. Kim, and F. Marsiglio
Phys. Rev. B**80**, 104434 (2009).

121. Ground-state properties of the Holstein model near the adiabatic limit
Zhou Li, D. Baillie, C. Blois, and F. Marsiglio

Phys. Rev. B**81**, 115114 (2010).

122. Modification of ensemble emission rates and luminescence spectra for inhomogeneously broadened distributions of quantum dots coupled to optical microcavities
A. Meldrum, P. Bianucci, and F. Marsiglio
Optics Express **18**, 10230 (2010).

123. Metallic surface of a bipolaronic insulator
R. Nourafkan, F. Marsiglio, and M. Capone
Phys. Rev. B **82**, 115127 (2010).

124. Two-site dynamical mean field theory for the dynamic Hubbard model
G.H. Bach, J.E. Hirsch, and F. Marsiglio
Phys. Rev. B **82**, 155122 (2010).

125. Perturbation theory of the mass enhancement for a polaron coupled to acoustic phonons
Z. Li, C.J. Chandler, and F. Marsiglio
Phys. Rev. B **83**, 045104 (2011).

126. The static electric polarizability of a particle bound by a finite potential well
M.A. Maize, M.A. Antonacci, and F. Marsiglio
American Journal of Physics **79**, 222 (2011).

127. Electron-hole asymmetry in the Dynamic Hubbard model
G.H. Bach and F. Marsiglio
J. Superconductivity and Novel Magnetism **24**, 1571-1575, (2011).

128. Impact of spin-orbit coupling on the Holstein polaron
Zhou Li, L. Covaci, M. Berciu, D. Baillie, and F. Marsiglio
Phys. Rev. B**83**, 195104 (2011).

129. Surface effects in doping a Mott insulator
Reza Nourafkan and Frank Marsiglio
Phys. Rev. B**83**, 155116 (2011).

130. Microcavity effects in ensembles of silicon quantum dots coupled to high-Q resonators
P. Bianucci, Y.Y. Zhi, F. Marsiglio, J. Silverstone, and A. Meldrum
Physica Status Solidi A**208**, 639 (2011).

131. Competition between reduced delocalization and charge transfer effects for a two-band Hubbard model
R. Nourafkan and F. Marsiglio
Phys. Rev. B**84**, 075133 (2011).

132. 'Conventional' Superconductivity: A Critical Assessment
F. Marsiglio
Physics in Canada **67**,71 (2011).

133. Impact of Dresselhaus versus Rashba spin-orbit coupling on the Holstein polaron
Zhou Li, L. Covaci and F. Marsiglio
Phys. Rev. B**85**, 205112 (2012).

134. The Polaron-Like Nature of an Electron Coupled to Phonons
Zhou Li and F. Marsiglio
JOURNAL OF SUPERCONDUCTIVITY AND NOVEL MAGNETISM **25**, 1313 (2012).

135. Model of the Electron-Phonon Interaction and Optical Conductivity of $Ba_{1-x}K_xBiO_3$ Superconductors
R. Nourafkan, F. Marsiglio and G. Kotliar
Phys. Rev. Lett. **109** 017001 (2012)

136. The superconducting (BCS) pairing instability in the thermodynamic limit
F. Marsiglio, K.S.D. Beach, and R.J. Gooding
Can. J. Phys. **90**, 889 (2012)

137. The double well potential in quantum mechanics: a simple, numerically exact formulation
V. Jelic and F. Marsiglio
Eur. J. Phys. **33** 1651 (2012).

138. Optical conductivity for a dimer in the dynamic Hubbard model
G.H. Bach and F. Marsiglio
Phys. Rev. B**85**, 155134 (2012).

139. Why is the ground-state electron configuration for lithium 1s(2)2s?
W. Stacey and F. Marsiglio
Europhysics Letters **100**, 43002 (2012).

140. The spectral decomposition of the helium atom two-electron configuration in terms of hydrogenic orbitals
Joel Hutchinson, Marc Baker and F. Marsiglio
Eur. J. Phys. **34** 111 (2013).

141. Solving for three-dimensional central potentials using numerical matrix methods
B.A. Jugdutt and F. Marsiglio
Am. J. Phys. **81**, 343 (2013).

142. Vanishing of interband light absorption in a persistent spin helix state
Zhou Li, F. Marsiglio, and J.P. Carbotte
Scientific Reports **3**, 2828 (2013).

143. Extended versus standard Holstein model: Results in two and three dimensions
C.J. Chandler and F. Marsiglio
Phys. Rev. B**90**, 125131 (2014).

144. BLF-SSH polarons coupled to acoustic phonons in the adiabatic limit
C.J. Chandler and F. Marsiglio
Phys. Rev. B**90**, 245149 (2014).

145. Capillary-Type Microfluidic Sensors Based on Optical Whispering Gallery Mode Resonances
A. Meldrum and F. Marsiglio
Reviews in nanoscience and nanotechnology **3**, 193-209 (2014).

146. Pairing effects in the normal phase of a two-dimensional Fermi gas
F. Marsiglio, P. Pieri, A. Perali, F. Palestini, and G.C. Strinati
Phys. Rev. B**91** 054509 (2015).

147. Refractometric sensitivity and thermal stabilization of fluorescent core microcapillary sensors: theory and experiment
S. Lane, F. Marsiglio, Y. Zhi, and A. Meldrum
Applied Optics **54**, 1331-1340 (2015).

148. On the number of bound states in some three-parameter s-wave central potentials
A.A. Othman, M. de Montigny, and F. Marsiglio
European Journal of Physics **36**, 025015

149. Hole superconductivity in H_2S and other sulfides under high pressure
J.E. Hirsch and F. Marsiglio
Physica C **511**, 45-49 (2015).

150. The importance of basis states: an example using the hydrogen basis
Lindsay Forestell and Frank Marsiglio
Canadian Journal of Physics **91**, 1-6 (2015).

151. Superconductivity in the elements, alloys and simple compounds
G.W. Webb, F. Marsiglio, and J.E. Hirsch
Physica C **514**, 17-27 (2015).
Special Issue on Superconducting Materials: Conventional, Unconventional, and Undetermined, edited by J.E. Hirsch, M.B. Maple and F. Marsiglio.

152. Superconducting materials classes: Introduction and overview
J.E. Hirsch, M.B. Maple, and F. Marsiglio
Physica C **514**, 1-8 (2015).
Special Issue on Superconducting Materials: Conventional, Unconventional, and Undetermined, edited by J.E. Hirsch, M.B. Maple and F. Marsiglio.

153. The Kronig-Penney model extended to arbitrary potentials via numerical matrix mechanics
R. L. Pavelich and F. Marsiglio
Am. J. Phys. **83**, 773-781 (2015).

154. Asymmetric wave functions from tiny perturbations
T. Dauphinee and F. Marsiglio
Am. J. Phys. **83**, 861-866 (2015).

155. The effect of next-nearest neighbour hopping in the one, two, and three dimensional Holstein model
Carl J. Chandler, Christian Prosko and F. Marsiglio
Scientific Reports **6**, 23591-1-9 (2016).

156. Calculation of 2D electronic band structure using matrix mechanics
R.L. Pavelich and F. Marsiglio
American Journal of Physics 84 (5), 924-935 (2016).

157. Systematic study of the superconducting critical temperature in two-and three-dimensional tight-binding models: A possible scenario for superconducting H_3S
T.X.R. Souza and F. Marsiglio
Physical Review B**94**, 184509 (2016).

158. The Coulomb potential in quantum mechanics revisited
A.A. Othman, M. de Montigny, and F. Marsiglio
American Journal of Physics 85 (5), 346-351 (2017).

159. Fractional Josephson effect in nonuniformly strained graphene
S.P. Lee, D. Nandi, F. Marsiglio, and J. Maciejko
Phys. Rev. B95, 174517, 2017.

160. Two and three particles interacting in a one-dimensional trap
MengXing Na and F. Marsiglio
American Journal of Physics 85 (10), 769-782 (2017).

161. The possible role of van Hove singularities in the high T_c of superconducting H_3S.
T.X.R. Souza and F. Marsiglio
International Journal of Modern Physics B31, 1745003, (2017).

162. Microscopic Origin of the Drude-Smith model
T.L. Cocker, D. Baillie, M. Buruma, L.V. Titova, R.D. Sydora, F. Marsiglio and F.A. Hegmann

Phys. Rev. B95, 205439, (2017).

163. The tight-binding formulation of the Kronig-Penney model
F. Marsiglio and R.L. Pavelich
Scientific Reports **7**, 17041 (2017).

164. Double Well Potentials with a quantum moat barrier or a quantum well barrier give rise to similar entangled wave functions
A. Ibrahim and F. Marsiglio
American Journal of Physics 86 (3), 180-185 (2018).

165. Enhancement of superconducting T_c due to the spin-orbit interaction
J. Hutchinson, J.E. Hirsch and F. Marsiglio
Phys. Rev. **B97**, 184513 (2018).

166. Eliashberg Theory in the Weak Coupling Limit
F. Marsiglio
Phys. Rev. **B98**, 024523 (2018).

167. Reappraising the Luminescence Lifetime Distributions in Silicon Nanocrystals
M. Jakob, A. Aissiou, W. Morrish, F. Marsiglio, M. Islam, A. Kartouzian, and A. Meldrum
Nanoscale Research Letters 13:383, 1-12 (2018).

168. The effect of strong electron-rattling phonon coupling on some superconducting properties
S. Tajik, B. Mitrović, and F. Marsiglio
Can. J. Phys. **97**, 472-476 (2019). (see arXiv:1807.04658).

169. Understanding electron-doped cuprate superconductors as hole superconductors
J.E. Hirsch and F. Marsiglio
Physica C **564**, 29-37 (2019).

170. Hole superconductivity in infinite-layer nickelates
J.E. Hirsch and F. Marsiglio
Physica C **566**, 1353534-1-3 (2019).

171. Eliashberg theory in the weak-coupling limit: Results on the real frequency axis
Sepideh Mirabi, Rufus Boyack and F. Marsiglio

Phys. Rev. B **101**, 064506-1-9 (2020).

172. Majorana corner flat bands in two-dimensional second-order topological superconductors
Majid Kheirkhah, Yuki Nagai, Chun Chen and F. Marsiglio
Phys. Rev. B **101**, 104502-1-9 (2020).

173. Eliashberg theory: A short review
F. Marsiglio
Annals of Physics bf 417, 168102-1-23 (2020).

174. First- and Second-Order Topological Superconductivity and Temperature-Driven Topological Phase Transitions in the Extended Hubbard Model with Spin-Orbit Coupling
Majid Kheirkhah, Zhongbo Yan, Yuki Nagai and F. Marsiglio
Phys. Rev. Lett. **125**, 017001-1-8 (2020) (+5 pages supplementary material).

175. Numerical and Analytical Study of the Bound States of the Potential
TX Nguyen, F Marsiglio
American Journal of Physics **88**, 746-752 (2020).

177. Landau Level, Edge States, and Gauge Choice in 2D Quantum Dots
Asadullah Bhuiyan and Frank Marsiglio
American Journal of Physics **88**, 986-1005 (2020).

178. Edge localized Schrodinger cat states in finite lattices via periodic driving
Asadullah Bhuiyan and Frank Marsiglio
Phys. Rev. B **102**, 245302-1-14 (2020).

179. Thermodynamics of Eliashberg theory in the weak-coupling limit
Sepideh Mirabi, Rufus Boyack and Frank Marsiglio
Phys. Rev. B **102**, 214505-1-6 (2020).

180. Mixed temperature-dependent order parameters in the extended Hubbard model
Joel Hutchinson and Frank Marsiglio
J. Physics-Condensed Matter **33**, 065603-1-11 (2021).

181. The relation between the effective band mass in a solid and the free electron mass
G. Forcade, D. van Paridon, R.L. Pavelich and F. Marsiglio
European Journal of Physics 42, 025408-1-19 (2021).

182. Nonstandard superconductivity or no superconductivity in hydrides under high pressure
J. E. Hirsch and F. Marsiglio
Phys. Rev. B **103**, 134505-1-12 (2021)

183. Vortex-line topology in iron-based superconductors with and without second-order topology
Majid Kheirkhah, Zhongbo Yan, and Frank Marsiglio
Phys. Rev. B **103**, L140502-1-8 (2021)
+15 pages Supplementary Material.

184. Absence of magnetic evidence for superconductivity in hydrides under high pressure
J.E. Hirsch and F. Marsiglio
Physica C - Superconductivity and its Applications. **584**, 1353866-1-7 (2021).

185. Functional-Integral approach to Gaussian fluctuations in Eliashberg theory
Mason Protter, Rufus Boyack, and Frank Marsiglio
Phys. Rev. B **104**, 014513-1-10 (2021)

186. Meissner Effect in nonstandard superconductors
J.E. Hirsch and F. Marsiglio
Physica C - Superconductivity and its Applications. **587**, 1353896-1-4 (2021).

187. Scattering problems via real-time wave packet scattering
M. Staelens and F. Marsiglio
American Journal of Physics **89**, 693-701 (2021).

188. The bound-state solutions of the one-dimensional hydrogen atom
R. Boyack and F. Marsiglio
American Journal of Physics **89**, 418-425 (2021).

189. Unusual width of the superconducting transition in a hydride
J.E. Hirsch and F. Marsiglio
Nature **596**, E9-E10 (2021).

190. Flux trapping in superconducting hydrides under pressure
J.E. Hirsch and F. Marsiglio
Physica C - Superconductivity and its Applications. **589**, 1353916-1-6 (2021).

191. A quantum moat barrier, realized with a finite square well
A. Ibrahim and F. Marsiglio

Canadian Journal of Physics 99, 1035-1041 (2021).

192. Clear evidence against superconductivity in hydrides under high pressure
JE Hirsch and F Marsiglio
Matter and Radiation at Extremes 7 (5), 058401 (2022)

193. Absence of evidence of superconductivity in sulfur hydride in optical reflectance experiments
JE Hirsch, F Marsiglio
Nature Physics 18 (9), 1033-1035 (2022)

194. Evidence against superconductivity in flux trapping experiments on hydrides under high pressure
JE Hirsch, F Marsiglio
Journal of Superconductivity and Novel Magnetism 35 (11), 3141-3145 (2022)

195. The bound-state solutions of the one-dimensional pseudoharmonic oscillator
R Boyack, A Bhuiyan, A Su, F Marsiglio
Journal of Mathematical Chemistry, 1-35 (2023)

196. A wave packet approach to resonant scattering
AM Michalik, F Marsiglio
American Journal of Physics 91 (2), 102-109 (2023).

197. Coupled microbeads for unidirectional cascade lasing transfer
Z Zhang, W Morrish, L Wang, H Gao, X Liu, Y Yang, F Marsiglio, and Alkiviathes Meldrum
Optics & Laser Technology 158, 108832-1-8 (2023).

198. Electrical conductivity and nuclear magnetic resonance relaxation rate of Eliashberg superconductors in the weak-coupling limit
R Boyack, S Mirabi, F Marsiglio
Communications Physics 6 (1), 54 (2023).

199. On magnetic field screening and expulsion in hydride superconductors
JE Hirsch, F Marsiglio
Journal of Superconductivity and Novel Magnetism 36 (4), 1257-1261, 2023.

200. On magnetic field screening and trapping in hydrogen-rich high-temperature superconductors: unpulling the wool over readers eyes
JE Hirsch, F Marsiglio

Journal of Superconductivity and Novel Magnetism 36 (10), 1813-1820.

201. Investigation of Floquet engineered non-Abelian geometric phase for holonomic quantum computing
Logan W Cooke, Arina Tashchilina, Mason Protter, Joseph Lindon, Tian Ooi, Frank Marsiglio, Joseph Maciejko, Lindsay J LeBlanc
Physical Review Research 6 (1), 013057, 2024

202. Further analysis of flux trapping experiments on hydrides under high pressure
JE Hirsch, F Marsiglio
Physica C: Superconductivity and its Applications 620, 1354500, 2024.

203. Erratum: Nonstandard superconductivity or no superconductivity in hydrides under high pressure [Phys. Rev. B 103, 134505 (2021)]
JE Hirsch, F Marsiglio
Physical Review B 110 (1), 019904, 2024.

204. Reply to Comment on Nonstandard superconductivity or no superconductivity in hydrides under high pressure'"
JE Hirsch, F Marsiglio
Physical Review B 110 (18), 186502, 2024

205. The modified airy function approximation applied to the double-well potential
N Wine, J Achtymichuk, F Marsiglio
AIP Advances 15 (3) (2025)

206. On Trapped Flux in a Small Crystal of CaKFeAs and Implications for High-Pressure Hydrides
JE Hirsch, F Marsiglio
Journal of Superconductivity and Novel Magnetism 38 (2), 115, 2025.

207. Mixed-symmetry superconductivity and the energy gap
PS Yapa, X Guo, J Maciejko, F Marsiglio
Physica C: Superconductivity and its Applications 633, 1354719, 2025.

Refereed Conference Proceedings and Book Chapters

1. Properties of High T_c Phonon-Exciton Superconductors
F. Marsiglio and J.P. Carbotte
In *High Temperature Superconductivity*, eds. S.M. Bose and S.D. Tyagi (Singapore: World Scientific, 1988). pp. 277-281.

2. Combined Phonon-Exciton Mechanism for $La_{1.85}Sr_{0.15}CuO_4$
   F. Marsiglio, R. Akis, and J.P. Carbotte
   Physica C **153-155**, 227-228 (1988).
3. Optimum Spectra for Superconducting Properties
   R. Akis, F. Marsiglio, E. Schachinger, and J.P. Carbotte
   Physica C **153-155**, 225-226 (1988).
4. Eliashberg Theory in the Very Strong Coupling Regime
   F. Marsiglio, R. Akis, and J.P. Carbotte
   Physica C **153-155**, 223-224 (1988).
5. Boson Exchange Mechanisms, Bounds and Asymptotic Limits
   J.P. Carbotte and F. Marsiglio
   In *Studies of High Temperature Superconductors*, ed. A.V. Narlikar (New York: Nova Science Publishers Inc., 1989), pp. 64-115.
6. Hole Superconductivity: Review and Some New Results
   J.E. Hirsch and F. Marsiglio
   M^2S-*HTSC Conf. Proc.* Physica C**162-164**, 591-596 (1989).
7. BCS Theory of Hole Superconductivity: Quasi Two-Dimensional Model
   F. Marsiglio and J.E. Hirsch
   M^2S-*HTSC Conf. Proc.* Physica C**162-164**, 1451-1452 (1989).
8. Monte Carlo Evaluation of Migdal-Eliashberg Theory in Two Dimensions
   F. Marsiglio
   M^2S-*HTSC Conf. Proc.* Physica C**162-164**, 1453-1454 (1989).
9. Some Results for Asymptotic Limits in Eliashberg Theory
   F. Marsiglio, P. Williams, and J.P. Carbotte
   M^2S-*HTSC Conf. Proc.* Physica C**162-164**, 1493-1494 (1989).
10. Phonon Self-Energy Effects in Migdal-Eliashberg Theory
    F. Marsiglio
    Proc. of Symp. on Manifestations of the Electron-Phonon Interaction in CuO and Related Superconductors; Mexico City, 1990 Dec. 11-15, (Singapore, World Scientific, 1991) pp. 167-175.
11. Experimental Predictions of the Hole Mechanism of Superconductivity
    F. Marsiglio
    Proc. of The XII Winter Meeting on Low Temperature Physics, Superconducting Ceramics ed. by J.L. Heiras, L.E.Sansores, and A.A.Valladares, (Singapore, World Scientific, 1991) pp. 129-139.
12. Coherence Effects in High-T_c Oxides
    F. Marsiglio
    M^2S-*HTSC Conf. Proc.* Physica C**185-189**, 1675-1676 (1991).
13. Influence of Nesting on the Superconductivity-Induced Phonon Self-Energy
    F. Marsiglio
    Lattice Effects in High-T_c Superconductors, edited by Y. Bar-Yam, T. Egami, J.

Mustre-de Leon, and A.R. Bishop (World Scientific, Singapore, 1992)157-162.

14. Superconductivity from Electron-Phonon Interactions in the Absence of Electron-hole Symmetry
F. Marsiglio and J.E. Hirsch
Physica B**199& 200**, 338-340 (1994).

15. Polaron Properties of the Holstein Model
F. Marsiglio
In *Recent Progress in Many Body Physics*, eds. E. Schachinger, H. Mitter and H. Sormann (Plenum Press, New York 1995), pp.423-432.

16. Measurement and Variability of Residual Stresses in Weaved Repair Welds
A.S. Oddy, J.H. Root, J.E.M. Braid, F. Marsiglio and M. McDill
Trends in Welding Research - Proceedings 5th International Conference, 1998, pp. 925-930.

17. Predicting Residual Stresses in weaved Repair Welds
A.S. Oddy, M. McDill, J.E.M. Braid, J.H. Root and F. Marsiglio
Trends in Welding Research - Proceedings 5th International Conference, 1998, pp. 931-936.

18. Inversion of Optical Reflectance in the Fullerenes
F. Marsiglio
Molecular Physics Reports **24** 73 - 83 (1999).

19. Canonical BCS Approximation for the Attractive Hubbard Model
K. Tanaka and F. Marsiglio
AIP Conference Proceedings, *High Temperature Superconductivity*, ed. S.E. Barnes, J. Ashkenazi, J.L. Cohn, and F. Zuo (Coral Gables, 1999) 126 - 129.

20. New Solutions of the T-Matrix Theory of the Attractive Hubbard Model
K.S.D. Beach, R.J. Gooding, and F. Marsiglio
Physica C **341-348** 897-898 (2000), (6th International Conference on Materials and Mechanisms of Superconductivity, Houston, February 2000).

21. Anisotropic penetration depth and optical sum rule violation in $\mathrm{La}_(2-x)\mathrm{Sr}_x\mathrm{CuO}_4$
F. Marsiglio and J.E. Hirsch
Physica C **341-348** 2217-2218 (2000), (6th International Conference on Materials and Mechanisms of Superconductivity, Houston, February 2000).

22. Fixed Number and Quantum Size Effects in Nanoscale Superconductors
K. Tanaka and F. Marsiglio
Physica C **341-348** 277-278 (2000), (6th International Conference on Materials and Mechanisms of Superconductivity, Houston, February 2000).

23. Anderson's "Theorem" and Bogoliubov-de Gennes Equations for Surfaces and Impurities
K. Tanaka and F. Marsiglio
Physica C **341-348** 179-180 (2000), (6th International Conference on Materials and Mechanisms of Superconductivity, Houston, February 2000).

24. Electron-Phonon Superconductivity
    F. Marsiglio and J.P. Carbotte
    Review Chapter in 'The Physics of Conventional and Unconventional Superconductors' edited by K.H. Bennemann and J.B. Ketterson (Springer-Verlag), pp. 233-345 (2003). See also cond-mat/0106143. 123 pages, including 40 figures, cond-mat/0106143 (2001). Updated version in 'Superconductivity, Conventional and Unconventional Superconductors, Volume 1', edited by K.H. Bennemann and J.B. Ketterson (Springer-Verlag, Berlin, 2008), pp 73-162.
25. Vortex lattice structures in tetragonal BCS superconductors due to Fermi surface anisotropy
    A. Knigavko and F. Marsiglio
    Physica C **388-389** 675-676 (2003).
26. Properties of vortex crystals in BCS superconductors by means of the expansion in the "distance" from the Hc2(T) line
    A. Knigavko and F. Marsiglio
    J. Low Temp. Phys. **131**, 975-978 (2003).
27. Wiedemann-Franz violation in the vortex state of a d-wave superconductor
    Wonkee Kim, F. Marsiglio, and J.P. Carbotte
    Physica C **408-410** 707-708 (2004).
28. Phenomenology of the anomaly in the conductivity sum rule below Tc
    Frank Marsiglio
    Physica C **460-462** 902-903, (2007).
29. Special Issue on Superconducting Materials: Conventional, Unconventional, and Undetermined
    edited by J.E. Hirsch, M.B. Maple, and F. Marsiglio
    Physica C **514**, 1-443 (2015).

FRANK MARSIGLIO – Invited Lectures [1990 -]

HOLE SUPERCONDUCTIVITY AND PSEUDOPOTENTIALS

Invited talk at the Summer Institute for Theoretical Physics: *"Pairing in Condensed Matter and Nuclear Physics: High T_c Workshop",* Queen's University, Kingston, 1990 July 16-22

SUPERCONDUCTIVITY: A SPACE AND TIME EFFECT

Colloquium given at McGill University, Montreal, 1990 October 1

PHONON SELF-ENERGY EFFECTS IN MIGDAL-ELIASHBERG THEORY

Invited talk at the Symposium on the Manifestations of the Electron-Phonon Interaction in CuO and Related Superconductors, Oaxtepec, Mexico, 1990 December 11-14

PHONON SELF-ENERGY EFFECTS IN MIGDAL-ELIASHBERG THEORY

Invited talk at the conference on *"Applications of Quantum Monte Carlo and Molecular Dynamics Method to Condensed Matter Systems",* University of California, Davis, 1990 December 20-21

EXPERIMENTAL PREDICTIONS OF THE HOLE MECHANISM OF SUPERCONDUCTIVITY

Invited talk given at the XII Winter Meeting on Low Temperature Physics, Morelos, Mexico, 1991 Jan. 15

COMPETITION BETWEEN SUPERCONDUCTIVITY AND CHARGE DENSITY WAVE INSTABILITIES IN A $2-D$ ELECTRON-PHONON MODEL

Colloquium given at the University of Toronto, Toronto, 1991 March 4

SUPERCONDUCTIVITY *vs.* CHARGE DENSITY WAVE INSTABILITIES IN THE HOLSTEIN MODEL

Colloquium given at McMaster University, Hamilton, 1991 April 10

CONVENTIONAL SUPERCONDUCTIVITY: IS THE INTERACTION ELECTRON-PHONON?

Lecture given at the CRL Workshop on *"The Art of Neutron Scattering",* 1991 June 11

HIGH$-Tc$ SUPERCONDUCTIVITY: ISSUES, QUESTIONS AND POSSIBLY ANSWERS

Lecture given at the CRL Workshop on *"The Art of Neutron Scattering",* 1992 June 11

COMPETING INSTABILITIES: SUPERCONDUCTIVITY *vs.* CHARGE DENSITY WAVES IN A $2-D$ ELECTRON-PHONON MODEL

Colloquium given at the Physics Department, University of Manitoba, 1991 October 23

INFLUENCE OF NESTING ON THE SUPERCONDUCTIVITY-INDUCED PHONON SELF-ENERGY AT FINITE WAVE VECTOR

Invited talk given at *"Lattice Effects in High$-Tc$ Superconductors"* Conference,

Santa Fe, 1992 January 13

SUPERCONDUCTIVITY-INDUCED PHONON SELF-ENERGY EFFECTS IN THE HIGH$-Tc$ OXIDES

Invited talk given at meeting for the CIAR program in Superconductivity, Vancouver, 1992 January 18

COMPETING INSTABILITIES: SUPERCONDUCTIVITY *vs.* CHARGE DENSITY WAVES IN A $2-D$ ELECTRON-PHONON MODEL

Colloquium given at Simon Fraser University, 1992 February 13

SUPERCONDUCTIVITY AND NEUTRON SCATTERING

Invited talk given at the Neutron Scattering Summer School, CRL, 1992 June 11

PHONON SHIFTS IN RAMAN AND INELASTIC NEUTRON SCATTERING IN HIGH T_c COMPOUNDS

Invited talk given at the CAP Meeting, Windsor, 1992 June 14

NEUTRON SCATTERING: A PROBE OF SUPERCONDUCTIVITY

Physics Colloquium given at Brock University, 1992 Sept. 17

WHAT CAN NEUTRON SCATTERING TELL US ABOUT THE SUPERCONDUCTING STATE IN THE HIGH T_C OXIDES ?

Physics Colloquium given at McGill University, 1992 Oct. 15

NEUTRON SCATTERING: A PROBE OF THE FERMI SURFACE AND THE SUPERCONDUCTIVITY GAP SYMMETRY

Physics Colloquium given at University of Sherbrooke, 1992 Oct. 16

SUPERCONDUCTIVITY: AN INTRODUCTION + NEUTRON SCATTERING

F. Marsiglio

Seminar given at CRL, Nov. 30, 1992.

SYMMETRY OF THE COOPER PAIRS IN HIGH TEMPERATURE SUPERCONDUCTIVITY: D-WAVE OR S-WAVE ?

F. Marsiglio

Seminar given at CRL, Nov. 15, 1993.

WHAT IS A POLARON ?

F. Marsiglio

Seminar given at CRL, Jan. 24, 1994.

EXACT CALCULATIONS FOR THE HOLSTEIN POLARON

F. Marsiglio

Seminar given at the *Workshop on Strongly Correlated Exotic Materials: Organic, Heavy Fermions and High Temperature Superconductors* Queen's University, Jun. 6, 1994.

ELECTRON-PHONON INTERACTIONS IN HIGH-T_c: PROGRESS REPORT ON THE HOLSTEIN MODEL

F. Marsiglio

Invited talk given at the **VIIIth International Conference on Recent Progress in Many-Body Theories**, Schloss Seggau, Austria, Aug. 25, 1994.

CLUSTER STUDIES OF THE HOLSTEIN MODEL

F. Marsiglio

Invited talk given at the Workshop of the Institute for Scientific Exchange, Torino, Italy, Sep. 29, 1994.

TOWARDS A PHASE DIAGRAM FOR THE HOLSTEIN MODEL

F. Marsiglio

Invited talk given at **Euroconference on: Cross-over Phenomena in Solid State Physics**, Torino, Italy, Oct. 4, 1994.

THE HOLSTEIN MODEL OF THE ELECTRON-ION INTERACTION

F. Marsiglio

Seminar at CRL, Oct. 31, 1994.

EXACT CALCULATIONS FOR THE ENHANCED-HOLE HOPPING MODEL

F. Marsiglio

Seminar given at the CIAR meeting, McGill University, Jan. 27, 1995.

IS $Ba_{1-x}K_xBiO_3$ A CONVENTIONAL ELECTRON-PHONON SUPERCONDUCTOR ?

F. Marsiglio

Condensed Matter Seminar given at Argonne National Laboratories, Apr. 23, 1996.

ARE THE SUPERCONDUCTING FULLERENES DRIVEN BY THE ELECTRON-PHONON INTERACTION ?

F. Marsiglio

Physics Colloquium given at University of Alberta, Mar. 7, 1997

PEROVSKITE SUPERCONDUCTIVITY

F. Marsiglio

Physics Colloquium given at University of Alberta, Apr. 25, 1997

ARE THE SUPERCONDUCTING FULLERENES DRIVEN BY THE ELECTRON-PHONON INTERACTION ?

F. Marsiglio

Physics Colloquium given at UMIST, May 1, 1997

ARE THE SUPERCONDUCTING FULLERENES DRIVEN BY THE ELECTRON-PHONON INTERACTION ?

F. Marsiglio

Physics Colloquium given at University of Missouri, Columbia, May 7, 1997

INVERSION OF OPTICAL CONDUCTIVITY IN METALS

F. Marsiglio

Invited Talk given in Erice: Polarons: Condensation, Pairing, Magnetism, June 1998.

INVERSION OF OPTICAL CONDUCTIVITY IN THE FULLERENES

F. Marsiglio

Invited Talk given at the XXII School of Theoretical Physics, Ustroń '98:

Quantum Coherence in Superconductors and Nanostructures, Sep. 15, 1998.

INTRODUCTION TO THE ANALYTIC CONTINUATION PROBLEM, AND ONE RESOLUTION

F. Marsiglio

Invited Talk at Mini Workshop on Recent Progress in Studying a Paradigm: Theoretical Treatments of the Hubbard Model, Queen's University, Feb. 17, 1999

THE T-MATRIX AND THE TWO-PARTICLE SPECTRAL FUNCTION

F. Marsiglio

Invited Talk at Mini Workshop on Recent Progress in Studying a Paradigm: Theoretical Treatments of the Hubbard Model, Queen's University, Feb. 18, 1999

NANOSCALE SUPERCONDUCTIVITY

F. Marsiglio

Invited Talk Campus Computing Symposium '99, University of Alberta, June 24, 1999

THE MECHANISM OF SUPERCONDUCTIVITY IN THE FULLERENES

F. Marsiglio

Invited Talk given at the 197th Meeting of the Electrochemical Society, Toronto, May 18, 2000.

TO K-SPACE AND BACK AGAIN

F. Marsiglio

Colloquium at University of Alberta Physics Department, Oct. 6, 2000.

MgB_2 AND THE ELECTRON PHONON INTERACTION

F. Marsiglio

Invited Talk given at the May, 2001 CIAR meeting, Magog, Qu.

EVEN/ODD AND SURFACE EFFECTS IN SUPERCONDUCTING NANOPARTICLES

F. Marsiglio

Invited Talk given at the JUNE, 2001 CAP conference, Victoria, BC

ELECTRON-PHONON SUPERCONDUCTIVITY IN MgB_2 ?

F. Marsiglio

Invited Talk given at the 2002 APS March meeting, Indianapolis, IN

HOW DO YOU DETERMINE THE MECHANISM OF SUPERCONDUCTIVITY ?

F. Marsiglio

Invited Talk given at LEES'02 (Low Energy Electrodynamics in Solids) Oct. 2002, Montauk, NY

DETERMINING THE MECHANISM OF SUPERCONDUCTIVITY

F. Marsiglio

Invited Talk given at the JUNE, 2003 CAP conference, Charlottetown, PEI

USING THE INFRARED CONDUCTIVITY TO DETERMINE THE MECHANISM OF SUPERCONDUCTIVITY

F. Marsiglio

Invited Talk given at the 8th APCTP Winter Workshop on Strongly Correlated Electron Systems, Feb. 2004, Phoenix Park, South Korea

HOW DO YOU DETERMINE THE MECHANISM OF SUPERCONDUCTIVITY

F. Marsiglio

Invited Talk given at the Institute of Theoretical Physics, Beijing University, China, Feb. 2004

HOW DO YOU DETERMINE THE MECHANISM OF SUPERCONDUCTIVITY

F. Marsiglio

Invited Talk given at the Chinese Academy of Sciences, Beijing, China, Feb. 2004

OPTICAL SUM RULE: WHAT IS IT TELLING US ABOUT SUPERCONDUCTIVITY IN THE CUPRATES ?

F. Marsiglio

CMP Lunchtime seminar given at University of Alberta, April 22, 2004

WHAT CAN WE LEARN ABOUT SUPERCONDUCTIVITY FROM THE OPTICAL CONDUCTIVITY ?

F. Marsiglio

Invited seminar given at the Dept. of Physics at University of Wisconsin-Madison, May 13, 2004.

THE OPTICS OF MgB_2

F. Marsiglio

Invited Talk given at the 4th international conference on nanoscale heterogeneity and quantum phenomena in complex matter (stripes'04), Sept. 29, 2004

A QUANTUM MECHANICAL DESCRIPTION OF MAGNETIZATION REVERSAL

F. Marsiglio

Invited Talk given at Theory Canada I, June 2-5 (2005)

SIGNATURES OF THE SUPERCONDUCTING MECHANISM IN THE FAR INFRARED

F. Marsiglio

Invited Talk given at Hvar 2005 Conference on Concepts in Electron Correlation Hvar, Croatia, Sept. 30-Oct. 5, 2005

OPTICAL PROPERTIES OF HIGH TEMPERATURE SUPERCONDUCTORS

Invited seminar given at the Dept. of Physics at University of Geneva, Apr. 7, 2006

THE OPTICS OF SUPERCONDUCTIVITY

Invited seminar given at the Department of Physics, University of Rome "La Sapienza" May 3, 2006

WHAT DO OPTICAL PROPERTIES TELL US ABOUT SUPERCONDUCTIVITY ?

Invited seminar given at the Dept. of Physics at Walther-Meissner-Institut, Munich, June 1, 2006.

THE OPTICS OF SUPERCONDUCTIVITY

Invited Talk given at the JUNE, 2006 CAP conference, Brock University, St. Catharines, ON

DESCRIPTION OF THE SUM RULE ANOMALY THROUGH SCATTERING RATE COLLAPSE BELOW Tc

Invited Talk given at the Optical Sum Rules Workshop, La Sapienza, Rome, July 2, 2007

ISSUES CONCERNING THE OPTICAL SUM RULE ANOMALY BELOW Tc IN THE CUPRATES

Talk given at the superconductivity workshop at The Aspen Center for Physics, Aug. 21, 2007.

High Tc Superconductivity: information from the Optical Sum Rule

Invited theory Seminar at UBC Physics, Jan. 21, 2008.

High Tc Superconductivity: the Optical Sum Rule

Invited theory Seminar at UCSD Physics, May 14, 2008.

A Quantum Mechanical Description of Magnetization Reversal

Invited talk at the CAP Congress (Best CMP paper in CJP), June 9, 2008.

What the optical sum rule tells us about superconductivity

Invited Talk at 6th International Conference of the series on Stripes and High Tc Superconductivity "STRIPES 08" at Erice, Sicily, Italy, July 26 to August 1, 2008

Magnetization Reversal in the Quantum Limit

Invited talk at the 5th Conference of the Asian Consortium on Computational Materials Science at Hanoi, Vietnam, Sept. 7-11, 2009

The Dynamic Hubbard Model: Results from DMFT

Invited talk at the CAP Congress Toronto, ON, June 7-11, 2010

The Dynamic Hubbard Model: An Introduction

Invited talk at the CAIMS Congress St. John's, NFLD, July 18, 2010

The Dynamic Hubbard Model: What it is and Preliminary Results from DMFT

Invited talk at the Superstripes 2010 Quantum Phenomena in Complex Matter, July 9-25, 2010, Erice, Italy

The Dynamic Hubbard Model: how most models of electron correlations have thrown out the baby

CMP Lunchtime seminar, University of Alberta, Sept. 23, 2010

100 years of superconductivity: what have theorists contributed to the story?

Invited Colloquium, Dept. of Physics, Univ. of Manitoba, Oct. 29, 2010

100 years of superconductivity: what have we done and where are we going?

Invited CAP Undergraduate Lecture, Dept. of Physics, Univ. of Waterloo, Mar. 8, 2011

100 years of superconductivity: what have we done and where are we going?

Invited CAP Undergraduate Lecture, Dept. of Physics, Univ. of Guelph, Mar. 9, 2011

100 years of superconductivity: what have we done and where are we going?

Invited CAP Undergraduate Lecture, Dept. of Physics, Univ. of Alberta, April 6, 2011

100 years of superconductivity: what have we done and where are we going?

Invited Talk at the annual CAP Congress, St. John's, Nfld, June 16, 2011

Nanotechnology and Quantum Physics at the University of Alberta

Talk at the Capri Hotel and Convention Centre, Red Deer, AB, July 6, 2011

Suspicions about the conventional (Eliashberg) electron-phonon mechanism of superconductivity

Invited talk at the Superstripes 2011 Quantum Phenomena in Complex Matter, July 10-16, 2011, Rome, Italy

100 Years of Superconductivity: have we reached a crossroad?

Invited talk at the Undergraduate Pacific Physics and Astronomy Meeting, March 9, 2012, University of Alberta.

The Dynamic Hubbard Model: A Paradigm Shift?

Invited talk at the Canadian Institute for Advanced Research Meeting, May 19, 2012, Toronto.

Polarons in Real Materials?

Invited talk at Superstripes 2012 Phase Separation and superstripes in high

temperature superconductors and related materials, July 11-16, 2012, Erice, Italy

Sasha Alexandrov: the role of the Electron-phonon interaction in real materials

Polarons in Real Materials?

Invited after-dinner talk at 9th International Conference on New Theories, Discoveries

and Applications of Superconductors and Related Materials

(NEW3SC-9), Sept. 16-20, 2012, Frascati, Italy

The Dynamic Hubbard Model

Invited talk at the Canadian Institute for Advanced Research Meeting, Oct.17-20, 2012, Montreal.

Eliashberg Theory of Superconductivity: Do we have it Right?

Invited Colloquium at Department of Physics, University of Camerino, Dec. 18, 2012, Camerino, Italy

Eliashberg Theory of Superconductivity: Do we have it Right?

Invited Colloquium at Department of Physics, University of Ljubljana, April 2, 2013, Ljubljana, Slovenia

Hunting for Elephants in Superconductors

Invited Talk at Symposium in honour of Tom Timusk and Jules Carbotte, May 24, 2013

McMaster University, Hamilton, ON

Polarons in the BLF-SSH model

Invited talk at Superstripes 2013 Quantum in Complex Matter: Superconductivity, Magnetism and Ferroelectricity

May 27 - June 1, 2013, Ischia, Italy

Eliashberg Theory of Superconductivity: a critical assessment

Invited talk at Workshop on Fundamental Issues in Condensed Matter Theory

June 3 - June 21, 2013, ISSP, Kashiwa, Japan.

Dynamic Coulomb Interactions in Superconductivity

Invited talk at XVII International Conference on Recent Progress in Many-Body Theories

Sept. 8-13, 2013, Rostock, Germany.

The Dynamic Hubbard Model: what might be missing in current descriptions of strongly correlated electrons in solids

Invited talk at the 15th Annual Meeting of the APS Northwest Section

May 1-3, 2014, University of Washington, Seattle, USA.

Multi-band Effects through the Dynamic Hubbard Model

Invited talk at the MultiSuper 2014 International Conference on Multi-Condensate Superconductivity and Superfluidity in Solids and Ultracold Gases

June 24-27, 2014, University of Camerino, Camerino, Italy.

The Dynamic Hubbard Model: studies with DMFT and exact diagonalization

Invited talk at the Petascale Many Body Methods for Complex Correlated Systems

February 12-14, 2015, Louisiana State University, Center for Computation and Technology Baton Rouge, U.S.A.

Superconductivity in H_2S and in other superconductors; many band or band of many?

Invited talk at Superstripes 2016 Physics in Quantum Matter: Superconductivity, Magnetism and Ferroelectricity

June 23 - June 29, 2016, Ischia, Italy

Dynamic Hubbard Model and Superconductivity in H_2S

Invited talk at International Conference on New Theories, Discoveries,

Applications of Superconductors and Related Materials (NEW3SC-11)

Sept 11-16, 2016, Bled, Slovenia

High Temperature Superconductivity in H_3S — why so high?

Invited talk at Superstripes 2017 Physics in Quantum Matter: Superconductivity, Magnetism and Ferroelectricity

June 4 - June 10, 2017, Ischia, Italy

More than 100 years of superconductivity: do we need a paradigm shift?

Invited talk at BIRS Contemporary Topics in Mathematical Physics

Oct. 28-29, 2017, Banff, AB

Superconductivity: "state-of-the-union" address

Invited talk at "Physics at the Nanoscale"

April 23-24, 2018, Manitoba, Canada

Superconductivity with mixed symmetries

Invited talk at International Conference on New Theories, Discoveries,

Applications of Superconductors and Related Materials

April 1-5, 2019, Oxford Univ. UK

Mixed symmetry and the role of spin-orbit coupling in high temperature superconductivity

Invited talk at Superstripes 2019

June 23-29, Ischia, Italy

The enhancement of T_c with spin-orbit coupling through the hole mechanism of superconductivity

Invited talk at Electron Correlation in Superconductors and Nanostructures (ECSN-2019)
October 6-10, 2019, Odessa, Ukraine

A Day in the Life of a Condensed Matter Theorist
A talk for the undergraduates in Physics
March 5, 2020 University of Alberta

Mixed symmetry and the role of spin-orbit coupling in high temperature superconductivity
Invited talk at "From Solid State to BioPhysics X"
June 6-13, 2020, Croatia (cancelled)

Eliashberg Theory and Jules Carbotte
Invited talk at CAP Congress, 2020
June 12, 2020 McMaster University (cancelled)

Eliashberg Theory and Jules Carbotte
Invited talk at CAP Congress, 2021
June 7, 2021 (via Zoom)

Hydride Superconductivity at $T > 200$ K...or is it?
Colloquium at Dept. of Physics, Trent University
Jan. 19, 2022 (via Zoom)

High-Pressure Hydrides: Are they Superconducting? If so, are they Electron-phonon driven?
Invited talk at "From Solid State to BioPhysics X: From Basic to Life Sciences "
June 13, 2022, Cavtat, Croatia

High-Pressure Hydrides: Are they Superconducting? If so, are they Electron-phonon driven?
Invited talk at "Superstripes 2022"
June 21, 2022, Frascati, Italy

High-Pressure Hydrides: Are they Superconducting? If so, are they Electron-phonon driven?
Invited talk at "M2S (Materials and Mechanisms of Superconductivity) 2022 "
July 18, 2022, Vancouver Canada

High-Pressure Hydrides: Are they Superconducting? If so, are they Electron-phonon driven?

Invited talk at "Challenges in Designing Room Temperature Superconductors"

July 27, 2022, L'Aquila, Italy.

Panel to Discuss Experiments in High-Pressure Hydrides

Invited Panel Discussion at "Challenges in Designing Room Temperature Superconductors"

July 28, 2022, L'Aquila, Italy.

The Eliashberg Theory of Superconductivity: a reflective critique

Invited talk at "Correlated Matter and Light Conference,

Sept. 7-9, 2022, Geneva, Switzerland

Superconductivity: from Mercury to the Hydrides

Invited Seminar, RQMP (Universite de Montreal, McGill, and Sherbrooke)

Feb. 6, 2023 (via Zoom).