

**CURRICULUM VITAE**  
**ALLAN H. MACDONALD**

Full name: Allan Hugh MacDonald

Date and place of birth: December 1, 1951  
Antigonish, Nova Scotia, Canada

Citizenships: Canadian and American

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Title: Sid W. Richardson Foundation  
Regents Chair

Field of Specialization: Condensed Matter Theory

**Employment:**

September 1973 -- April 1978	Ph.D. Student University of Toronto
May 1978 -- October 1980	Research Associate --- National Research Council
November 1980 -- June 1982	Assistant Research Officer -- National Research Council of Canada
August 1982 -- August 1987	Associate Research Officer --- National Research Council of Canada
September 1987 -- August 1992	Professor of Physics --- Indiana University
September 1992 -- August 2000	Distinguished Professor of Physics --- Indiana University
September 2000 -- present	Sid W. Richardson Foundation Regents Chair --- The University of Texas at Austin

**Professional Activities:**

**1985-1986**

Deputy Chair, Condensed Matter Division, Canadian Association of Physicists

**1986-1987**

Chair, Condensed Matter Division, Canadian Association of Physicists

**1987-1988**

Past Chair, Condensed Matter Division, Canadian Association of Physicists

**1988-1992**

Consultant for the Max Plank Institute for Solid State Research, Stuttgart

**1990-1993**

Member of the  $\mu$ SR Experiment Evaluation Committee for TRIUMF

**1993-1996**

Chair of the  $\mu$ SR Experiment Evaluation Committee for TRIUMF

**1990**

Editorial Board of Solid State Communications

**1993**

Member of Buckley Prize Committee for the American Physical Society

**1994**

Chair of the Buckley Prize Committee for the American Physical Society

**1994**

Divisional Associate Editor for Physical Review Letters

**1995-1999**

Member, Executive Committee, DCMP, American Physical Society

**1997**

Guest expert for European Science Foundation Meeting on the scientific case for the European Large Magnetic Field Facility (ELMF)

**1997**

Member of evaluation panel for a proposed high continuous magnetic field facility at Nijmegen for the Foundation for Fundamental Research on Matter (Netherlands)

**1997**

Member of NSF CAREER proposal review panel

**1998**

Member of NRC Subpanel for NIST Center for Neutron Research

**Research Interests and Highlights:**

My primary research interests center on the influence of electron-electron interactions on the electronic properties of metals and semiconductors. My research is driven, for the most part, by experiment rather than by theoretical technique. My technical interests cover a broad swath within the condensed matter theory subfield, ranging from pragmatic techniques for electronic structure calculations on the more traditional side to the more trendy field theoretical approaches. In the following paragraph, I briefly summarize the topics on which I have worked.

My Ph.D. thesis research, performed under the supervision of S. H. Vosko at the University of Toronto, was part of a body of work in the late 1970's which demonstrated the power of spin-density-functional based approximations in describing many ground state properties of metallic magnets. One aspect of my thesis work was a relativistic generalization of the Hohenberg-Kohn-Sham density functional theory, reported in a paper ([11]) which is still regularly cited. My postdoctoral research work, performed at the laboratories of the National Research Council of Canada and motivated in part by experimental work in that lab, centered on the lattice dynamics and transport properties of metals. This work brought our understanding of carrier-carrier scattering effects in simple metals to a quantitative level for the first time and identified ([20]) phonon-mediated scattering as a dominant process in many metals. The work on transport theory in metals led to an interest in the quantum Hall effect, a transport anomaly which occurs in degenerate two-dimensional semiconductor systems in strong magnetic fields. My first work in this area ([48]) was carried out while visiting with Maurice Rice at the ETH in Zurich. It focused on some perplexing questions concerning the spatial distribution of current in the quantum Hall regime which subsequently received a great deal of attention. The following summer, while working at the physics center in Trieste in collaboration with Pavel Streda, I wrote an early paper ([61]) on the relationship between the Kubo formula description of the integer quantum Hall effect, which was being developed by Streda, Thouless, and others, and the edge state picture, being developed by Laughlin, Halperin and others.

By this time my primary interest had shifted from transport theory to the many-body physics problem underlying the fractional quantum Hall effect, namely the problem of interacting electrons in a macroscopically degenerate Landau level which can be tackled only with non-perturbative techniques. Working with Steve Girvin and Phil Platzman in Aspen in 1984, I employed a sum rule approach ([79]) similar to that used by Feynman for liquid Helium to address the collective excitations of fractional Hall states. In collaboration with Mark Rasolt ([84]), I used a similar approach to look at Goldstone modes in the broken symmetry states which frequently arise in the fractional Hall regime when the electrons possess additional degrees of freedom. Steve Girvin and I pointed out ([92]) an unusual long-range-order property in Laughlin's quantum Hall states. This paper was the harbinger of Chern-Simons field theory approaches to fractional Hall effect theory. In 1990 I proposed ([111]), on the basis of microscopic considerations, that the description of the low energy physics of fractional Hall edge required, in general, multi-branch one-

dimensional Fermion models. This year also marked a return to my interest in broken symmetries in fractional Hall systems with additional degrees of freedom. I pointed out that ([122]) that double-layer quantum Hall systems could have a broken symmetry in their ground state like that in easy plane ferromagnets and estimated the phase boundary which delimited the stability region of the broken symmetry states. More recent work on this topic ([190]) has focused on the properties of these states when a magnetic field is applied in the plane of the 2D electron layers. With René Côté I developed ([130]) techniques, originally applied to the Wigner crystal state, which enabled accurate calculations of physical properties of electronic states in the quantum Hall regime with broken translational symmetry. These techniques have provided the backbone for a series of recent calculations ([199]) of the properties of skyrmion crystal states in quantum Hall ferromagnets.

In recent years, a smaller fraction of my research effort has been devoted to the fractional quantum Hall effect. In collaboration with students at Indiana University, I have completed work on the vortex-lattice melting transition ([173]), and on microscopic properties of the mixed state of type-II superconductors. I maintain an interest in the properties of two-dimensional electronic systems, in both zero field and strong field limits. I have also returned to the subject of my thesis research, metallic magnetism. I am particularly interested in the transport properties of metallic magnets, and at present, especially the properties of magnetic tunnel junctions.

*The numbers above refer to the publication list below.*

**Conferences and Symposia Organized:**

International Conference on Transport in Metals, Ottawa, 1981  
(Member of Local Organizing Committee)

Fall Symposium of the Canadian Association of Physicists, Ottawa, 1985 (Director)

Summer Workshop on the Physics of Artificially Structured Materials, Kingston,  
1986 (Director)

NATO ASI on Quantum Wells and Superlattices, Banff, 1987  
(Member of Organizing Committee)

7th International Conference on Electronic Properties of Two Dimensional Systems,  
New Mexico, 1987 (International Advisory Committee)

Aspen Workshop on Quantum Transport in Restricted Geometries, Aspen,  
Colorado, 1990 (Co-organizer)

9th International Conference on Electronic Properties of Two-Dimensional  
Systems, Newport RI, June 1993 (Program Committee)

11th International Conference on Semiconductors in a Magnetic Field, Boston MA,  
August 1994 (Program Committee)

10th International Conference on Electronic Properties of Two-Dimensional  
Systems, Nottingham UK, June 1995 (International Advisory Committee)

Aspen Winter Conference on Condensed Matter, January 1997, Aspen Colorado

13th International Conference on Semiconductors in a Magnetic Field, Nijmegen,  
The Netherlands, August 1998 (International Advisory Committee)

Institute for Theoretical Physics program on “Interaction and Disorder in Quantum  
Hall and Mesoscopic Systems,” August to December 1998

**Scholarships and Honors:**

President's Scholarship, St. Francis Xavier University, 1969–1973

Governor-General's Medal, St. Francis Xavier University, 1973  
(Highest academic standing in graduating class)

NSERC 1967 Science Scholarship, University of Toronto, 1973–1977

Herzberg Medal, 1987 (Awarded by the Canadian Association of Physicists)

Fellow of the American Physical Society, 1989

**Invited Talks at Conferences and Workshops**

1. "Electron-electron Interactions in Simple-metals and Transition-metals," International Conference on Transport in Metals, Ottawa, 1981.
2. "Relativistic Effects in Metals," NATO ASI on Relativistic Effects in Atoms, Molecules, and Solids, Vancouver, 1981.
3. "The Quantum Hall Effect," Workshop in Condensed Matter Physics, International Center for Theoretical Physics, Trieste, Italy, 1983.
4. "Classical Plasmas, Quantum Fluids and the Fractional Quantum Hall Effect," Canadian Association of Physicists Congress, Fredericton, 1985.
5. "The Fractional Quantum Hall Effect," Gordon Research Conference on Disordered Materials, Wolfboro, N.H., 1986.
6. "The Fractional Quantum Hall Effect," 5th International Conference on Progress in Many-Body Theories, Oulu, Finland, 1987.
7. "Electrons in Strong Magnetic Fields," Canadian Association of Physicists Congress, Toronto, 1987.
8. "Fibonacci Superlattices," NATO ASI on Interfaces, Superlattices and Quantum Wells, Banff, Alberta, 1987.
9. "Landauer Formulas and the Quantum Hall Effect," Workshop on Quantum Electrical Engineering, Minnesota, October 1988.
10. "The Quantum Hall Effect," Solid State Physics Conference, Santiago, Chile, January 1989.
11. "Off-Diagonal Long Range Order in the Quantum Hall Effect," March Meeting of the American Physical Society, St. Louis, 1989.
12. "Fractional Hall Effect in Multi-Component Systems," Eighth International Conference on the Electronic Properties of Two-Dimensional Systems, Grenoble, 1989.
13. "The Quantum Hall Effects," NATO ASI on Quantum Coherence in Mesoscopic Systems, Les Arcs France, April 1990.
14. "Half the Story," Yale 2D Mini, Yale University, October 1990.
15. "The 2D Wigner Crystal," Midwest Solid State Theory Meeting, Northwestern University, October 1990.

16. "Many-Body Physics in a Strong Magnetic Field," Solid State Physics Conference, Santiago, Chile, January 1991.
17. "Many-Body Physics in a Strong Magnetic Field," Many-Body Workshop, International Center for Condensed Matter Physics, Brazilia, Brazil, January 1991.
18. "Edge Electronic Structure in the Fractional Hall Regime," Workshop on Mesoscopic Physics, Institute for Theoretical Physics, Santa Barbara, California, May 1991.
19. "The Quantum Hall Effects," Gordon Godfrey Workshop on Condensed Matter Physics, University of New South Wales, Sydney Australia, July 1991.
20. "Facts and Fantasies in FQHE Theory," Nanostructures Workshop, National Research Council of Canada, Ottawa, Canada, August 1991.
21. "Facts and Fantasies in FQHE Theory," International Conference on Physics in Two Dimensions, Neuchatel, Switzerland, August 1991.
22. "Electron Liquids and Solids in Very Strong Magnetic Fields," Mauterndorf Winterschool, Mauterndorf Austria, February 1992.
23. "Edge Electronic Structure in the Fractional Hall Regime," Max Planck -- Chernagolovka Joint Workshop on Solid State Physics, Schloss Ringburg, Germany, May 1992.
24. "The Fractional Quantum Hall Effect," China Center for Advanced Science and Technology Summer School in Condensed Matter Physics, Beijing China, June 1992.
25. "Photoluminescence in the Fractional Hall Regime," Gordon Godfrey Workshop on Condensed Matter Physics, Sydney Australia, July 1992.
26. "Superconductivity in Extremely Strong Magnetic Fields," Argonne Workshop on Superconductivity, Argonne, August 1992.
27. "Lectures on the Quantum Hall Effect," Australian National University Physics Summer School: Modern Perspectives in Many-Body Physics, Canberra, Australia, 11-29 January 1993.
28. "Do Superconductors Superconduct?" Atlantic Undergraduate Physics Conference, Antigonish Nova Scotia, February 1993.
29. "Magnetoplasmons, Magnetorotons, and Magnetoexcitons," March Meeting of the American Physical Society, Seattle, March 1993.

30. "Coherent Interlayer Tunneling in Double-Layer Quantum Hall Systems," International Workshop on Magnetotransport in Structured Inversion Layers, Bad Lauterberg, Germany, June 1993.
31. "Vortex-lattice Melting," MISCON Workshop on Type-II Superconductivity, Notre Dame University, July 1993.
32. "Spontaneous Interlayer Coherence in Double-Layer Systems," Workshop to Commemorate the 30th Anniversary of Solid State Communications, Oxford University, September 1993.
33. "One and One-half: Frontiers in FQHE Theory," 4th ISSP International Symposium: Frontiers in High Magnetic Fields, Tokyo, November 1993.
34. "Commensurate-Incommensurate Phase Transitions in Double-Layer Quantum Hall Systems," ENFISOL-4, Santiago Chile, January 1994.
35. "Spontaneous Interlayer Coherence in Double-Layer Quantum-Hall Systems," Workshop on Half-Filled Landau Levels, University of Minnesota, April 1994.
36. "Introduction to the Quantum Hall Effect," Four lectures during the Spring College on Condensed Matter Physics, International Center for Theoretical Physics, Trieste, Italy, May 1994.
37. "Introduction to the Quantum Hall Effect," Five lectures during the Les Houches Summer School on Mesoscopic Physics, Les Houches, France, July 1994.
38. "Spontaneous Interlayer Coherence in Double-Layer Quantum Hall Systems," Technion Advanced Research Workshop on Free Electrons in Nanostructures, Nof Ginosar, Israel, October 1994.
39. "Some Recent Results in Fractional Quantum Hall Effect Theory," Three Lectures at the Winter School on Recent Developments in Quantum Many-Body Physics, Bangalore, India, January 1995.
40. "Novel Physics in Double-Layer Quantum Hall Systems," Workshop on Novel Physics in Low-Dimensional Electron Systems, Madras, India, January 1995.
41. "Current Problems in the Theory of The Fractional Quantum Hall Effect," Three Lectures at the Brazilian Workshop on Semiconductor Physics, Rio de Janeiro, Brazil, July 1995.
42. "Quantum Hall Ferromagnetism," Workshop on Quantum Transport Theory and Quantum Chaos, Erwin Schroedinger Institute, Vienna, Austria, August 1995.



43. "Current Problems in the Theory of The Fractional Quantum Hall Effect," Four lectures at the NATO ASI on Transport in Submicron Semiconductor Structures, Bad Lauterberg, Germany, August 1995.
44. "Skyrme Crystals," Workshop on New Developments in the Quantum Hall Effect, Minneapolis MN, May 1996.
45. "Excitonic Bose Condensation in 2D Electron-Hole Double-Layer Systems," Nobel Symposium "Heterostructures in Semiconductors," Arild, Sweden, June 1996.
46. "Excitonic Bose Condensation in 2D Electron-Hole Double-Layer Systems," ECAMI Workshop, Ottawa, June 1996.
47. "2D to 2D Tunneling," Workshop on 2D Electron Systems, Pisa Italy, June 1996.
48. "Excitonic Bose Condensation in 2D Electron-Hole Double-Layer Systems," Low-Dimensional Electron System Workshop, Trieste, Italy, July 1996.
49. "Skyrme Crystals in Quantum Hall Ferromagnets," International Conference on High Magnetic Fields in Semiconductor Physics, Wurzburg, Germany, July 1996.
50. "Vortex Solids and Vortex Fluids in the Lowest Landau Level Approximation," Workshop on Fluctuation Phenomena in High Temperature Superconductors, Trieste, Italy, August 1996.
51. "Three Lectures on the Fractional Quantum Hall Effect," French "GDR" school, Aussois, France, June 1997.
52. "Strong Correlations in a Landau Band: The Fractional Quantum Hall Effect and Beyond," Asia Pacific Center for Theoretical Physics Summer School on Strong Correlation and High Temperature Superconductivity, Seoul, Korea, June 1997.
53. "Strong Correlations in Electronic Systems," Ninth International Conference on Recent Progress in Many-Body Theories, Sydney Australia, July 1997.
54. "Excitonic Condensates in Electron-Hole Double Layers," European Physical Society General Meeting, Leuven, Belgium, August 1997.
55. "Pseudospin Anisotropy and Hysterisis in Quantum Hall Ferromagnets," XXII Condensed Matter Theories Workshop, Nashville, Tennessee, June 1998.
56. "Pseudospin Anisotropy and Hysterisis in Quantum Hall Ferromagnets," INFM Workshop on Semiconductor Nanostructures, Pisa, Italy, June 1998.
57. "Weak Disorder in Strongly Interacting 2D Electron Systems," CECAM Workshop on Coupled 2D Electron Layers, Torino, Italy, June 1998.

58. "Pseudospin Anisotropy and Hysterisis in Quantum Hall Ferromagnets," INFM Annual Meeting, Rimini, Italy, June 1998.
59. "Spin-Dependent Tunneling in Metals and Semiconductors," APS March Meeting, Atlanta, March 1999.
60. "Quantum Hall Stripe State Physics," Workshop on New Developments in the Quantum Hall Effect, University of Minnesota, May 1999.
61. "Spin-dependent Transport in Metals and Semiconductors," Sitges Conference on Statistical and Dynamic Aspects of Mesoscopic Systems, Sitges, Spain, June 1999.
62. "Optical Properties of Quantum Hall Ferromagnets," NATO ARW on Optical Properties of Semiconductor Nanostructures, Ustron-Jaszowiec, Poland, June 1999.
63. Lectures on Quantum Hall Ferromagnets, Winter School J.J. Giambiagi, Physics Department, University of Buenos Aires, Argentina, July 1999.
64. "Quantum Hall Stripe State Physics," Workshop on Interactions and Quantum Transport of Lower Dimensional Systems, Hamburg, Germany, July 1999.
65. "Quantum Hall Stripe State Physics," Conference on Quantum Phases in Electron Systems of Low Dimensions, Trieste, Italy, July 1999.
66. Lectures on Quantum Hall Ferromagnets, School on Exotic States in Quantum Nanostructures, London, England, August 1999.
67. "Quantum Hall Stripe State Physics," Trends in Condensed Matter Physics (A Celebration of the 65th Birthday of David Thouless), Seattle, Washington, September 1999.
68. " $\text{III}_{1-x}\text{Mn}_x\text{V}$  Ferromagnetism: Semiconductor Spintronics," 1st Washington Spintronics Conference, Washington DC, July 2000.
69. "de-Haas van Aalphen Oscillations in the Mixed State," Boulder Summer School in Condensed Matter Physics, Boulder, Colorado, July 2000.
70. "Quantum Description of Ferromagnetic Metal Nanoparticles," Spintronics Workshop, Cortona, Italy, July 2000.
71. "Superfluid properties of quantum Hall ferromagnets," Conference on Semiconductors in Strong Magnetic Fields, Matsue, Japan, September 2000.
72. "Quantum Description of Ferromagnetic Metal Nanoparticles," Nanophysics Workshop, Ascona, Switzerland, October 2000.

73. "Superfluid Properties of Quantum Hall Ferromagnets," Low Dimensional Electron Workshop, Tokyo, Japan, February 2001.
74. " $\text{III}_{1-x}\text{Mn}_x\text{V}$  Ferromagnetism: Semiconductor Spintronics," Advanced Research Workshop, Queenstown, New Zealand, February 2001.
75. " $\text{III}_{1-x}\text{Mn}_x\text{V}$  Ferromagnetism: Semiconductor Spintronics," Low Dimensional Electron Workshop, Seoul, Korea, February 2001.
76. "Quantum Description of Ferromagnetic Metal Nanoparticles," Nanoscience Workshop, National Center of Nanoscience, Beijing, China, June 2001.
77. "Quantum Description of Ferromagnetic Metal Nanoparticles," Nanoscience Workshop, University of Science & Technology, Hefei, China, June 2001.
78. " $\text{III}_{1-x}\text{Mn}_x\text{V}$  Ferromagnetism: Semiconductor Spintronics," Semiconductor Physics Workshop, Janczowic, Poland, June 2001.
79. " $\text{III}_{1-x}\text{Mn}_x\text{V}$  Ferromagnetism: Semiconductor Spintronics," Workshop on Quantum Materials, Hamburg, Germany, June 2001.
80. " $\text{III}_{1-x}\text{Mn}_x\text{V}$  Ferromagnetism: Semiconductor Spintronics," Future of Microelectronics Workshop, Ile de Bendor, France, June 2001.
81. " $\text{III}_{1-x}\text{Mn}_x\text{V}$  Ferromagnetism: Semiconductor Spintronics," Washington Spintronics Workshop, Washington, August 2001.
82. "Charge Fluctuations in Quantum Hall Bilayers and Underdoped Cuprates," Strongly Correlated Electron Workshop, Ann Arbor, Michigan, August 2001.
83. "Quantum Description of Ferromagnetic Metal Nanoparticles," Nanoscience Workshop, Institute for Theoretical Physics, Santa Barbara, California, August 2001.
84. "Charge Fluctuations in Quantum Hall Bilayers and Underdoped Cuprates," Correlated Electron Workshop, Kashiwa, Japan, October 2001.
85. "Quantum Hall Quantum Bits," Decoherence Mechanism Workshop, Austin, Texas, October 2001.
86. "Ferromagnetic Semiconductors," Nanophase Materials Science Workshop, Oak Ridge, Tennessee, October 2001.

87. "Ferromagnetism and Superfluidity in Bilayer QH Systems," International Symposium: Quantum-Hall-Effect and Heterostructures, University of Würzburg, Germany, December 2001.
88. "Ferromagnetism in Diluted Magnetic Semiconductors and Transition Metal Ferromagnets," National Science Foundation US-Italy Conference, Washington, D.C., March 2002.
89. "Ferromagnetic Semiconductors," DARPA SPINS Workshop, Vanderbilt University, Nashville, Tennessee, February 2002.
90. "Spintronics in Quantum Hall Ferromagnets," Workshop on Spins and Interactions in Mesoscopic Systems, Minneapolis, Minnesota, May 2002.
91. "Ferromagnetism in Magnetically Doped Semiconductors," Nanostructures and Quantum Phenomena Workshop, Beijing, China, June 2002.
92. "Spintronics in Quantum Hall Ferromagnets," Quantum Phenomena Workshop, Xian, China, June 2002.
93. "Ferromagnetic Semiconductors," Gordon Research Conference on Magnetic Nanostructures, Colby College, Waterville, Maine, June 2002.
94. "Spintronics," New Directions in Mesoscopics NATO Advanced Study Institute, Erice, Sicily, July 2002.
95. "Spintronics in Quantum Hall Ferromagnets," Nanophase Workshop, Erice, Sicily, July 2002.
96. "Spintronics in Quantum Hall Ferromagnets," Plenary Lecture at the International Conference on the Physics of Semiconductors, Scotland, August 2002.
97. "Spintronics in Quantum Hall Ferromagnets," International Conference on Low Temperature Physics, Hiroshima, Japan, August 2002.
98. "Spintronics in Semiconductors" a series of 3 lectures, DARPA, Ft. Lauderdale, FL., Sept. 2002
99. "Magnetic Semiconductors" (LEES) Low Energy Electrodynamics in Solids, New York, NY, Oct. 2002.
100. "Weak-Coupling Theory of Underdoped Cuprates", Aspen Winter Conference, Buffalo, NY, Feb. 2003.
101. "Weak-Coupling Theory of Underdoped Cuprates", Canadian Institute of Advanced Research, Spring Workshop, Vancouver, Canada, May 2003.

102. “The Bosan FQHE:Rapidly Rotating Cold Atoms” Collective Transport in Bilayer Quantum Hall Systems, University of Pisa, Pisa, IT, June 2003.
103. “Ferromagnetism in Diluted Magnetic Semiconductors”, High Magnetic Field Lab, Grenoble, France, June, 2003.
104. “Phenomenological Models of DMS Ferromagnetism”, CECAM Workshop on Ferromagnetic Semiconductors, Lyon, France, June 2003.
105. “The Bosan FQHE: Rapidly Rotating Cold Atoms”, University of Kalshure, Germany. June 2003.
106. “The Bosan FQHE: Rapidly Rotating Cold Atoms”, International Conference on the Quantum-Hall Effect, Past, Present and Future, Stuttgart, Germany, July 2003.
107. “Spintronics in Semiconductors” a series of 3 lectures, Boulder Condensed Matter Physics School, Boulder, CO, July 2003
108. “Collective Transport in Bilayer Quantum Hall Systems”, 15<sup>th</sup> International Conferences on Electronic Properties of Two-Dimensional Electron Systems, Nara, Japan, July 2003.

**Seminars and Colloquia**

1. "Relativistic Density Functional Formalism,"  
National Research Council, Ottawa, February 1978.
2. "Relativistic Density Functional Formalism,"  
Argonne National Labs., Argonne, Ill., January 1979.
3. "Electron-Electron Scattering in Metals,"  
Dalhousie University, Halifax, N.S., January 1980.
4. "Electron-Electron Scattering in Metals,"  
St. Francis Xavier University, Antigonish, N.S., January 1980.
5. "Electron-Electron Scattering in Metals,"  
Queen's University, Kingston, Ont., February 1980.
6. "Umklapp Electron-Electron Scattering in the Alkali Metals,"  
University of Ottawa, Ottawa, September 1980.
7. "Susceptibility Anisotropy in Transition-Metal Dichalcogenides,"  
Michigan State University, East Lansing, Mich., November 1980.
8. "Alkali Metal Quasiparticle Dynamics,"  
National Research Council, Ottawa, November 1980.
9. "Umklapp Electron-Electron Scattering in the Alkali Metals,"  
University of Alberta, Edmonton, January 1981.
10. "Susceptibility Anisotropy in Transition Metal Dichalcogenides,"  
University of Alberta, Edmonton, January 1981.
11. "Susceptibility Anisotropy in Transition Metal Dichalcogenides,"  
Simon Fraser University, Edmonton, January 1981.
12. "Point Contact Spectroscopy,"  
Oak Ridge National Lab., Oak Ridge, Tenn., October 1981.
13. "Point Contact Spectroscopy,"  
University of Toronto, Toronto, November 1981.
14. "Point Contact Spectroscopy,"  
Max-Planck Institut, Stuttgart, FRG, November 1982.
15. "Quantum Hall Effect in a Periodic Potential,"  
University of Geneva, Geneva, Switzerland, February 1983.

16. "Quantum Hall Effect in a Periodic Potential,"  
Imperial College, London, England, May 1983.
17. "Quantum Hall Effect in a Periodic Potential,"  
University of Bristol, Bristol, England, May 1983.
18. "Quantum Hall Effect in a Periodic Potential,"  
Daresbury National Lab., Daresbury, England, May 1983.
19. "Quantum Hall Effect in a Periodic Potential,"  
Cambridge University, Cambridge, England, May 1983.
20. "Quantum Hall Effect in a Periodic Potential,"  
Free University of Amsterdam, Amsterdam, May 1983.
21. "Quantum Hall Effect in a Periodic Potential,"  
E.T.H. Zurich, Zurich, Switzerland, June 1983.
22. "Edge States and the Quantum Hall Effect,"  
Dalhousie University, Halifax, N.S., October 1983.
23. "Edge States and the Quantum Hall Effect,"  
St. Francis Xavier University, Antigonish, N.S., October 1983.
24. "Edge States and the Quantum Hall Effect,"  
University of Sherbrooke, Sherbrooke, P.Q., February 1984.
25. "Edge States and the Quantum Hall Effect,"  
McGill University, Montreal, P.Q., February 1984.
26. "The Fractional Quantum Hall Effect,"  
University of Toronto, Toronto, October 1984.
27. "The Fractional Quantum Hall Effect,"  
Cornell University, Ithaca, NY, October 1984.
28. "The Fractional Quantum Hall Effect,"  
McMaster University, Hamilton, November 1984.
29. "The Fractional Quantum Hall Effect,"  
University of Illinois, Urbana, Ill., February 1985.
30. "The Fractional Quantum Hall Effect,"  
IBM T.J. Watson Research Center, Yorktown Heights, NY, March 1985.

31. "The Fractional Quantum Hall Effect,"  
Max-Planck Institute, Grenoble, France, May 1985.
32. "The Fractional Quantum Hall Effect,"  
L'Ecole Normale Superieure, Paris, France, May 1985.
33. "The Fractional Quantum Hall Effect,"  
University of Manitoba, Winnipeg, Manitoba, October 1985.
34. "The Fractional Quantum Hall Effect,"  
Memorial University of Newfoundland, St. John's, Newfoundland, October 1985.
35. "The Fractional Quantum Hall Effect,"  
Queen's University, Kingston, Ontario, November 1985.
36. "The Fractional Quantum Hall Effect,"  
University of Hong Kong, Hong Kong, February 1986.
37. "The Fractional Quantum Hall Effect,"  
University of Kyushu, Fukuoka, Japan, February 1986.
38. "Collective Excitations in the Fractional Quantum Hall Effect,"  
Research Institute for Iron, Steel and Other Metals, Sendai, Japan, March 1986.
39. "The Fractional Quantum Hall Effect,"  
Tohoku University, Sendai, Japan, March 1986.
40. "Collective Excitations in the Fractional Quantum Hall Effect," Institute for  
Solid State Physics, Tokyo, Japan, March 1986.
41. "The Fractional Quantum Hall Effect,"  
Electrotechnical Institute, Tsukuba, Japan, March 1986.
42. "Density-wave Instabilities and Thermoelectric Parameters in the Alkali  
Metals,"  
National Bureau of Standards, Washington, DC, April 1986.
43. "Collective Excitations in the Fractional Quantum Hall Effect,"  
Brown University, Providence, RI, April 1986.
44. "Fractional Quantum Hall Effect,"  
SUNY at Buffalo, October 1986.



45. "Fractional Quantum Hall Effect,"  
University of Western Ontario, London, October 1986.
46. "Fractional Quantum Hall Effect,"  
University of Florida, January 1987.
47. "Fractional Quantum Hall Effect,"  
MPI fur Festkorperforschung, Stuttgart FRG, January 1987.
48. "Raman Scattering in Fibonacci Superlattices,"  
MPI fur Festkorperforschung, Stuttgart FRG, January 1987.
49. "ODLRO and the Fractional Quantum Hall Effect,"  
ETH-Zurich, Switzerland, January 1987.
50. "Fractional Quantum Hall Effect,"  
Ottawa, February 1987.
51. "Raman Scattering in Fibonacci Superlattices,"  
University of California at Davis, Davis CA, February 1987.
52. "Raman Scattering in Fibonacci Superlattices,"  
Indiana University, Bloomington IN, February 1987.
53. "Raman Scattering in Fibonacci Superlattices,"  
Waterloo University, March 1987.
54. "Raman Scattering in Fibonacci Superlattices,"  
University of Alberta, Edmonton Alberta, April 1987.
55. "The Fractional Quantum Hall Effect,"  
University of Toronto, October 1987.
56. "The Fractional Quantum Hall Effect,"  
University of Kentucky, November 1987.
57. "Fractional Quantum Hall Effect,"  
Oak Ridge National Lab, November 1987.
58. "The Two-Component Fractional Quantum Hall Effect,"  
University of Michigan, February 1988.
59. "The Two-Component Fractional Quantum Hall Effect,"  
University of Illinois, April 1988.

60. "The Two-Component Fractional Quantum Hall Effect,"  
MPI fur Festkorperforschung, Stuttgart FRG, June 1988.
61. "ODLRO in the FQHE and Quantum Spin Systems,"  
MPI fur Festkorperforschung, Stuttgart FRG, June 1988.
62. "The Quantum Hall Effect,"  
Oulu, Finland, June, 1988.
63. "Landauer Formulas and the Quantum Hall Effect,"  
National Research Council, Ottawa, Canada, October 1988.
64. "Landauer Formulas and the Quantum Hall Effect,"  
Argonne National Lab, January 1989.
65. "Landauer Formulas and the Quantum Hall Effect,"  
IBM T.J. Watson Labs, February 1989.
66. "Landauer Formulas and the Quantum Hall Effect,"  
Indiana University, February 1989.
67. "The Quantum Hall Effect,"  
IUPUI, April 1989.
68. "The Fractional Hall Effect in Two-Layer and Multilayer Systems,"  
University of Minnesota, April 1989.
69. "The Quantum Hall Effect,"  
Indiana State University, April 1989.
70. "The Fractional Hall Effect in Two-Layer and Multilayer Systems,"  
Ohio State University, April 1989.
71. "The Fractional Hall Effect in Two-Layer and Multilayer Systems,"  
AT&T Bell Labs, June 1989.
72. "t/U Expansion of the Hubbard Model,"  
MPI fur Festkorperforschung, Stuttgart FRG, July 1989.
73. "The Fractional Hall Effect,"  
University of Hamburg, Hamburg FRG, July 1989
74. "Edge Magnetoplasmons in the Quantum Hall Regime,"  
Yale University, November, 1989.

75. "Edge Magnetoplasmons in the Quantum Hall Regime," AT&T Bell Labs, Holmdel NJ, January 1990.
76. "Edge Magnetoplasmons in the Quantum Hall Regime," MPIF, Stuttgart FRG, May 1990.
77. "Photoluminescence in the fractional quantum Hall regime," MPIF, Stuttgart FRG, June 1990.
78. "Anyon superconductivity," MPIF, Stuttgart FRG, June 1990.
79. "Measuring fractional charges," Aspen Center for Physics, July 1990.
80. "Magnetophonons in the 2D Wigner Crystal," University of Maryland, September 1990.
81. "Magnetophonons in the 2D Wigner Crystal," University of Florida, October 1990.
82. "Magnetophonons in the 2D Wigner Crystal," M.I.T., October 1990.
83. "Magnetophonons in the 2D Wigner Crystal," S.U.N.Y. Stony Brook, October 1990.
84. "Magnetophonons in the 2D Wigner Crystal," Simon Frazer University, December 1990.
85. "Anyon Superconductivity," National Research Council of Canada, December 1990.
86. "Anyon Superconductivity," University of Missouri, January 1991.
87. "Magnetophonons in the 2D Wigner Crystal," University of Cincinnati, February 1991.
88. "Superconductivity in Extremely Strong Magnetic Fields," MISCON Meeting, Purdue University, August 1991.
89. "Anyons Anyone?" University of Wisconsin, October 1991.

90. "Edge States in the Integer and Fractional Quantum Hall Effects,"  
University of Minnesota, October 1991.
91. "Facts and Fantasies in FQHE theory,"  
Ohio University, November 1991.
92. "Superconductivity in Very Strong Magnetic Fields,"  
University of British Columbia, December 1991.
93. "Edge States in Integer and Fractional Quantum Hall Effects,"  
Simon Fraser University, December 1991.
94. "Superconductivity in Extremely Strong Magnetic Fields,"  
AT&T Bell Labs, March 1992.
95. "Luminescence in the Fractional Hall Regime,"  
University of Munich, May 1992.
96. "Luminescence in the Fractional Hall Regime,"  
Max Planck Institut für Festkörperforschung, May 1992.
97. "Magnetic Oscillations in Fractional Hall Dots,"  
University of New South Wales, Sydney, Australia, July 1992.
98. "Fractional Hall Quantum Dots,"  
Princeton University, October 1992.
99. "Superconductivity in Extremely Strong Magnetic Fields,"  
Concordia University, Montreal, October 1992.
100. "Superconductivity in Extremely Strong Magnetic Fields,"  
University of Sherbrooke, Sherbrooke Quebec, October 1992.
101. "Fractional Hall Quantum Dots,"  
AT&T Bell Labs, New Jersey, December 1992.
102. "Frictional Drag Between Nearby Two-Dimensional Electronic Systems,"  
Institute of Physics, Czechoslovakian Academy of Sciences, Prague, January  
1993.
103. "Frictional Drag Between Nearby Two-Dimensional Electronic Systems,"  
Indiana University, February 1993.
104. "Fractional Hall Quantum Dots,"  
University of Virginia, February 1993.

105. "Superconductivity in Extremely Strong Magnetic Fields," University of Kentucky, April 1993.
106. "Superconductivity in Extremely Strong Magnetic Fields," University of Illinois, April 1993.
107. "Do Superconductors Superconduct?" University of Louisville, April 1993.
108. "Coulomb Gaps in Strong Magnetic Fields," University of Karlsruhe, June 1993.
109. "Spontaneous Interlayer Coherence in Double-Layer Systems," University of Exeter, September 1993.
110. "Vortex-lattice melting in 2D Superconductors," University of Florida, October 1993.
111. "Vortex-lattice melting in 2D Superconductors," Florida State University, October 1993.
112. "Spontaneous Interlayer Coherence in Double-Layer Quantum-Hall Systems," Purdue University, January 1994.
113. "Spontaneous Interlayer Coherence in Double-Layer Quantum-Hall Systems," Johns Hopkins University, January 1994.
114. "Vortex-lattice melting in Anisotropic Superconductors," Oak Ridge National Lab, January 1994.
115. "Spontaneous Interlayer Coherence in Double-Layer Quantum-Hall Systems," University of Tennessee, February 1994.
116. "Spontaneous Interlayer Coherence in Double-Layer Quantum-Hall Systems," Penn State University, April, 1994.
117. "Spontaneous Interlayer Coherence in Double-Layer Quantum-Hall Systems," Ohio State University, April 1994.
118. "Vortex-lattice melting in Anisotropic Superconductors," AT&T Bell Labs, April 1994.
119. "Spontaneous Interlayer Coherence in Double-Layer Quantum-Hall Systems," The Technion, Haifa Israel, June 1994.

120. "Spontaneous Interlayer Coherence in Double-Layer Quantum-Hall Systems," Ben-Gurion University, Beer-Sheva Israel, June 1994.
121. "Spontaneous Interlayer Coherence in Double-Layer Quantum-Hall Systems," Ball State University, Muncie Indiana, November 1994.
122. "Vortices in s-wave and d-wave superconductors," University of British Columbia, Vancouver, December 1994.
123. "Spontaneous Interlayer Coherence in Double-Layer Quantum-Hall Systems," University of Minnesota, Minneapolis, December 1994.
124. "Spontaneous Interlayer Coherence in Double-Layer Quantum Hall Systems," University of Utah, Salt Lake City, February, 1995.
125. "Spontaneous Interlayer Coherence in Double-Layer Quantum Hall Systems," Los Alamos National Lab, Los Alamos, March 1995.
126. "Spontaneous Interlayer Coherence in Double-Layer Quantum Hall Systems," University of Chicago, Chicago, April 1995.
127. "Thermodynamics of Superconductors in a Magnetic Field: 1935-1995," University of Texas, Austin, April 1995.
128. "Spontaneous Interlayer Coherence in Double-Layer Quantum Hall Systems," Universidad Autonoma de Madrid, Madrid, Spain, May 1995.
129. "Spontaneous Interlayer Coherence in Double-Layer Quantum Hall Systems," Hokkaido University, Sapporo Japan, June 1995.
130. "Spontaneous Interlayer Coherence in Double-Layer Quantum Hall Systems," University of Tokyo, Tokyo Japan, July 1995.
131. "Spontaneous Interlayer Coherence in Double-Layer Quantum Hall Systems," Institute for Solid State Physics, Tokyo Japan, July 1995.
132. "Is there Off-Diagonal-Long-Range-Order in the Mixed State of a Type-II Superconductor," MISCON group meeting, Columbia Missouri, July 1995.
133. "Skyrmions without Sigma Models," Indiana University, September 1995.
134. "Skyrmions without Sigma Models II," Indiana University, November 1995.

135. "Thermodynamics of Superconductors in a Magnetic Field: 1935-1995,"  
University of Missouri, Columbia Missouri, November 1995.
136. "Quantum Hall Ferromagnets,"  
National Research Council of Canada, Ottawa, January 1996.
137. "Quantum Hall Ferromagnets,"  
University of Central Florida, Orlando, April 1996.
138. "Skyrme Crystals,"  
Royal Institute of Technology, Stockholm, June 1996.
139. "2D-2D Tunneling,"  
Indiana University, September 1996.
140. "Skyrmions and Skyrme Crystals in Quantum Hall Ferromagnets,"  
University of Delaware, September 1996.
141. "Skyrmions and Skyrme Crystals in Quantum Hall Ferromagnets,"  
University of California at Santa Barbara, October 1996.
142. "Thermodynamics of Superconductors in a Magnetic Field,"  
University of Oklahoma, November 1996.
143. "Skyrmions and Skyrme Crystals in Quantum Hall Ferromagnets,"  
University of Oklahoma, November 1996.
144. "Excitonic Condensates in Electron-Hole Double Layers,"  
MPI-FKF Stuttgart Germany, February 1997.
145. "Skyrmions and Skyrme Crystals in Quantum Hall Ferromagnets,"  
Michigan State University, March 1997.
146. "Skyrmions and Skyrme Crystals in Quantum Hall Ferromagnets,"  
University of Florida, April 1997.
147. "Skyrmions and Skyrme Crystals in Quantum Hall Ferromagnets,"  
University of Michigan, April 1997.
148. "Excitonic Condensates in Electron-Hole Double Layers,"  
Indiana University, April 1997.
149. "Excitonic Condensates in Electron-Hole Double Layers,"  
ETRI Taejon, Korea, June 1997.

150. "Skyrmions and Skyrme Crystals in Quantum Hall Ferromagnets,"  
Harvard University, November 1997.
151. "Ising Pseudospin Order and Hysterisis in Quantum Hall Ferromagnets,"  
California Institute of Technology, April 1998.
152. "Ising Pseudospin Order and Hysterisis in Quantum Hall Ferromagnets,"  
University of Illinois, April 1998.
153. "Ising Pseudospin Order and Hysterisis in Quantum Hall Ferromagnets,"  
University of Texas, May 1998.
154. "Ising Pseudospin Order and Hysterisis in Quantum Hall Ferromagnets,"  
Northwestern University, May 1998.
155. "Ising Pseudospin Order and Hysterisis in Quantum Hall Ferromagnets,"  
University of Campinas, Campinas SP, Brazil, August 1998.
156. "Carrier Induced Ferromagnetism in Diluted Magnetic Semiconductors,"  
University of Campinas, Campinas SP, Brazil, August 1998.
157. "Electrodynamic Properties of the Vortex Lattice,"  
University of Campinas, Campinas SP, Brazil, August 1998.
158. "Electrodynamic Properties of the Vortex Lattice,"  
Federal University of Rio de Janiero, Rio de Janiero, Brazil, August 1998.
159. "Electrodynamic Properties of the Vortex Lattice,"  
Indiana University, September 1998.
160. "Critical Currents, Phase Slips and Turbulence in Mesoscopic  
Superconductors," Indiana University, September 1998.
161. "Quantum Hall Ferromagnets," University of California at Santa Cruz, Santa  
Cruz, California, October 1998.
162. "Quantum Hall Ferromagnets,"  
University of British Columbia, Vancouver, Canada, October 1998.
163. "Electrodynamic Properties of the Vortex Lattice,"  
University of British Columbia, Vancouver, Canada, October 1998.
164. "Carrier Induced Ferromagnetism in Diluted Magnetic Semiconductors,"  
Simon Fraser University, Vancouver, British Columbia, October 1998.



165. “Quantum Hall Ferromagnets,”  
University of California at Santa Barbara, Santa Barbara, November 1998.
166. “Quantum Hall Ferromagnets,”  
Stanford University, November 1998.
167. “Spin Electronics,”  
University of Colorado, March 1999.
168. “Spin Electronics,”  
University of Texas, April 1999.
169. “Physics of Tunnel Junction Magnetoresistance,”  
Seagate Recording Heads, Minneapolis, May 1999.
170. “New Surprises in Quantum Hall Physics,”  
Brown University, Providence, Rhode Island, September 1999.
171. “Superfluid Properties of Quantum Hall Ferromagnets,”  
Columbia University, New York, November 1999.
172. “Superfluid Properties of Quantum Hall Ferromagnets,”  
University of Lund, Lund, Sweden, December 1999.
173. “Superfluid Properties of Quantum Hall Ferromagnets,”  
Princeton University, New Jersey, March 2000.
174. “ $\text{III}_{1-x}\text{Mn}_x\text{V}$  Ferromagnetism: Spintronics in Semiconductors,”  
University of Iowa, April 2000.
175. “ $\text{III}_{1-x}\text{Mn}_x\text{V}$  Ferromagnetism: Spintronics in Semiconductors,”  
McMaster University, April 2000.
176. “ $\text{III}_{1-x}\text{Mn}_x\text{V}$  Ferromagnetism: Spintronics in Semiconductors,”  
University of Southern Illinois, April 2000.
177. “ $\text{III}_{1-x}\text{Mn}_x\text{V}$  Ferromagnetism: Spintronics in Semiconductors,”  
Ohio State University, May 2000.
178. “ $\text{III}_{1-x}\text{Mn}_x\text{V}$  Ferromagnetism: Spintronics in Semiconductors,”  
National Research Council of Canada, Ottawa, January 2001.
179. “ $\text{III}_{1-x}\text{Mn}_x\text{V}$  Ferromagnetism: Spintronics in Semiconductors,”  
University of Houston, Houston, Texas, January 2001.

180. “ $\text{III}_{1-x}\text{Mn}_x\text{V}$  Ferromagnetism: Spintronics in Semiconductors,” Rice University, Houston, Texas, March 2001.
181. “ $\text{III}_{1-x}\text{Mn}_x\text{V}$  Ferromagnetism: Spintronics in Semiconductors,” Los Alamos National Laboratory, Los Alamos, New Mexico, April 2001.
182. “Superfluid Properties of Quantum Hall Ferromagnets,” Los Alamos National Laboratory, Los Alamos, New Mexico, April 2001.
183. “ $\text{III}_{1-x}\text{Mn}_x\text{V}$  Ferromagnetism: Spintronics in Semiconductors,” Clemson University, Clemson, South Carolina, April 2001.
184. “ $\text{III}_{1-x}\text{Mn}_x\text{V}$  Ferromagnetism: Spintronics in Semiconductors,” Argonne National Laboratory, Chicago, Illinois, June 2001.
185. “ $\text{III}_{1-x}\text{Mn}_x\text{V}$  Ferromagnetism: Spintronics in Semiconductors,” Georgia Tech, October 2001.
186. “Metallic Nanoparticles,” Georgia Tech, October 2001.
187. “ $\text{III}_{1-x}\text{Mn}_x\text{V}$  Ferromagnetism: Spintronics in Semiconductors,” University of Texas at Austin, Dept. of Electrical Engineering, October 2001.
188. “ $\text{III}_{1-x}\text{Mn}_x\text{V}$  Ferromagnetism: Spintronics in Semiconductors,” Oak Ridge National Lab, Computational Materials Institute, November 2001.
189. “Superfluid Properties of Quantum Hall Ferromagnets,” National High Magnetic Field Lab, Tallahassee, Florida, January 2002.
190. “Ferromagnetic Semiconductors,” University of California at San Diego, May 2002.
191. “Ferromagnetic Semiconductors”, University of Cincinnati, Oct. 2002.
192. “Ferromagnetic Semiconductors”, Johns Hopkins University, Oct. 2002
193. “Ferromagnetic Semiconductors”, Texas A&M University, Nov. 2002
194. “Ferromagnetic Semiconductors”, Cornell University, Nov., 2002
195. “Rapidly Rotating Bose Condensates”, University of North Carolina, Nov.2002
196. “Rapidly Rotating Bose Condensates”, Los Alamos National Lab., Dec. 2002.

197. “Superfluid Properties of Quantum Hall Ferromagnets”, Columbia University, Jan. 2003
198. “Ferromagnetic Transition Metal Nanoparticles”, Lancaster University, Jan.2003
199. “Weak-Coupling Theory of Cuprate Superconductors”, Columbia University, Jan. 2003.
200. “Progress in Theory of Ferromagnetism in Semiconductors/Intrinsic Spin-Hall Effec in Semiconductors”, DARPA Miniworkshop, April, 2003.
201. Materials Science Division at Argonne National Lab—review panel, Sept. 2003
202. “Ferromagnetism and Spin Transport in Semiconductors”, Maui,HI, Sept. 2003
203. “Excitonic BEC in Bilayer Quantum Hall Systems”, Alb, NM, Oct. 2003
204. “Diluted Magnetic Semiconductor Ferromagnetism”, Santa Monica, CA, Oct. 2003
205. “Ferromagnetism and Spin Transport in Semiconductors”, Barcelona, SP, Oct. 2003
206. “Excitonic BEC in Bilayer Quantum Hall Systems”, Texas A&M, Nov. 2003
207. “Ferromagnetism and Spin Transport in Semiconductors”, Nagoya, JP, Nov. 2003
208. “Ferromagnetism and Spin Transport in Semiconductors”, San Jose, CA, Feb. 2004
209. “Excitonic BEC in Bilayer Quantum Hall Systems”, University of Chicago, Feb. 2004
210. “Ferromagnetism and Spin Transport in Semiconductors”, Cal State Northridge, Mar. 2004
211. “Theory of Anomalous Transport”, Montreal, CA, Mar. 2004
212. “Ferromagnetism and Spin Transport in Semiconductors”, San Francisco, CA, Apr, 2004

213. “Excitonic BEC in Bilayer Quantum Hall Systems”, Penn State University, Apr. 2004
214. “Ferromagnetism and Spin Transport in Semiconductors”, Ohio University, Apr. 2004
215. “Ferromagnetism and Spin Transport in Semiconductors”, Trieste, IT, May 2004.
216. “Spin Transfer in Semiconductors” Osaka, JP, May 2004
217. “Excitonic BEC in Bilayer Quantum Hall Systems”, Pittsburg, PA, May 2004.
218. “Ferromagnetism and Spin Transport in Semiconductors”, Beijing, CH, June 2004.
219. “Spin Transfer in Semiconductors and Quantum Hall Bilayers”, Wuhan, CH, June 2004.
220. “Ferromagnetism and Spin Transport in Semiconductors”, Holyoke, MA, June 2004
221. “Spin Transfer in Semiconductors and Quantum Hall Bilayers”, St. Petersburg, RU, Jun. 2004
222. “Spin Transfer in Semiconductors and Quantum Hall Bilayers”, Gorky, RU, Jul. 2004
223. “Excitonic BEC in Bilayer Quantum Hall Systems”, Prague, CZ Rep, Jul. 2004
224. “Ferromagnetism and Spin Transport in Semiconductors”, Pacific Grove, CA, Jul 2004
- 225.

## PUBLICATIONS

1. +S.H. Vosko, J.P. Perdew and A.H. MacDonald, "Ab Initio Calculation of the Spin Susceptibility for the Alkali Metals Using the Density-Functional Formalism," *Phys. Rev. Lett.* **35**, 1725 (1975).
2. +A.H. MacDonald, J.P. Perdew and S.H. Vosko, "First Principles Calculations of the Volume Dependence of the Spin Susceptibility for Li and Na," *Solid State Comm.* **18**, 85 (1976).
3. +A.H. MacDonald and S.H. Vosko, "Variational-Principle Density-Functional Evaluation of the Spin Susceptibility for the Alkali Metals," *J. Low Temp. Phys.* **25**, 27 (1976).
4. +A.H. MacDonald, K.L. Liu and S.H. Vosko, "Theoretical Estimate of the Exchange Correlation Enhancement of the Spin Susceptibility of Scandium," *Phys. Rev. B* **16**, 777 (1977).
5. +K.L. Liu, A.H. MacDonald and S.H. Vosko, "Non-Local Exchange-Correlation Effects on the Spin Susceptibility and Thermal Density of States of Cu," *Can. J. Phys.* **55**, 1991 (1977).
6. +A.H. MacDonald, "Comment on Special Points for Brillouin-Zone Integrations," *Phys. Rev. B* **18**, 5897 (1978).
7. +K.L. Liu, A.H. MacDonald and S.H. Vosko, "Spin Susceptibility of Paramagnetic Nickel," *Proc. Int'l. Conf. Phys. Transition Metals, Inst. Phys. Conf.* **39**, 557 (1978).
8. \*S.H. Vosko, A.H. MacDonald and K.L. Liu, "Variational-Principle for the Wave-Vector Dependent Spin Susceptibility Paramagnetic and Ferromagnetic Systems," *Proc. Int'l. Conf. Phys. Transition Metals, Inst. Phys. Conf.* **39**, 33 (1978).
9. +A.H. MacDonald, "Density Functional Approximation for the Quasiparticle Dynamics of Rubidium," *J. Phys. F: Metal Physics* **9**, L99 (1979).
10. +A.H. MacDonald and S.H. Vosko, "Extensions of the Tetrahedron Method for the Evaluation of Spectral Properties of Solids," *J. Phys. C: Solid State Physics* **12**, 2991 (1979).
11. +A.H. MacDonald and S.H. Vosko, "Relativistic Density Functional Formalism," *J. Phys. C: Solid State Physics* **12**, 2977 (1979).
12. +K.L. Liu, A.H. MacDonald, J.M. Daams and S.H. Vosko, "Spin Density Functional Theory of the Temperature-Dependent Spin Susceptibility: Pd and Pt," *J. Magnetism and Magnetic Materials* **12**, 43 (1979).

13. +L. Wilk, A.H. MacDonald and S.H. Vosko, "Calculations of the Spin Susceptibilities and Their Volume Dependence for Li, Na and K," *Can. J. Phys.* **57**, 1065 (1979).
14. +A.H. MacDonald and M.J. Laubitz, "Comment on Low-Temperature Resistivity and Thermoelectric Ratio of Copper and Gold," *Phys. Rev. B* **21**, 2638 (1980).
15. +A.H. MacDonald and D.J.W. Geldart, "Electron-Electron Scattering and the Thermal Resistivity of Simple Metals," *J. Phys. F: Metal Physics* **10**, 677 (1980).
16. +A.H. MacDonald, M.W.C. Dharma-wardana and D.J.W. Geldart, "Density Functional Approximation for the Quasiparticle Dynamics of Simple Metals: I. Theory and Electron-Gas Calculations," *J. Phys. F: Metal Physics* **10**, 1719 (1980).
17. +A.H. MacDonald, "Density Functional Approximation for the Quasiparticle Dynamics of Simple Metals: II. Applications to Li, Rb and Cs," *J. Phys. F: Metal Physics* **10**, 1737 (1980).
18. +J.P. Jan, A.H. MacDonald and H.L. Skriver, "Prediction of Fermi surface Pressure-Dependence in Rb and Cs," *Phys. Rev. B* **21**, 5584 (1980).
19. +A.H. MacDonald, W.E. Pickett and D.D. Koelling, "A Linearized Relativistic Augmented Plane Wave Method Utilizing Approximate Pure Spin Basis Functions," *J. Phys. C: Solid State Physics* **13**, 2675 (1980).
20. +A.H. MacDonald, "Electron-Phonon Enhancement of Electron-Electron Scattering in Al," *Phys. Rev. Lett.* **44**, 489 (1980).
21. +R. Taylor and A.H. MacDonald, "Influence of Structure on the Phonon-Limited Resistivities of Li and Na," *J. Phys. F: Metal Physics* **10**, L181 (1980).
22. +A.H. MacDonald, K.L. Liu and S.H. Vosko, "Magnetic Form Factors of Paramagnetic Ni in a Stoner-Like Model," *J. Phys. F: Metal Physics* **10**, L207 (1980).
23. +Roger Taylor and A.H. MacDonald, "Harmonic Phonons and Phonon-Limited Resistivities for Rb and Cs from First Principles Pseudopotentials," *J. Phys. F: Metal Physics* **10**, 2387 (1980).
24. +A.H. MacDonald, K.L. Liu, S.H. Vosko and L. Wilk, "Influence of Non-locality in the Spin-Spin Interaction Functional on the Pauli Susceptibility of Li, Na and K," *Can. J. Phys.* **59**, 500 (1981).

25. +A.H. MacDonald, Roger Taylor and D.J.W. Geldart, "Umklapp Electron-Electron Scattering and the Low-Temperature Electrical Resistivity of the Alkali Metals," *Phys. Rev. B* **23**, 2718 (1981).
26. +A.H. MacDonald and D.J.W. Geldart, "A Tight-Binding Model for the Susceptibility Anisotropy of Metallic Transition Metal Dichalogenides," *Phys. Rev. B* **24**, 469 (1981).
27. +A.H. MacDonald, D.D. Koelling, J.M. Daams and S.H. Vosko, "Influence of Relativistic Contributions to the Effective Potential on the Electronic Structure of Pd and Pt," *Phys. Rev. B* **23**, 6377 (1981).
28. +A.H. MacDonald and Roger Taylor, "Ion-Ion Interactions in a Polarized Electron Gas," *Solid State Comm.* **38**, 995 (1981).
29. +A.H. MacDonald, R. Taylor and R.C. Shukla, "On the Identification of Phason Anomalies in the Low-Temperature Specific Heat of the Alkali Metals," *Phys. Rev. Lett.* **46**, 434 (1981).
30. +A.H. MacDonald, "Mass Enhancement in Strongly Para-magnetic Transition Metals," *Phys. Rev. B* **24**, 1130 (1981).
31. +C.R. Leavens, A.H. MacDonald, R. Taylor, N.H. March and F. Ferrez, "Finite Mean-Free-Path Effects in the Electrical Resistivity of Liquid Metals," *Phys. Chem. Liq.* **11**, 115 (1981).
32. +A.H. MacDonald, "Electron-Electron Interactions in Simple and Transition Metals," *Can. J. Phys.* **60**, 710 (1982).
33. +A.H. MacDonald, "Transition-Metal  $g$  Factor Trends," *J. Phys. F: Metal Physics* **12**, 2579 (1982).
34. +A.H. MacDonald and C.P. Burgess, "Absence of Crystallization in Metallic Hydrogen," *Phys. Rev. B* **26**, 2849 (1982).
35. +A.H. MacDonald and D.J. W. Geldart, "A Comparison of Approximations for the Elastic Electron-Electron Scattering Amplitude in Jellium," *Can. J. Phys.* **60**, 1016 (1982).
36. +A.H. MacDonald, D.D. Koelling, J.M. Daams and S.H. Vosko, "Non-Muffin-Tin and Relativistic Interaction Effects on the Electronic Structure of Noble Metals," *Phys. Rev. B* **25**, 713 (1982).
37. +A.H. MacDonald and C.R. Leavens, "Calculated Point-Contact Electron-Phonon Spectral Functions for the Alkali Metals," *Phys. Rev. B* **26**, 4293 (1982).

38. +A.H. MacDonald and C.R. Leavens, "Influence of Electron-Electron Scattering on Point-Contact Characteristics in Simple Metals," *J. Phys. F: Metal Physics* **12**, 2323 (1982).
39. +A.H. MacDonald and R. Taylor, "Evidence for Phasons in Potassium is Inconclusive," *Phys. Rev. Lett.* **48**, 1505 (1982).
40. +C.R. Leavens, A.H. MacDonald and D.J.W. Geldart, "Comment on Anisotropic Superconductors with Repulsive Average Interaction," *Phys. Rev. B* **26**, 3960 (1982).
41. +C.R. Leavens, A.H. MacDonald and R. Taylor, "Calculated Pressure Dependence of the Electron Quasiparticle Mass for Na and K," *Phys. Rev. B* **27**, 1352 (1983).
42. +A.H. MacDonald, "Compressibility of Liquid Metallic Hydrogen," *Phys. Rev. B* **27**, 6472 (1983).
43. +A.H. MacDonald, "Landau-Level Subband Structure of Electrons on a Square Lattice," *Phys. Rev. B* **28**, 6713 (1983).
44. +A.H. MacDonald, "Quantized Hall Conductance in a Relativistic Two-Dimensional Electron Gas," *Phys. Rev. B* **28**, 2235 (1983).
45. +A.H. MacDonald, "Spin-Polarized Relativistic Exchange Energies and Potentials," *J. Phys. C: Solid State Physics* **16**, 3869 (1983).
46. +A.H. MacDonald and M. Plischke, "Study of the Driven-Damped Pendulum: Application to Josephson Junctions and Charge-Density-Wave Systems," *Phys. Rev. B* **27**, 20 (1983).
47. +A.H. MacDonald and C.R. Leavens, "Influence of Elastic Scattering on the Current-Voltage Characteristics of Small Metallic Contacts: I. The Ohmic Current," *J. Phys. F: Metal Physics* **13**, 665 (1983).
48. +A.H. MacDonald, T.M. Rice and W.F. Brinkman, "Hall Voltage and Current Distributions in an Ideal Two-Dimensional System," *Phys. Rev. B* **28**, 3648 (1983).
49. +P.T. Coleridge and A.H. MacDonald, "Fermi Surface Pressure Dependence in Potassium," *Can. J. Phys.* **61**, 411 (1983).
50. #D.D. Koelling and A.H. MacDonald, "Relativistic Effects in Metals," *NATO ASI B, Physics* **87**, 227 (1983).
51. +C.R. Leavens and A.H. MacDonald, "Determination of the Electron-Paramagnon Coupling Parameter of a Transition Metal from Superconducting Tunneling Experiments," *Phys. Rev. B* **27**, 2812 (1983).



52. +A.H. MacDonald, "Edge States and Quantized Hall Conductivity in a Periodic Potential," *Phys. Rev. B* **29**, 6563 (1984).
53. +A.H. MacDonald, "Influence of Landau-Level Mixing on the Charge-Density-Wave State of A Two-Dimensional Electron Gas in a Strong Magnetic Field," *Phys. Rev. B* **30**, 4392 (1984).
54. +A.H. MacDonald, "Laughlin States in Higher Landau Levels," *Phys. Rev. B* **30**, 3550 (1984).
55. #A.H. MacDonald, "Local Density Approximations for Relativistic Exchange Energies," in *Local Density Approximations in Quantum Chemistry and Solid State Physics*, edited by J.P. Dahl and J. Avery (Plenum Press, New York City 1984), pp. 617–634.
56. +A.H. MacDonald, "Quantized Hall Effect in a Hexagonal Periodic Potential," *Phys. Rev. B* **29**, 3057 (1984).
57. +A.H. MacDonald and G.C. Aers, "Inversion Layer Width, Electron-Electron Interactions, and the Fractional Quantum Hall Effect," *Phys. Rev. B* **29**, 5976 (1984).
58. +A.H. MacDonald and C.R. Leavens, "Influence of Contact Shape on the Strength of the Electron-Phonon Interaction as Determined by Point Contact Spectroscopy," *Solid State Comm.* **50**, 467 (1984).
59. +A.H. MacDonald and C.R. Leavens, "Influence of Elastic Scattering on the Current-Voltage Characteristics of Small Metallic Contacts: II. Point-Contact Spectroscopy," *J. Phys. F: Metal Physics* **14**, 963 (1984).
60. +A.H. MacDonald and Roger Taylor, "Pair-Potentials and the Bonding Energy of d-Band Metals," *Can. J. Phys.* **62**, 796 (1984).
61. +A.H. MacDonald and P. Streda, "Quantized Hall Effect and Edge Currents," *Phys. Rev. B* **29**, 1616 (1984).
62. +G.C. Aers and A.H. MacDonald, "Enclosed Flux Dependence of the Eigenvalue Spectrum: Localization and Quantized Hall Conductivity in a Two-Dimensional Electron Gas," *J. Phys. C: Solid State Physics* **17**, 5491(1984).
63. +D. Levesque, J.J. Weis and A.H. MacDonald, "Crystallization of the Incompressible Quantum-Fluid State of a Two-Dimensional Electron Gas in a Strong Magnetic Field," *Phys. Rev. B* **30**, 1056 (1984).

64. +P.M. Platzman, S.M. Girvin and A.H. MacDonald, “ac Conductivity in the Fractionally Quantized Hall Effect,” *Phys. Rev. B* **32**, 8458 (1985).
65. +A.H. MacDonald, “Hartree-Fock Approximation for the Response Functions and Collective Excitations in a Two-Dimensional Electron Gas with Filled Landau Levels,” *J. Phys. C: Solid State Physics* **18**, 1003 (1985).
66. +A.H. MacDonald, H.C.A. Oji and S.M. Girvin, “Magnetoplasmon Excitations from Partially Filled Landau Levels in Two Dimensions,” *Phys. Rev. Lett.* **55**, 2208 (1985).
67. +A.H. MacDonald, G.C. Aers and M.W.C. Dharma-wardana, “Hierarchy of Plasmas for Fractional Quantum Hall States,” *Phys. Rev. B* **31**, 5529 (1985).
68. +A.H. MacDonald and D.B. Murray, “Broken Symmetry States for Two-Dimensional Electrons in a Strong Magnetic Field,” *Phys. Rev. B* **32**, 2291 (1985).
69. +A.H. MacDonald and D.B. Murray, “Droplet Wave Functions for the Fractional Quantum Hall Effect,” *Phys. Rev. B* **32**, 2707 (1985).
70. +H.U. Baranger, A.H. MacDonald and C.R. Leavens, “Heterocontact Effects in Point-contact Electron-Phonon Spectroscopy of the Alkali Metals,” *Phys. Rev. B* **31**, 6197 (1985).
71. +S.M. Girvin, A.H. MacDonald and P.M. Platzman, “Collective Excitations in the Fractional Quantum Hall Effect,” *Phys. Rev. Lett.* **54**, 581 (1985).
72. +Mark Rasolt, F. Perrot and A.H. MacDonald, “New Gapless Modes in the Fractional Quantum Hall Effect of Multicomponent Systems,” *Phys. Rev. Lett.* **55**, 433 (1985).
73. +A.H. MacDonald and S.M. Girvin, “Collective Excitations of Fractional Hall States and Wigner Crystallization in Higher Landau Levels,” *Phys. Rev. B* **33**, 4009 (1986).
74. +A.H. MacDonald and S.M. Girvin, “Quasiparticle States and the Fractional Quantum Hall Effect,” *Phys. Rev. B* **33**, 4414 (1986).
75. +A.H. MacDonald, K.L. Liu, S.M. Girvin and P.M. Platzman, “Disorder and the Fractional Quantum Hall Effect: Activation Energies and the Collapse of the Gap,” *Phys. Rev. B* **33**, 4014 (1986).
76. #A.H. MacDonald and R. Taylor, “Fermi Surfaces,” *Encyclopedia of Materials Science and Engineering* (Pergamon Press, New York City, 1986), 1682–1685.

77. +A.H. MacDonald and D.S. Ritchie, "Hydrogenic Energy Levels in Two Dimensions at Arbitrary Magnetic Fields," *Phys. Rev. B* **33**, 8336 (1986).
78. \*S.M. Girvin, A.H. MacDonald and P.M. Platzman, "Fractional Quantum Hall Effect: Superfluidity, Magneto-Rotons and Fractionally Charged Vortices," *J. Magnetism and Magnetic Materials* **54**, 1428 (1986).
79. +S.M. Girvin, A.H. MacDonald and P.M. Platzman, "Magnetoroton Theory of Collective Excitations in the Fractional Quantum Hall Effect," *Phys. Rev. B* **33**, 2481 (1986).
80. +H.C.A. Oji and A.H. MacDonald, "Magnetoplasma Modes of the Two-Dimensional Electron Gas at Nonintegral Filling Factors," *Phys. Rev. B* **33**, 3810 (1986).
81. +H.C.A. Oji and A.H. MacDonald, "Magnetoplasmon-Phonon Coupling in a Two-Dimensional Electron Gas," *Phys. Rev. B* **34**, 1371 (1986).
82. +A.H. MacDonald and G.C. Aers, "Size Dependence in Small System Calculations for Fractional Quantum Hall States," *Phys. Rev. B* **34**, 2906 (1986).
83. +A.H. MacDonald, H.C.A. Oji and K.L. Liu, "Thermodynamic Properties of an Interacting Two-Dimensional Electron Gas in a Strong Magnetic Field," *Phys. Rev. B* **34**, 2681 (1986).
84. +Mark Rasolt and A.H. MacDonald, "Collective Excitations in the Fractional Quantum Hall Effect of a Multicomponent System," *Phys. Rev. B* **34**, 5530 (1986).
85. +A.H. MacDonald and S.M. Girvin, "Quasiparticle States in the Fractional Quantum Hall Effect," *Phys. Rev. B* **34**, 5639 (1986).
86. +R. Taylor and A.H. MacDonald, "Density-Wave Instabilities and Thermo-electric Parameters in the Alkali Metals," *Phys. Rev. Lett.* **57**, 1639 (1986).
87. \*A.H. MacDonald and G.W. Bryant, "Charge-Density-Wave States in Multiple-Quantum-Well Systems," *Superlattices and Microstructures* **3**, 257(1987).
88. \*Garnett W. Bryant, D.B. Murray and A.H. MacDonald, "Electronic Structure of Single Ultrasmall Electron Devices and Device Arrays," *Superlattices and Microstructures* **3**, 211 (1987).
89. +Z. Schlesinger, W.J. Wang and A.H. MacDonald, "Dynamical Conductivity of the GaAs Two-Dimensional Electron Gas at Low Temperature and Carrier Density," *Phys. Rev. Lett.* **58**, 73 (1987).

90. +A.H. MacDonald and Garnett W. Bryant, "Strong Magnetic-Field States of the Pure Electron Plasma," *Phys. Rev. Lett.* **58**, 515 (1987).
91. +H.C.A. Oji, A.H. MacDonald and S.M. Girvin, "Superlattice Magnetoroton Bands," *Phys. Rev. Lett.* **58**, 824 (1987).
92. +S.M. Girvin and A.H. MacDonald, "Off-Diagonal Long-Range Order, Oblique Confinement and the Fractional Quantum Hall Effect," *Phys. Rev. Lett.* **58**, 1252 (1987).
93. +M.W.C. Dharma-wardana, A.H. MacDonald, D.J. Lockwood, J.M. Baribeau and D.C. Houghton, "Raman Scattering in Fibonacci Superlattices," *Phys. Rev. Lett.* **58**, 1761 (1987).
94. +D.J. Lockwood, A.H. MacDonald, G.C. Aers, M.W.C. Dharma-wardana, R.L.S. Devine and W.T. Moore, "Raman Scattering in a GaAs/Ga<sub>1-x</sub>Al<sub>x</sub>As Fibonacci Superlattice," *Phys. Rev. B* **36**, 9286 (1987).
95. +P. Streda, J. Kucera and A.H. MacDonald, "Edge States, Transmission Matrices and the Hall Resistance," *Phys. Rev. Lett.* **59**, 1973 (1987).
96. +A.H. MacDonald and G.C. Aers, "Continuum Model Acoustic and Electronic Properties for a Fibonacci Superlattice," *Phys. Rev. B* **36**, 9142 (1987).
97. #A.H. MacDonald, "Theory of the Fractional Quantum Hall Effect," in *Proceedings of the 5th International Conference on Recent Progress in Many-Body Theories*, edited by A.J. Kallio, E. Pajanne and R.F. Bishop (Plenum, New York, 1988), p. 83.
98. #A.H. MacDonald, "Fibonacci Superlattices," in *NATO ASI on Interfaces, Quantum Wells and Superlattices*, edited by C.R. Leavens and Roger Taylor (Plenum, New York, 1988), p. 347.
99. +A.H. MacDonald, "Staging Transitions in a Multiple Quantum Well System," *Phys. Rev. B* **37**, 4792 (1988).
100. +A.H. MacDonald, H.C.A. Oji and Garnett W. Bryant, "Hartree-Fock Theory for a Superlattice in a Strong Magnetic Field," *Phys. Rev. B* **38**, 8249 (1988).
101. +A.H. MacDonald, S.M. Girvin and D. Yoshioka, "On the  $t/U$  expansion for the Hubbard model," *Phys. Rev. B* **37**, 9753 (1988).
102. +A.H. MacDonald and S.M. Girvin, "Density matrices in the lowest Landau level of a two-dimensional electron gas," *Phys. Rev. B* **38**, 6295 (1988).

103. +D. Yoshioka, A.H. MacDonald and S.M. Girvin, "Connection Between Spin Singlet and Hierarchical Wavefunctions in the Fractional Quantum Hall Effect," *Phys. Rev. B* **38**, 3636 (1988).
104. +D. Yoshioka, A.H. MacDonald and S.M. Girvin, "Fractional Quantum Hall Effect in Two-layered Systems," *Phys. Rev. B* **39**, 1932 (1989).
105. +A.H. MacDonald, D. Yoshioka and S.M. Girvin, "A Comparison of Models for the  $\nu = 5/2$ , Fractional Quantum Hall Effect," *Phys. Rev. B* **39**, 8044 (1989).
106. +R.J. Haug, A.H. MacDonald, P. Streda and K. von Klitzing, "Quantized Multi-channel Magnetotransport through a Barrier in Two Dimensions," *Phys. Rev. Lett.* **61**, 2797 (1988).
107. +A.H. MacDonald and U. Ekenberg, "The Fractional Quantum Hall Effect in Holes," *Phys. Rev. B* **39**, 5959 (1989).
108. +P. Streda, J. Kucera and A.H. MacDonald, "Transmission Probabilities and the Quantum Hall Effect," (Reply to Comment) *Phys. Rev. Lett.* **62**, 230 (1989).
109. +A.H. MacDonald and C. Kallin, "Cyclotron Resonance in Two Dimensions: Electron-electron Interactions and Band Nonparabolicity," *Phys. Rev. B* **40**, 5795 (1989).
110. +Xiu Qiu, Robert Joynt and A.H. MacDonald, "Phases of a multiple quantum well in a magnetic field," *Phys. Rev. B* **40**, 11943 (1989).
111. +A.H. MacDonald, "Edge States in the Fractional Hall Regime," *Phys. Rev. Lett.* **64**, 220 (1990).
112. +S.R.E. Yang and A.H. MacDonald and D. Yoshioka, "Fractional quantum Hall Effect in hole Landau levels," *Phys. Rev. B* **41**, 1290 (1990).
113. +S.R.E. Yang and A.H. MacDonald, "Hole magnetoplasmons in semiconductor heterostructures," *Phys. Rev. B* **41**, 1294 (1990).
114. +A.H. MacDonald, S.M. Girvin, and D. Yoshioka, "Reply to Comment on  $t/U$  expansion of the Hubbard model," *Phys. Rev. B* **41**, 2565 (1990).
115. +James Leo and A.H. MacDonald, "Disorder assisted tunneling through a double-barrier structure," *Phys. Rev. Lett* **64**, 817 (1990).
116. +Dimitri Antoniou, A.H. MacDonald, and James C. Swihart, "Collective oscillations in a disordered two-dimensional electron gas at strong magnetic fields," *Phys. Rev. B* **41**, 5440 (1990).

117. \*A.H. MacDonald, "The fractional quantum Hall effect in multi-component systems," *Surface Science* **229**, 1 (1990).
118. +Pavel Streda and A.H. MacDonald, "Magnetic breakdown and magnetoresistance oscillations in a periodically modulated two-dimensional electron gas," *Phys. Rev. B* **41**, 11892 (1990).
119. +Lian Zheng, W.L. Schaich, and A.H. MacDonald, "Theory of two-dimensional grating couplers," *Phys. Rev. B* **41**, 8493 (1990).
120. \*T.A. Gant, D.J. Lockwood, J.M. Baribeau and A.H. MacDonald, "Raman Scattering from Phonons in Quasiperiodic Superlattices based on Generalizations of the Fibonacci Sequence," in *Spectroscopy of Superlattice Microstructures* edited by G. Fasol, A. Fasolino, and P. Lugli (Plenum, New York, 1990).
121. \*T.A. Gant, D.J. Lockwood, J.M. Baribeau and A.H. MacDonald, "Raman Scattering Studies of Phonons in Quasiperiodic Superlattices," *Surface Science* **228**, 135 (1990).
122. +A.H. MacDonald, P.M. Platzman and G.S. Boebinger, "Collapse of Integer Hall Gaps in a Double-Quantum-Well System," *Phys. Rev. Lett.* **65**, 775 (1990).
123. +S.R. Eric Yang and A.H. MacDonald, "Stress and the van Hove Singularities of Hole Magnetoplasmons," *Surface Science* **229**, 402 (1990).
124. +S.M. Girvin, A.H. MacDonald, Matthew P.A. Fisher, Soo-Jong Rey, and James P. Sethna, "Exactly Soluble Model of Fractional Statistics," *Phys. Rev. Lett.* **65**, 1671 (1990).
125. +M. Wassermeier, J. Oshinowo, J.P. Kotthaus, A.H. MacDonald, C.T. Foxon, and J.J. Harris, "Edge magnetoplasmons in the fractional-quantum-Hall-effect regime," *Phys. Rev. B* **41**, 10287 (1990).
126. +C. Gros and A.H. MacDonald, "Conjecture concerning the fractional Hall hierarchy," *Phys. Rev. B* **42**, 9514 (1990).
127. +S.R. Eric Yang and A.H. MacDonald, "Impurity-level transitions in two-dimensional magnetoplasmas," *Phys. Rev. B* **42**, 10811 (1990).
128. +A.H. MacDonald and E.H. Rezayi, "Fractional Quantum Hall effect in a two-dimensional electron-hole fluid," *Phys. Rev. B* **42**, 3224 (1990).
129. +Xiu Qiu, Robert Joynt, and A.H. MacDonald, "Phase transitions in a multiple quantum well in strong magnetic fields," *Phys. Rev. B* **42**, 1339 (1990).

130. +René Côté and A.H. MacDonald, “Phonons as Collective Modes: The Case of a Two-Dimensional Wigner Crystal in a Strong Magnetic Field,” *Phys. Rev. Lett.* **65**, 2662 (1990).
131. +Daijiro Yoshioka and A.H. MacDonald, “Double Quantum Well Electron-Hole Systems in Strong Magnetic Fields,” *J. Phys. Soc. Jpn.* **59**, 4211 (1990).
132. +B. Tanatar, M. Singh, and A.H. MacDonald, “Self-consistent Landau-level Broadening by acoustic phonons in two-dimensional electron systems,” *Phys. Rev. B* **43**, 4308 (1991).
133. #A.H. MacDonald and S.M. Girvin, “New Evidence for the Wigner Crystal,” *Physics World* **3**, 17 (1990).
134. +James Leo and A.H. MacDonald, “Disorder-assisted tunneling through a double-barrier resonant-tunneling structure,” *Phys. Rev. B* **43**, 9763 (1991).
135. +T.J. Gramila, J.P. Eisenstein, A.H. MacDonald, L.N. Pfeiffer and K.W. West, “Mutual Friction between Parallel Two-Dimensional Electron Systems,” *Phys. Rev. Lett.* **66**, 1216 (1991).
136. +Dimitri Antoniou and A.H. MacDonald, “Nuclear-spin relaxation and spin-wave collective modes in a disordered two-dimensional electron gas,” *Phys. Rev. B* **43**, 11686 (1991).
137. #A.H. MacDonald, “The Quantum Hall Effects,” in *Quantum Coherence in Mesoscopic Systems* edited by B. Kramer (Plenum, New York, 1991).
138. \*S.R.E. Yang and A.H. MacDonald, “Filling Factor Dependence of Impurity Levels of Two-Dimensional Magnetoplasmons,” in *Proceedings of the 20th International Conference on the Physics of Semiconductors* edited by E.M. Anastassakis and J.D. Joannopoulos (World Scientific, Tessaioniki, 1991).
139. +René Côté and A.H. MacDonald, “Collective modes of the two-dimensional Wigner crystal in a strong magnetic field,” *Phys. Rev. B* **44**, 8759 (1991).
140. +E.H. Rezayi and A.H. MacDonald, “Origin of the  $\nu = 2/5$  fractional quantum Hall effect,” *Phys. Rev. B* **44**, 8395 (1991).
141. \*M.R. Norman, H. Akera, and A.H. MacDonald, “Landau Quantization and Superconductivity at Strong Magnetic Fields,” in *Physical Phenomena at High Magnetic Fields* edited by E. Manousakis, P. Schlottmann, P. Umar, K.S. Bedell, and F.M. Mueller (Addison-Wesley, New York, 1991).
142. +H. Akera, A.H. MacDonald, S.M. Girvin, and M.R. Norman, “Vortex-Lattice States at Strong Magnetic Fields,” *Phys. Rev. Lett.* **67**, 2375 (1991).

143. +M.D. Johnson and A.H. MacDonald, "Composite Edges in the  $\nu = 2/3$  Fractional Quantum Hall Effect," *Phys. Rev. Lett.* **67**, 2060 (1991).
144. +K. Karrai, X. Ying, H.D. Drew, M. Santos, M. Shayegan, S.R.E. Yang, and A.H. MacDonald, "Magnetorotons in Quasi-Three-Dimensional Electron Systems," *Phys. Rev. Lett.* **67**, 3428 (1991).
145. \*M.D. Johnson and A.H. MacDonald, "Edge states and quasiparticles in the fractional quantum Hall effect," in *Physical Phenomena at High Magnetic Fields* edited by E. Manousakis, P. Schlottmann, P. Kumar, K.S. Bedell, and F.M. Mueller (Addison-Wesley, New York, 1991), p. 102.
146. \*R. Côté and A.H. MacDonald, "Frequency-dependent conductivity of a pinned Wigner crystal," *Surface Science* **263**, 187 (1992).
147. +A.H. MacDonald, H. Akera, and M.R. Norman, "Landau quantization and particle-particle ladder sums in a magnetic field," *Phys. Rev. B* **45**, 10147 (1992).
148. +M.R. Norman, H. Akera, and A.H. MacDonald, "Mean-field superconductivity in a strong magnetic field," *Physica C* **196**, 43 (1992).
149. #A.H. MacDonald, "Fractional quantum Hall theory survives experimental tests," *Physics World* **5**, 28 (1992).
150. +A.H. MacDonald, E.H. Rezayi, and David Keller, "Photoluminescence in the fractional quantum Hall regime," *Phys. Rev. Lett.* **68**, 1939 (1992).
151. +A.P. Smith, A.H. MacDonald, and G. Gumbs, "Quasiparticle effective mass and enhanced g-factor for a two-dimensional electron gas at intermediate magnetic fields," *Phys. Rev. B* **45**, 8829 (1992).
152. +H. Akera, A.H. MacDonald, and M.R. Norman, "Landau Level Quantization and Superconductivity," *Physica B* **184**, 337 (1993).
153. \*A.H. MacDonald "Facts and Fantasies in FQHE Theory, *Helvetica Physica Acta* **65**, 133 (1992).
154. +T.J. Gramila, J.P. Eisenstein, A.H. MacDonald, L.N. Pfeiffer, and K.W. West, "Electron-electron scattering between parallel 2-Dimensional Electron Gases," *Surface Science* **263**, 446 (1992).
155. +K. Karrai, X. Ying, H.D. Drew, M. Santos, M. Shayegan, S.R.E. Yang, and A.H. MacDonald, "Magnetorotons in Wide Parabolic Quantum Wells," *Surface Science* **263**, 451 (1992).



156. +A.H. MacDonald, "Two-Dimensional D<sup>-</sup> Centers in the Strong Magnetic Field Limit," *Solid State Comm.* **84**, 109 (1992).
157. +W.L. Schaich and A.H. MacDonald, "Confined Plasmons," *Solid State Comm.* **83**, 779 (1992).
158. +R. Côté, L. Brey and A.H. MacDonald, "Broken-symmetry ground states for the two-dimensional electron gas in a double-quantum-well system," *Phys. Rev. B* **46**, 10239 (1992).
159. +P.W. Park, A.H. MacDonald, and W.L. Schaich, "Density response in laterally modulated two-dimensional electron systems," *Phys. Rev. B* **46**, 12635 (1992).
160. +W.L. Schaich, P.W. Park, and A.H. MacDonald, "Infrared absorption by laterally modulated two-dimensional electron systems," *Phys. Rev. B* **46**, 12643 (1992).
161. +J. Hu and A.H. MacDonald, "Electronic structure of parallel two-dimensional electron systems in tilted magnetic fields," *Phys. Rev. B* **46**, 12554 (1992).
162. +H. Fertig, R. Côté, A.H. MacDonald, and S. Das Sarma, "Edge reconstruction and edge melting of the two-dimensional Wigner crystal in a strong magnetic field," *Phys. Rev. Lett.* **69**, 816 (1992).
163. +Dimitri Antoniou and A.H. MacDonald, "Magnetoplasmons and cyclotron resonance in disordered two-dimensional electronic systems," *Phys. Rev. B* **46**, 15225 (1992).
164. +Ulrich Wulf, Honza Kucera and A.H. MacDonald, "Giant oscillations in the Hall conductivity of weakly coupled quantum wires," *Phys. Rev. B* **47**, 1675 (1993).
165. +Lian Zheng and A.H. MacDonald "Tunneling conductance between parallel two-dimensional electron systems," *Phys. Rev. B* **47**, 10619 (1993).
166. +A.H. MacDonald, and M.D. Johnson, "Magnetic Oscillations in a Fractional Hall Dot," *Phys. Rev. Lett.* **70**, 3107 (1993).
167. +A.H. MacDonald, Hiroshi Akera and M.R. Norman, "Quantum Mechanics and Superconductivity in a Magnetic Field," *Australian Journal of Physics* **46**, 333 (1993).
168. +A.H. MacDonald, S.R. Eric Yang, and M.D. Johnson, "Quantum Dots in Strong Magnetic Fields: Stability Criteria for the Maximum Density Droplet," *Australian Journal of Physics* **46**, 345 (1993).

169. #A.H. MacDonald “Microscopic Theory of the Fractional Quantum Hall Effect,” in *Strongly Correlated Electron Systems*, edited by M.P. Das and David Neilson (Nova, New York, 1993.)
170. +S.R. Eric Yang and A.H. MacDonald, “Coulomb Gaps in a Strong Magnetic Field,” *Phys. Rev. Lett.* **70**, 4110 (1993).
171. \*A.H. MacDonald, “2D-Liquids and Solids in Strong Magnetic Fields,” in *Low-Dimensional Electronic Systems* edited by G. Bauer, F. Kuchar, and H. Heinrich (Springer-Verlag, Berlin, 1993), p.189.
172. +Sami Mitra and A.H. MacDonald, “Angular-momentum-state occupation-number distribution function of the Laughlin droplet,” *Phys. Rev. B* **48**, 2005 (1993).
173. +Jun Hu and A.H. MacDonald, “Two-dimensional Vortex Lattice Melting,” *Phys. Rev. Lett.* **71**, 432 (1993).
174. +Danhong Huang, Godfrey Gumbs and A.H. MacDonald, “Comparison of magnetotransport in two-dimensional arrays of quantum dots and antidots,” *Phys. Rev. B* **48**, 2843 (1993).
175. +Lian Zheng and A.H. MacDonald, “Coulomb drag between disordered two-dimensional electron-gas layers,” *Phys. Rev. B* **48**, 8203 (1993).
176. +T.J. Gramila, J.P. Eisenstein, A.H. MacDonald, L.N. Pfeiffer, and K.W. West, “Evidence for virtual-phonon exchange in semiconductor heterostructures,” *Phys. Rev. B* **47**, 12957 (1993).
177. +Ulrich Wulf and A.H. MacDonald, “Disorder broadening of the Hofstadter spectrum,” *Phys. Rev. B* **47**, 6566 (1993).
178. +S.R. Eric Yang, A.H. MacDonald, and M.D. Johnson, “Addition Spectra of Quantum Dots in Strong Magnetic Fields,” *Phys. Rev. Lett.* **71**, 3194 (1993).
179. +Kun Yang, K. Moon, L. Zheng, A.H. MacDonald, S.M. Girvin, D. Yoshioka, and Shou-Cheng Zhang, “Quantum Ferromagnetism and Phase Transitions in Double-Layer Quantum Hall Systems,” *Phys. Rev. Lett.* **72**, 732 (1994).
180. +Lian Zheng and A.H. MacDonald, “Correlation in double-layer two-dimensional electron-gas systems: Singwi-Tosi-Land-Sjolander theory at  $B=0$ ,” *Phys. Rev. B* **49**, 5522 (1994).
181. +Lian Zheng and A.H. MacDonald, “High temperature perturbation study of two-dimensional interacting electrons in a partly-filled Landau level,” *Surface Science* **305**, 101 (1994).

182. #A.H. MacDonald, "Microscopic Theory of the Fractional Quantum Hall Effect," in *Modern Perspectives in Many-Body Theory: Proceedings of the of the 6th Australian National University Physics Summer School* edited by M.P. Das and J. Mahanty (World Scientific, Singapore, 1994).
183. +A.H. MacDonald and Shou-Cheng Zhang, "Collective Excitations in Double-Layer Quantum Hall Systems," *Phys. Rev. B* **49**, 17208 (1994).
184. +Hiroshi Akera, A.H. MacDonald, and Daijiro Yoshioka, "Bound Electron Pairs in Two Dimensions at Quantizing Magnetic Fields," *Physica B* **201**, 255 (1994).
185. \*A.H. Mac Donald, "One and One-Half: Frontiers in FQHE theory," *Physica B* **201**, 321 (1994).
186. +Jun Hu and A.H. MacDonald, "Correlations in Two-Dimensional Vortex Liquids," *Phys. Rev. B* **49**, 15263 (1994).
187. +H.A. Fertig, L. Brey, R. Côté, and A.H. MacDonald, "Charged spin-texture excitations and the Hartree-Fock approximation in the quantum Hall effect," *Phys. Rev. B* **50**, 11018 (1994).
188. +P. Streda, J. Kucera, D. Pfannkuche, R.R. Gerhardtts, and A.H. MacDonald, "Edge-state properties and bulk eigenenergy spectra of periodically modulated two-dimensional electron systems in a magnetic field," *Phys. Rev. B* **50**, 11955 (1994).
189. #A.H. MacDonald, "Fractional charges in an Interacting Electron System," *Science* **267**, 977 (1995).
190. +K. Moon, H. Mori, Kun Yang, S.M. Girvin, and A.H. MacDonald, L. Zheng, D. Yoshioka, and Shou-cheng Zhang, "Spontaneous Interlayer Coherence in Double-Layer Quantum Hall Systems: Charged Vortices and Kosterlitz-Thouless Phase Transitions," *Phys. Rev. B* **51**, 5138 (1995).
191. +M.R. Norman, A.H. MacDonald, and Hiroshi Akera, "Magnetic Oscillations and Quasiparticle Bandstructure in the Mixed State of Type-II Superconductors," *Phys. Rev. B* **51**, 5927 (1995).
192. #Anthony Chan and A.H. MacDonald, "On the Thermodynamics of Laughlin Liquid Freezing," in *Physics of Quantum Solids of Electrons* edited by S.T. Chui (International Press, Hong Kong, 1994).
193. +S.R. Eric Yang, A.H. MacDonald and Bodo Huckestein, "Interactions, Localization, and the Integer Quantum Hall Effect," *Phys. Rev. Lett.* **74**, 3229 (1995).

194. +Kun Yang and A.H. MacDonald, “Charged pseudospin textures in double-layer quantum Hall systems with spontaneous interlayer coherence,” *Phys. Rev. B* **51**, 17247 (1995).
195. +R. Côté, L. Brey, H. Fertig, and A.H. MacDonald, “Collective modes of soliton-lattice states in double-quantum-well systems,” *Phys. Rev. B* **51**, 13475 (1995).
196. +Jun Hu and A.H. MacDonald, “Participation-ratio entropy and critical fluctuations in the thermodynamics of pancake vortices,” *Phys. Rev. B* **52**, 1286 (1995).
197. +Yong Wang and A.H. MacDonald, “Mixed-state quasiparticle spectrum for d-wave superconductors,” *Phys. Rev. B* **52**, R3876 (1995).
198. \*T.J. Gramila, J.P. Eisenstein, A.H. MacDonald, L.N. Pfeiffer, and K.W. West, *Physica B* **197**, 442 (1994).
199. +L. Brey, H.A. Fertig, R. Côté and A.H. MacDonald, “Skyrme Crystal in a Two-Dimensional Electron Gas,” *Phys. Rev. Lett.* **75**, 2562 (1995).
200. +Marcus Kasner and A.H. MacDonald, “Itinerant Electron Magnetism in the quantum Hall regime,” *Physica B* **212**, 289 (1995).
201. \*H. Akera, A.H. MacDonald, and D. Yoshioka, “Higher Landau levels and electron correlations,” *Physica B* **212**, 273 (1995).
202. +J.J. Palacios and A.H. MacDonald, “Numerical Tests of the Chiral Luttinger Liquid Theory for Fractional Hall Edges,” *Phys. Rev. Lett.* **76**, 118 (1996).
203. #A.H. MacDonald, “Introduction to the Physics of the Quantum Hall Regime,” in *Proceedings of the Les Houches Summer School on Mesoscopic Physics* edited by E. Akkermans, G. Montambaux, and J.L. Pichard (Elsevier, Amsterdam, 1995).
204. +Rudolf Haussmann, Hiroyuki Mori, and A.H. MacDonald, “Correlation Energy and the Tunneling Density of States in the Fractional Quantum Hall Regime,” *Phys. Rev. Lett.* **76**, 979 (1996).
205. \*J. Hu, E. Dagatto, and A.H. MacDonald, “Interlayer Coherence in Double-Layer Quantum Dots,” in *Physical Phenomena at High Magnetic Fields II* edited by Z. Fisk, L.P. Gor'kov, D. Meltzer, and J.R. Schrieffer (World Scientific, Singapore, 1996).
206. +A.H. MacDonald, H.A. Fertig, and Luis Brey, “Skyrmions without Sigma Models in Quantum Hall Ferromagnets,” *Phys. Rev. Lett.* **76**, 2153 (1996).
207. +Dimitri Antoniou and A.H. MacDonald, “Large-U cluster-Hamiltonian expansion of the Hubbard model,” *Phys. Rev. B* **53**, 6855 (1996).

208. +T. Jungwirth and A.H. MacDonald, "Electron-electron interactions and two-dimensional-two-dimensional tunneling," *Phys. Rev. B* **53**, 7403 (1996).
209. +Giovanni Vignale and A.H. MacDonald, "Drag in Paired Electron-Hole Layers," *Phys. Rev. Lett.* **76**, 2786 (1996).
210. +A.H. MacDonald, "Compressible Strips, Chiral Luttinger Liquids, and All That Jazz," *Brazilian Journal of Physics* **26**, 43 (1996).
211. +Marcus Kasner and A.H. MacDonald, "Thermodynamics of Quantum Hall Ferromagnets" *Phys. Rev. Lett.* **76**, 3204 (1996).
212. +T. Jungwirth and A.H. MacDonald, "Correlations, compressibility and capacitance in double-quantum well systems in the quantum Hall regime," *Phys. Rev. B* **53**, 9943 (1996).
213. +R. Côté and A.H. MacDonald, "Spin-ordering and magnon collective modes for two-dimensional electron lattices in strong magnetic fields," *Phys. Rev. B* **53**, 10019 (1996).
214. +D. Yoshioka and A.H. MacDonald, "Edge-state transport in separately contacted double-layer quantum Hall systems," *Phys. Rev. B* **53**, R16168 (1996).
215. +C.B. Hanna and A.H. MacDonald, "Spontaneous coherence and the quantum Hall effect in triple-layer electron systems," *Phys. Rev. B* **53**, 15981 (1996).
216. +H.A. Fertig, L. Brey, R. Côté, and A.H. MacDonald, "Internal Excitations and Dissipative Damping of Quantum Hall Skyrmions," *Phys. Rev. Lett.* **77**, 1572 (1996).
217. +M.R. Norman, and A.H. MacDonald, "Absence of persistent magnetic oscillations in type-II superconductors," *Phys. Rev. B* **54**, 4239 (1996).
218. +U. Zuelicke and A.H. MacDonald, "Electronic spectral functions for quantum Hall edge states," *Phys. Rev. B* **54**, R8349 (1996).
219. \*L. Brey, H.A. Fertig, R. Côté, and A.H. MacDonald, "The 2D Electron Gas near  $\nu=1$  as a Skyrme crystal," *Surface Science* **361/2**, 274 (1996).
220. +Jun Hu, E. Dagatto, and A.H. MacDonald, "Spontaneous coherence and collective modes in double-layer quantum-dot systems," *Phys. Rev. B* **54**, 8616 (1996).
221. \*S.R. Eric Yang, S. Mitra, A.H. MacDonald, and M.P.A. Fisher, "Momentum Distribution of a Narrow Hall Bar in the FQHE Regime," *J. Korean Phys. Soc.*, **29**, 510 (1996).

222. \*T. Jungwirth and A.H. MacDonald, “Tunneling between Parallel 2-Dimensional Electron Liquids,” *Surface Science* **362**, 167 (1996).
223. \*L. Brey, H.A. Fertig, R. Côté, and A.H. MacDonald, “Skyrme and Meron Crystals in Quantum Hall Ferromagnets,” *Physica Scripta* **T66**, 154 (1996).
224. +A.H. MacDonald, “Incompressibilis Ergo Sum: Skyrmions and Edge States in the Quantum Hall Effect,” in *Quantum Transport in Semiconductor Submicron Structures* edited by Bernhard Kramer (Kluwer, Dordrecht, 1996).
225. +J.J. Palacios, D. Yoshioka, and A.H. MacDonald, “Long-lived charged multiple-exciton complexes in strong magnetic fields,” *Phys. Rev. B* **54**, R2296 (1996).
226. +Erik S. Sorensen and A.H. MacDonald, “Integer Quantum Hall Effect in Double-Layer Systems,” *Phys. Rev. B* **54**, 10675 (1996).
227. +Kun Yang, K. Moon, Lotfi Belkhir, H. Mori, S.M. Girvin, A.H. MacDonald, L. Zheng, and D. Yoshioka, “Spontaneous interlayer coherence in double-layer quantum Hall systems: Symmetry breaking interactions, in-plane fields, and phase solitons,” *Phys. Rev. B* **54**, 11644 (1996).
228. +U. Zuelicke and A.H. MacDonald, “Plasmon modes and correlation functions in quantum wires and Hall bars,” *Phys. Rev. B* **54**, 16813 (1996).
229. +L. Brey, H.A. Fertig, R. Côté, and A.H. MacDonald, “Charged pseudospin textures in double-layer quantum Hall systems,” *Phys. Rev. B* **54**, 16888 (1996).
230. #S.M. Girvin and A.H. MacDonald, “Multicomponent Quantum Hall Systems: The Sum of Their Parts and More,” in *Perspectives in Quantum Hall Effects* edited by Sankar Das Sarma and Aron Pinczuk (Wiley, New York, 1997).
231. \*A.H. MacDonald, “No end of tricks: electrons in the fractional quantum Hall regime,” *Solid State Comm.* **102**, 143 (1997).
232. +U. Zuelicke, Robert Bluhm, V. Alan Kostelecký, and A.H. MacDonald, “Edge-magnetoplasmon wave-packet revivals in the quantum Hall effect,” *Phys. Rev. B* **55**, 9800 (1997).
233. +H.A. Fertig, Luis Brey, R. Côté, A.H. MacDonald, A. Karlhede, and S.L. Sondhi, “Hartree-Fock Theory of Skyrmions in Quantum Hall Ferromagnets,” *Phys. Rev. B* **55**, 10671 (1997).
234. +L. Swierkowski and A.H. MacDonald, “Transverse pseudospin susceptibility and tunneling parameters of double-layer electron-gas systems,” *Phys. Rev. B* **55**, R16017 (1997).

235. +R. Côté, A.H. MacDonald, Luis Brey, H.A. Fertig, S.M. Girvin, and H.T.C. Stoof, “Collective Excitations, NMR, and Phase Transitions in Skyrme Crystals,” *Phys. Rev. Lett.* **78**, 4825 (1997).
236. +Jun Hu and A.H. MacDonald, “Universal phase diagram for vortex states in layered superconductors in strong magnetic fields,” *Phys. Rev. B* **56**, 2788 (1997).
237. +M. Abolfath, J.J. Palacios, H.A. Fertig, S.M. Girvin, and A.H. MacDonald, “A critical comparison of classical field theory and microscopic wavefunctions for skyrmions in quantum Hall ferromagnets,” *Phys. Rev. B* **56**, 6795 (1997).
238. +Daniela Pfannkuche and A.H. MacDonald, “Quantum Hall Effect of Interacting Electrons in a periodic potential,” *Phys. Rev. B* **56**, R7100 (1997).
239. +Kahren Tevosyan and A.H. MacDonald, “Virial expansions, exclusion statistics, and the fractional quantum Hall effect,” *Phys. Rev. B* **56**, 7517 (1997).
240. \*U. Zuelicke and A.H. MacDonald, “Toward realistic effective models of quantum-Hall edges,” *Physica E* **1**, 105 (1997).
241. +R.J. Radtke, S. Das Sarma, and A.H. MacDonald, “Mode mixing in antiferromagnetically coupled double quantum wells,” *Phys. Rev. B* **57**, 2342 (1998).
242. +Martin Chr. Bønsager, Karsten Flensberg, Ben Yu-Kuang Hu, and A.H. MacDonald, “Frictional Drag Between Quantum Wells Mediated by Phonon Exchange,” *Phys. Rev. B* **57**, 7085 (1998).
243. \*H. Akera, A.H. MacDonald, and D. Yoshioka, “Electron-hole Chains in Unbalanced Double-Layers,” in *High Magnetic Fields in the Physics of Semiconductors II* edited by G. Landwehr and W. Ossau (World Scientific, Singapore, 1997).
244. \*D. Yoshioka and A.H. MacDonald “Inter-layer Edge Tunneling and Transport Properties in Double-Layer Quantum Hall Systems,” *High Magnetic Fields in the Physics of Semiconductors II* edited by G. Landwehr and W. Ossau (World Scientific, Singapore, 1997).
245. \*Daniella Pfannkuche and A.H. MacDonald, “Interacting Electrons in a Lateral Superlattice Potential,” *High Magnetic Fields in the Physics of Semiconductors II* edited by G. Landwehr and W. Ossau (World Scientific, Singapore, 1997).
246. +Sergio Conti, Giovanni Vignale, and A.H. MacDonald, “Engineering superfluidity in electron-hole double layers,” *Phys. Rev. B* **57**, R6846 (1998).

247. +J.J. Palacios and A.H. MacDonald, “Bulk charge distributions on integer and fractional quantum Hall plateaus,” *Phys. Rev. B* **57**, 7119 (1998).
248. +Yong Wang and A.H. MacDonald, “Mixed-state penetration depth in s-wave and d-wave superconductors,” *Solid State Comm.* **109**, 289 (1999).
249. +A.H. MacDonald, T. Jungwirth, and M. Kasner, “Temperature Dependence of Itinerant Electron Junction Magnetoresistance,” *Phys. Rev. Lett.* **81**, 705 (1998).
250. +T. Jungwirth, S.P. Shukla, L. Smrcka, M. Shayegan, and A.H. MacDonald, “Magnetic Anisotropy in Quantum Hall Ferromagnets,” *Phys. Rev. Lett.* **81**, 2328 (1998).
251. +T. Jungwirth and A.H. MacDonald, “Spin-bottleneck Resistance in Magnetic-Tunnel-Junction Devices,” *Solid State Comm.* **108**, 127 (1998).
252. \*M.C. Bønsager, K. Flensberg, B.Y.K. Hu, and A.H. MacDonald, “Frictional drag mediated by acoustic phonons,” *Physica B* **249–251**, 864 (1998).
253. \*C.B. Hanna, A.H. MacDonald, and S.M. Girvin, “Properties of the soliton-lattice state in double-layer quantum Hall systems,” *Physica B* **249**, 824 (1998).
254. +U. Zülicke, A.H. MacDonald, and M.D. Johnson, “Observability of counterpropagating modes at fractional Hall edges,” *Phys. Rev. B* **58**, 13778 (1998).
255. #A.H. MacDonald, “Correlations Weak and Strong: Diverse Guises of the Two-Dimensional Electron System,” *Int. J. Mod. Phys. B* **13**, 447 (1999).
256. \*H.A. Fertig, L. Brey, R.Côté, A.H. MacDonald, and S.M. Girvin, “Skyrmions in Quantum Hall Ferromagnets,” in *Recent Progress in Many-Body Theories* edited by David Neilson and Raymond F. Bishop (World Scientific, Singapore, 1998), p. 38.
257. +A.H. MacDonald and J.J. Palacios, “Magnons and Skyrmions in Quantum Hall Ferromagnets,” *Phys. Rev. B* **58**, 10171 (1998).
258. #A.H. MacDonald, “Friends in All the Wrong Places: Fermi Liquid States on the Bad Side of Town,” *Asia Pacific Center for Theoretical Physics Bulletin* **1**, 24 (1998).
259. +D. Pfannkuche and A.H. MacDonald, “Transitions between Fractional and Integer Quantum Hall States in a Lateral Superlattice Potential,” *Physica B* **249–251**, 918 (1998).
260. +S.P. Shukla, M. Shayegan, T. Jungwirth, and A.H. MacDonald, “Shukla *et al.* Reply,” *Phys. Rev. Lett.* **82**, 3724 (1999).



261. +T. Jungwirth, W.A. Atkinson, B.H. Lee, and A.H. MacDonald, "Interlayer coupling in ferromagnetic semiconductor superlattices," *Phys. Rev. B* **59**, 9818 (1999).
262. +U. Zülicke and A.H. MacDonald, "Periphery deformations and tunneling at correlated quantum Hall edges," *Phys. Rev. B* **60**, 1837 (1999).
263. +A.H. MacDonald, R. Rajaraman, and T. Jungwirth, "Broken symmetry ground states in  $\nu=2$  bilayer quantum Hall systems," *Phys. Rev. B* **60**, 8817 (1999).
264. +J. Kyriakidis, D. Loss, and A.H. MacDonald, "Quantum dynamics of pseudospin solitons in double-layer quantum Hall systems," *Phys. Rev. Lett.* **83**, 1411 (1999).
265. #W.A. Atkinson and A.H. MacDonald, "Superconductivity-visualizing quasiparticle scattering resonances," *Science* **285**, 57 (1999).
266. +A.H. MacDonald, "Spin-bottlenecks in the quantum Hall regime," *Phys. Rev. Lett.* **83**, 3262 (1999).
267. \*U. Zülicke, A.H. MacDonald, and M. Johnson, "Fractional-quantum-Hall edges at filling factor  $\nu = 1 - 1/m$ ," in *Quantum Physics at the Mesoscopic Scale: Proc. of the XXXIVth Rencontres de Moriond* edited by C. Glattli, M. Sanquer, and J. Trân Thanh Vân (Editions Frontières, Gif-sur-Yvette, France (1999)).
268. +M.C. Bønsager and A.H. MacDonald, "Pauli-limited superconductivity in small grains," *Solid State Commun.* **112**, 409 (1999).
269. +T. Jungwirth, A.H. MacDonald, L. Smrcka, and S.M. Girvin, "Field-tilt anisotropy in quantum Hall stripe states," *Phys. Rev. B* **60**, 15574 (1999).
270. \*A.H. MacDonald, "Spintronics Spin Accumulation and Thermodynamics," in *Proceedings of the XVI Sitges Conference on Statistical Physics* (Springer-Verlag, Berlin, 2000).
271. +Vincenzo Piazza, Vittorio Pellegrini, Fabio Beltram, Werner Wegscheider, Tomas Jungwirth, and Allan H. MacDonald, "First-order phase transitions in a quantum Hall ferromagnet," *Nature* **402**, 638 (1999).
272. +W.A. Atkinson and A.H. MacDonald, "Electrodynamics of a clean vortex lattice," *Phys. Rev. B* **60**, 9295 (1999).
273. +A.H. MacDonald and M.P.A. Fisher, "Quantum theory of quantum Hall smectics," *Phys. Rev. B* **61**, 5724 (2000).

274. \*T. Jungwirth, A.H. MacDonald, L. Smrcka, and S.M. Girvin, "In-plane magnetic-field induced anisotropy and orientation energy of stripe phases at half-filled high Landau levels," *Physica E* **6**, 43 (2000).
275. \*T. Jungwirth, W.A. Atkinson, B.H. Lee, and A.H. MacDonald, "Theory of carrier-induced ferromagnetism in  $Mn_x Ga_{1-x}As/GaAs$  superlattices," *Physica E* **6**, 794 (2000).
276. \*A.H. MacDonald and M.P.A. Fisher, "Non-linear transport in quantum Hall smectics," in *Interactions and Transport Properties in Low-Dimensional Systems*, edited by Tobias Brands (Springer, Berlin, 2000).
277. +Byounggak Lee, T. Jungwirth, and A.H. MacDonald, "Theory of ferromagnetism in diluted magnetic semiconductor quantum wells," *Phys. Rev. B* **61**, 15606 (2000).
278. +John Schliemann and A.H. MacDonald, "Bilayer Quantum Hall Systems at Filling Factor  $\nu=2$ : An exact diagonalization study," *Phys. Rev. Lett.* **84**, 4437 (2000).
279. \*Ulrich Zuelicke and A.H. MacDonald, "Umklapp scattering at reconstructed quantum Hall edges," *Physica E* **6**, 104 (2000).
280. \*V. Piazza, V. Pellegrini, F. Beltram, W. Wegscheider, T. Jungwirth, and A.H. MacDonald, "Hysteresis and first-order phase transition in the two-dimensional electron gas," *Physica E* **6**, 108 (2000).
281. \*Y. Joglekar and A.H. MacDonald, "Order parameter suppression in double layer quantum Hall ferromagnets," *Physica E* **6**, 627 (2000).
282. \*T. Jungwirth, W.A. Atkinson, B.H. Lee, and A.H. MacDonald, "Theory of carrier-induced ferromagnetism in  $Mn_x Ga_{1-x}As/GaAs$  superlattices," *Physica E* **6**, 794 (2000).
283. +Jürgen König, Hsiu-Hau Lin, and A.H. MacDonald, "Theory of Diluted Magnetic Semiconductor Ferromagnetism," *Phys. Rev. Lett.* **84**, 5628 (2000).
284. +W. Pan, T. Jungwirth, H.L. Stormer, D.C. Tsui, A.H. MacDonald, S.M. Girvin, L. Smrcka, L.N. Pfeiffer, K. W. Baldwin, and K. W. West, "Reorientation of Anisotropy in a Square Well Quantum Hall Sample," *Phys. Rev. Lett.* **85**, 3257 (2000).
285. +Jairo Sinova, Geoff Canright, and A.H. MacDonald, "Nature of Ergodicity Breaking in Ising Spin Glasses as Revealed by Correlation Function Spectral Properties," *Phys. Rev. Lett.* **85**, 2609 (2000).

286. +Jordan Kyriakidis, Daniel Loss, and A.H. MacDonald, “Erratum: Quantum Dynamics of Pseudospin Solitons in Double-Layer Quantum Hall Systems [*Phys. Rev. Lett.* **83**, 1411 (1999)],” *Phys. Rev. Lett.* **85**, 2222 (2000).
287. +Marcus Kasner, J.J. Palacios, and A.H. MacDonald, “Quasiparticle properties of quantum Hall ferromagnets,” *Phys. Rev. B* **62**, 2640 (2000).
288. +Tae-Suk Kim, S.R. Eric Yang, and A.H. MacDonald, “Hartree-fock theory of hole stripe states,” *Phys. Rev. B* **62**, 7747 (2000).
289. +Martin C. Bønsager, Yong Baek Kim, and A.H. MacDonald, “Phonon-mediated drag at  $\nu=1/2$ : A test of the Chern-Simons composite-fermion theory,” *Phys. Rev. B* **62**, 10940 (2000).
290. +W. A. Atkinson, P. J. Hirschfeld, A. H. MacDonald, and K. Ziegler, “Details of Disorder Matter in 2D d-Wave Superconductors,” *Phys. Rev. Lett.* **85**, 3926 (2000).
291. +W. A. Atkinson, P. J. Hirschfeld, and A. H. MacDonald, “Gap Inhomogeneities and the Density of States in Disordered d-Wave Superconductors,” *Phys. Rev. Lett.* **85**, 3922 (2000).
292. +Jairo Sinova, A. H. MacDonald, and S. M. Girvin, “Disorder and interactions in quantum Hall ferromagnets near  $\nu=1$ ,” *Phys. Rev. B* **62**, 13579 (2000).
293. +John Schliemann, Daniel Loss, and A. H. MacDonald, “Double-occupancy errors, adiabaticity, and entanglement of spin qubits in quantum dots,” *Phys. Rev. B* **63**, 085311 (2001).
294. +John Schliemann, Jürgen König, Hsiu-Hau Lin, and Allan H. MacDonald, “Limits on the Curie temperature of (III,Mn)V ferromagnetic semiconductors,” *Appl. Phys. Lett.* **78**, 1550 (2001).
295. +C.E. Creffield, W. Hausler, and A.H. MacDonald, “Spin and charge Tomonoga-Luttinger parameters in quantum wires,” *Europhys. Lett.* **53**, 221 (2001).
296. +M. Abolfath, T. Jungwirth, J. Brum, and A.H. MacDonald, “Theory of magnetic anisotropy in  $\text{III}_{1-x}\text{Mn}_x\text{V}$  ferromagnets,” *Phys. Rev. B* **63**, 4418 (2001).
297. +C.M. Canali and A.H. MacDonald, “Theory of tunneling spectroscopy in ferromagnetic nanoparticles,” *Phys. Rev Lett.* **85**, 5623 (2000).
298. \*W.A. Atkinson, P.J. Hirschfeld, and A.H. MacDonald, “Effect of order-parameter suppression on scattering by isolated impurities in asymmetric bands,” *Physica C* **341**, 1687 (2000).

299. +T. Jungwirth and A.H. MacDonald, “Pseudospin anisotropy classification of quantum Hall ferromagnets,” *Phys. Rev. B* **63**, 035305 (2001).
300. +C.B. Hanna, A.H. MacDonald, and S.M. Girvin, “Incommensurate ground state of double-layer quantum Hall systems,” *Phys. Rev. B* **63**, 125305 (2001).
301. +J. Sinova, G. Canright, H.E. Castillo, and A.H. MacDonald, “Extensive eigenvalues in spin-spin correlations: A tool for counting pure states in Ising spin glasses,” *Phys. Rev. B* **63**, 104427 (2001).
302. +Stern, S.M. Girvin, A.H. MacDonald, and Ning Ma, “Theory of interlayer tunneling in bilayer quantum Hall ferromagnets,” *Phys. Rev. Lett.* **86**, 1829 (2001).
303. +J. Schliemann, S.M. Girvin, and A.H. MacDonald, “Strong correlation to weak correlation phase transition in bilayer quantum Hall systems,” *Phys. Rev. Lett.* **86**, 1849 (2001).
304. +K. Yang and A.H. MacDonald, “Nondissipative drag conductance as a topological quantum number,” *Phys. Rev. B* **63**, 073301 (2001).
305. \*A.H. MacDonald, “Superfluid properties of double-layer quantum Hall ferromagnets,” *Physica B* **298**, 129 (2001).
306. \*A.H. MacDonald and C.M. Canali, “Quantum description of ferromagnet metal nanoparticles,” *Solid State Commun.* **119**, 253 (2001).
307. +J. König, H.H. Lin, and A.H. MacDonald, “Comment on ‘Theory of diluted magnetic semiconductor ferromagnetism’—König, Lin, and MacDonald reply,” *Phys. Rev. Lett.* **86**, 5637 (2001).
308. \*J. König, H.H. Lin, and A.H. MacDonald, “Ferromagnetism and spin waves in diluted magnetic semiconductors,” *Physica E* **10**, 139 (2001).
309. \*T. Jungwirth, B. Lee, and A.H. MacDonald, “Hole-hole correlation effects on magnetic properties of  $Mn_xIII_{1-x}V$  diluted magnetic semiconductors,” *Physica E* **10**, 153 (2001).
310. \*M. Abolfath, T. Jungwirth, and A.H. MacDonald, “Mean-field theory of magnetic properties of  $Mn_xIII_{1-x}V$  semiconductors,” *Physica E* **10**, 161 (2001).
311. +Yogesh N. Joglekar and Allan H. MacDonald, “Is there a dc Josephson Effect in Bilayer Quantum Hall Systems?” *Phys. Rev. Lett.* **87**, 196802 (2001).
312. +John Schliemann, Jürgen König, and A.H. MacDonald, “Monte Carlo study of ferromagnetism in  $(III,Mn)V$  semiconductors,” *Phys. Rev. B* **64**, 165201 (2001).

313. +Jürgen König, Martin Chr. Bønsager, and A.H. MacDonald, “Dissipationless Spin Transport in Thin Film Ferromagnets,” *Phys. Rev. Lett.* **87**, 187202 (2001).
314. +T. Jungwirth and A.H. MacDonald, “Resistance Spikes and Domain Wall Loops in Ising Quantum Hall Ferromagnets,” *Phys. Rev. Lett.* **87**, 216801 (2001).
315. +Jürgen König, T. Jungwirth, and A.H. MacDonald, “Theory of magnetic properties and spin-wave dispersion for ferromagnetic (Ga,Mn)As,” *Phys. Rev. B* **64**, 184423 (2001).
316. +Yogesh N. Joglekar and Allan H. MacDonald, “Microscopic functional integral theory of quantum fluctuations in double-layer quantum Hall ferromagnets,” *Phys. Rev. B* **64**, 155315 (2001).
317. #Allan Hugh MacDonald, “Copper oxides get charged up,” *Nature* **414**, 409 (2001).
318. +D. Sánchez, A.H. MacDonald, and Gloria Platero, “Field-domain spintronics in magnetic semiconductor multiple quantum wells,” *Phys. Rev. B* **65**, 035301 (2001).
319. +J. Sinova, J. Schliemann, A.S. Nuñez, and A.H. MacDonald, “2D bands and electron-phonon interactions in polyacene plastic transistors,” *Phys. Rev. Lett.* **87**, 226802 (2001).
320. +S.R. Eric Yang, Ziqiang Wang, and A.H. MacDonald, “Thermodynamic and tunneling density of states of the integer quantum Hall critical state,” *Phys. Rev. B* **65**, 041302 (2001).
321. +T. Dietl, Jürgen König, and A.H. MacDonald, “Magnetic domains in III-V magnetic semiconductors,” *Phys. Rev. B* **64**, 241201 (2001).
322. \*Yogesh N. Joglekar and A.H. MacDonald, “Tunneling Current Characteristics in Bilayer Quantum Hall Systems,” SCES 2001 proceedings (2001).
323. #Byounggak Lee, T. Jungwirth, and A.H. MacDonald, “Ferromagnetism in diluted magnetic semiconductor heterojunction systems,” *Semicond. Sci Technol.* **17**, 393 (2002).
324. +John Schliemann and A.H. MacDonald, “Noncollinear Ferromagnetism in (III,Mn)V Semiconductors,” *Phys. Rev. Lett.* **88**, 137201 (2002).
325. +W. Hausler, L. Kecke, and A.H. MacDonald, “Tomonaga-Luttinger parameters for quantum wires,” *Phys. Rev. B* **65**, 085104 (2002).
326. +C.B. Hanna, J.C. Diaz-Velez, and A.H. MacDonald, “Broken Symmetry States in Quantum Hall Superlattices,” *Phys. Rev. B* **65**, 115323 (2002).

327. +T. Jungwirth, Qian Niu, and A.H. MacDonald, “Anomalous Hall Effect in Ferromagnetic Semiconductors,” *Phys. Rev. Lett.* **88**, 207208 (2002).
328. \*T. Jungwirth, A.H. MacDonald, and E.H. Rezayi, “Two-dimensional Ising physics in quantum Hall ferromagnets,” *Physica E* **12**, 1-7 (2002).
329. \*Jairo Sinova, Allan H. MacDonald, and S.M. Girvin, “Disorder and interactions in quantum Hall ferromagnets: effects of disorder in Skyrmion physics” *Physica E* **12**, 16-19 (2002).
330. \*Anton Burkov, John Schliemann, A.H. MacDonald, and S.M. Girvin, “Phase transition and spin-wave dispersion in quantum Hall bilayers at filling factor  $\nu=1$ ,” *Physica E* **12**, 28-31 (2002).
331. +J., Konig, J. Schliemann, T. Jungwirth, et al, “Collective spin fluctuations in diluted magnetic semiconductors”, *Physica E* **12** (1-4): 379, (2002)
332. +Sinova, J., Nunez, A.S., Schliemann, J., et.al, “Electron-phonon interactions in polyacene organic transistors”, *Phys Status Solid B* **230** (2): 309, (2002)
333. +B. Lee, Tomas Jungwirth, and A.H. MacDonald, “Field-effect magnetization reversal in ferromagnetic semiconductor quantum wells”, *Phys Rev. B* **65** (19), 193311, (2002).
334. +YN Joglekar and A.H. MacDonald, “Tunneling current characteristics in bilayer quantum Hall systems”, *Physics B* **312**: 554 (2002).
335. +J. Sinova, C.B. Hanna, and A.H. MacDonald, “Quantum melting and absence of Bose-Einstein condensation in two-dimensional vortex matter”, *Phys Rev Lett* **89** (3), 030403 (2002).
336. +Y.N. Joglekar and A.H. MacDonald, “Bias-voltage-induced phase transition in bilayer quantum Hall ferromagnets”, *Phys Rev B* **65** (23), 235319 (2002)
337. +M. Abolfath, L. Radzihovsky and A.H. MacDonald, “Global phase diagram of bilayer quantum Hall ferromagnets”, *Phys Rev B* **65** (23), 233306 (2002).
338. +T. Jungwirth, T. Konig, Jairo Sinova, et al, “Curie temperature trends in (III, Mn) V ferromagnetic semiconductors”, *Phys Rev B* **66** (1), 012402, (2002).
339. +E. Bascones, A.A. Burkov, A.H. MacDonald, “Theory of ferromagnetism in doped excitonic condensates”, *Phys. Rev. Lett* **89** (8), 086401, (2002).
340. +S.R. Yang, A.H. MacDonald, “Coupling between edge and bulk in strong-field quantumdots”, *Phys. Rev. B* **66** (4), 041304 (2002).

341. +Jairo Sinova, Tomas Jungwirth, S.R. Yang, “Infared conductivity of metallic (III,Mn) V ferromagnets”, Phys. Rev. B **66** (4), 041202, (2002).
342. +Y. Joglekar, A.H. MacDonald, “Zero-bias conductance anomaly in bilayer quantum Hall systems”, Int J Mod Phys B **16** (20-22), 2936 (2002).
343. +D. Sanchez, A.H. MacDonald, G. Platero, “Non-linear spin transport in magnetic semiconductor multiple quantum-wells”, Physica E **13** (2-4), 525, (2002).
344. +A. Burkov, A.H. MacDonald, “ $\nu=2$  bilayer quantum Hall system in a tilted magnetic field”, Phys Rev B **66** (11), 115, (2002).
345. +A. Burkov, A.H. MacDonald, “Lattice pseudospin model for  $\nu=1$  quantum Hall bilayers”, Phys Rev B **66** (11) 115320, (2002)
346. +A. Cehovin, C.M. Canali, and A.H. MacDonald,” Magnetization orientation dependence of the quasiparticle spectrum and hysteresis in ferromagnetic metal nanoparticles”, Phys Rev B **66** (9), (2002).
347. S.R. Eric Yang and A.H. MacDonald, “Metal-Insulator Transition and Ferromagnetism in Diluted Magnetic Semiconductors”, cond-mat/0202021,(2002).
348. Emiliano Papa, John Schliemann, A.H. MacDonald and Matthew P.A. Fisher, “Quantum theory of bilayer quantum Hall smectics”, Phys Rev B **67** (11), 115330 (2003).
349. Eric S.R., John Schliemann, A.H. MacDonald, “Quantum-Hall quantum bits”, Phys Rev B **66**, 153302, (2002)
350. Tomas Jungwirth, M. Albofath, Jairo Sinova, A.H. MacDonald, “Boltzmann theory of engineered anisotropic magnetoresistance in (Ga,Mn) As”, Appl Phys Lett **81** (21), 4029, (2002).
351. Jairo Sinova, C.B. Hanna, and A.H. MacDonald, “Measuring the condensate fraction of rapidly rotating trapped boson systems: off-diagonal order from the density”, Phys Rev Lett **90** (12) 120401, 2003.
352. S.R. Eric Yang, Jairo Sinova, T. Jungwirth, Y.P. Shim, and A.H. MacDonald, “Non-Drude Optical Conductivity of (III,Mn) V Ferromagnetic Semiconductors”, Phys Rev B **67** (4) 045205, 2003.
353. T. Jungwirth, Jairo Sinova, J. Kucera and A.H. MacDonald, “Theoretical models of ferromagnetic III-V semiconductors”, Curr Appl 3 (5): 461-464, (2003).

354. Manuel Bejar, David Sanchez, Gloria Platero and A.H. MacDonald, "Spin-polarized current oscillations in diluted magnetic semiconductor multiple quantum wells", *Phys Rev B* **67** (4) 045324, 2003.
355. S.R. Eric Yang, Sami Mitra, M.P.A. Fisher, and A.H. MacDonald, "Momentum Distribution Function of a Narrow Hall Bar in the FQHE Regime", *cond-mat/0212170*, (2002).
356. U. Zulicke, J.J. Palacios, A.H. MacDonald, "Fractional-quantum-Hall edge electrons and Fermi statistics", *Phys Rev B* **67** (4), 045303, (2003).
357. Jairo Sinova, T. Jungwirth, J. Kucera and A.H. MacDonald, "Infrared magneto-optical properties of (III,Mn) V ferromagnetic semiconductors", *Phys Rev B* **67** (23), 235203 (2003)
358. T. Jungwirth, Jairo Sinova, K.Y. Wang, K.W. Edmonds, R.P. Campion, B.L. Gallagher, C.T. Foxon, Qian Niu, and A.H. MacDonald, "DC-transport properties of ferromagnetic (Ga,Mn) As semiconductors", *Appl Phys Lett* **83** (2): 320 (2003).
359. J. Schliemann and A.H. MacDonald, "Noncollinear Ground States in Ferromagnetic (III,Mn) V Semiconductors", *J Supercond* **16** (1): 11-14, 2003.
360. E.H. Rezayi, T. Jungwirth, A.H. MacDonald, and F.D.M. Haldane, "Exact diagonalization study of domain structure in integer filling factor quantum Hall ferromagnets", *Phys Rev.* **B67**, 201305 (2003).
361. C.M. Canali, A. Cehobin, and A.H. MacDonald, "Chern Numbers for Spin Models of Transition Metal Nanomagnets", *Phys Rev Lett* **91** (4) 046805 (2003).
362. A. Cehovin, C.M. Canali, A.H. MacDonald, "Elementary Excitations of Ferromagnetic Metal Nanoparticles", *Phys Rev B* **68**, 014423, (2003).
363. J. Fernandez-Rossier, Alvaro S. Nunez, M. Abolfath, A.H. MacDonald, "Optical spin transfer in ferromagnetic semiconductors", *cond-mat/0304492*, (2003).
364. S.R. Eric Yang and A.H. MacDonald, "Disorder and ferromagnetism in diluted magnetic semiconductors", *Phy. Rev. B* **67**, 155202, (2003).
365. Jan Heurich, Jurgen Konig, A.H. MacDonald, "Persistent Spin Currents in Helimagnets", *Phys Rev B* **68**, 0464406, (2003).
366. M. Abolfath, A.H. MacDonald, L. Radzihovsky, "Critical Currents of Ideal Quantum Hall Superfluids", *Phys Rev B* (**15**): 155318 (2003).



367. T. Jungwirth, J. Masek, Jairo Sinova, and A.H. MacDonald, “Ferromagnetic transition temperature enhancement in (Ga,Mn) As semiconductor by carbon co-doping”, *Phys Rev B* **68** (16): 161202 (2003).
368. J. Konig and A.H. MacDonald, “EPR and ferromagnetism in diluted magnetic semiconductor quantum wells”, *Phys Rev Lett* **91** (7), 077202 (2003)..
369. W. Hausler and A.H. MacDonald, “Tunneling exponents in realistic quantum wires using the mean field approximation”, cond-mat/030654
370. R. Asgari, M. Polini, V. Carnevale, M.P. Tosi, “Vibrational excitations in the paired phases of two-dimensional electron crystal in a perpendicular magnetic field”, *Physica B*, 336, 387, (2003).
371. Y. Yao, L. Kleinman, A.H. MacDonald, Jairo Sinova, T. Jungwirth, Ding-sheng Wang, and Qian Niu, “First Principles Calculation of Anomalous Hall Conductivity in Ferromagnetic bcc Fe”, *Phys Rev Lett* **92** (3): 037204.
372. Jairo Sinova, Dimitrie Culcer, Q. Niu, N. A. Sinitsy, T. Jungwirth, and A.H. MacDonald, “Universal Intrinsic Spin-Hall Effect”, *Phys Rev Lett* **92** (12): 126603 (2004).
373. K. Nomura, D. Yoshioka, T. Jungwirth and A.H. MacDonald, “Numerical Investigation on Asymmetric Bilayer System at Integer Filling Factor”, *Physica E* **22** (1-3): 19-24, 2004.
374. Jairo Sinova, T. Jungwirth, W.A. Atkinson, and A.H. MacDonald, “Magnetization relaxation in (Ga,Mn) As ferromagnetic semiconductors”, *Phys Rev B* **69** (8): 085209 (2004).
375. T. Jungwirth, Jairo Sinova, and A.H. MacDonald, “Magnetic and transport properties of (III,Mn) V ferromagnetic semiconductors”, *Acta Phys Pol A* **104** (2): 103-112, 2003.
376. Dimitrie Culcer, Jairo Sinova, N.A. Sinitsyn, T. Jungwirth, A.H. MacDonald, and Q. Niu, “Semiclassical theory of spin transport in spin-orbit coupled systems”, *Phys Rev Lett* **93** (4): 046602 (2004).
377. N. Yogesh, Joglekar, Alexander V. Balatsky, and A.H. MacDonald, “Noise spectroscopy and interlayer phase-coherence in bilayer quantum Hall systems”, *Phys Rev Lett* **92** (8): 086803 (2004).
378. N. Yogesh, Joglekar, and A.H. MacDonald, “Coexistence of superconductivity and ferromagnetism in ferromagnetic metals”, *Phys Rev Lett* **92**, 199705 (2004)..

379. Allan H. MacDonald, Anton A. Burkov, Yogesh N. Joglekar, and Enrico Rossi, “Collective transport properties of bilayer-quantum-Hall excitonic condensates”, *Physics of Semiconductors*, IOP Conference Series **171**, p29 (2003).
380. Anton A. Burkov, Yogesh N. Joglekar, Enrico Rossi, and Allan H. MacDonald, “Collective transport in bilayer quantum Hall systems”, *Physica E-Low Dimensional Systems & Nanostructures*, **22** (1-3): 19-24, (2004).
381. Dimitrie Culcer, Allan MacDonald, and Qian Niu, “Anomalous Hall effect in paramagnetic two dimensional systems”, *Phys Rev B* **68**, 045327 (2003).
382. A. A. Burkov, and A.H. MacDonald, “Theory of Spin-Charge Coupled Transport in a Two-Dimensional Electron Gas with Rashba Spin-Orbit Interactions”, cond-mat 0311328.
383. J. Hernandez-Rossier, M. Braum, A. S. Nunez, and A.H. MacDonald, “Influence of a Uniform Current on Collective Magnetization Dynamics in a Ferromagnetic Metal”, *Phys Rev B* **69** 174412 (2004).
384. A. Cohovein, C.M. Canali, and A.H. MacDonald, “Orbital and spin contributions to the SgS-tensors in metal nanoparticles”, *Phys Rev B* **69** (4): 045411.
385. Diego Frustaglia, Jurgen Konig, and Allan H. MacDonald, “Theory of spin waves in diluted-magnetic-semiconductor quantum wells”, *Phys Rev B* **70**, 045205, (2004)..
386. J. Fernandez-Rossier, C. Peirmarocchi, P. Chen, A.H. MacDonald and L.J. Sham, “Coherently photo-induced ferromagnetism in diluted magnetic semiconductors”, *Phys Rev Lett* **93**, 127201 (2004).
387. E. Papa and A.H. MacDonald, “Interactions suppress Quasiparticle Tunneling at Hall Bar Constrictions”, cond-mat 0403288.
388. A. S. Nunez and A.H. MacDonald, “Spin Transfer Without Spin Conservation”, cond-mat 0403710.
389. J.P. Eisenstein and A.H. MacDonald, “Bose-Einstein Condensation of Excitons in Bilayer Electron Systems”, cond-mat 0404113.
390. Q.Q. Wang, A. Muller, P. Bianucci, E. Rossi, Q.K. Xue, T. Takagahara, C. Piermarocchi, A.H. MacDonald, C.K. Shih, “Decoherence processes during active manipulation of excitonic qubits in semiconductor quantum dots”, cond-mat 0404465.
391. K. Yang, A.H. MacDonald, “Vortex Lattice Structure of Fulder-Ferrell-Larkin-Ovchinnikov Superconductors” cond-mat 0404580.

392. C. Timm and A.H. MacDonald, “Influence of non-local exchange on RKKY interactions in III-V diluted magnetic semiconductors”, cond-mat/0405484.
393. K. Nomura, Jairo Sinova, T. Jungwirth, Q. Niu, and A.H. MacDonald, “Non-vanishing spin Hall currents in disordered spin-orbit coupling systems”, cond-mat/0407279.
394. Dimitrie Culcer, Yugui Yao, Allan MacDonald and Qian Niu, “Electric generation of spin in crystals with reduced symmetry”, cond-mat/0408020.
395. Swaroop Ganguly, L.F. Register, S. Banerjee and A H MacDonald, “Bias voltage controlled magnetization switch in ferromagnetic semiconductor resonant tunneling diodes”, cond-mat/0409106.

396. **Books:**

1. A.H. MacDonald, *A Perspective on the Quantum Hall Effect* (Jack Books, Milan, 1989.)