

Y. IMRY

LIST OF PUBLICATIONS

Note: *** denotes a more important publication.

Journal Papers

1. Y. Imry, I. Pelah and E. Wiener.
Proton dynamics in hydrogen bonded ferroelectrics. *J. Chem. Phys.* **43**, 2332 (1965).
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18. L. Gunther, G. Deutscher and Y. Imry.
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19. Y. Imry and G. Deutscher.
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22. Y. Imry, O. Entin-Wohlman and D.J. Bergman.
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Phase measurements in open and closed Aharonov-Bohm interferometers, cond-mat/0412027, presented at FQMT04, Prague, July 2004, proceedings in *Physica E: Low-dimensional Systems and Nanostructures*, **29**, 283 (2005).
82. U. Gavish, B. Yurke and Y. Imry.
Noise Minimization in Quantum Transistors, presented at ICNF, Salamanca, September 2005 (talk by B. Gavish). Published in the proceedings, p.446 "NOISE AND FLUCTUATIONS 18th International Conference on Noise and Fluctuations - ICNF 2005 Salamanca Spain 19-23 September 2005" Eds: T. Gonzalez, J. Mateos, D. Pardo. AIP Conference Proceedings I Vol 780 (2005).

Some Unpublished Invited Lectures at International Meetings

1. Quantum interference effects in submicron conductors. Meeting of the German Physical Society, March 1986.
2. a. Quantum interference effects in submicron conductors, and b. Universal conductance fluctuations. Canadian Summer Physics Institute, Kingston, July 1986.

3. Macroscopic quantum phenomena in normal conductors. Int. Conf. on Fundamental Effects in Semiconductors, Nordita, August 1986.
4. Macroscopic quantum phenomena in normal conductors. Invited talks given at the Bar-Ilan meeting on Disordered Systems (1/1987); Santa Barbara meeting on Fast Devices (3/1987); German-Israeli meeting (June 1988) and Trieste Workshop on mesoscopic physics (October 1988).
5. Aharonov-Bohm, de Haas-van Alphen and quantum Hall oscillations in singly-connected quantum-dots, in the Trieste Workshop on Mesoscopic Physics (October 1988), and Wayzata Conference on Quantum Electrical Engineering (November 1988).
6. Dephasing in mesoscopic system, Trieste Workshop on Mesoscopic Physics (October 1988).
7. Summary talk at the April 1990 NATO ASI on Quantum Coherence in Mesoscopic Systems, Les Arcs, France.
8. Persistent currents in mesoscopic normal metal rings, a) in the 19th Int. Low-Temperature Physics Conference, Brighton, England, August 1990. b) In the Swiss Gwatt workshop, October 1990, c) in the March, 1991 Nato ASI on Single Electron Tunnelling, Les Houches, France.
9. Summary talk at the Int. Conf. on Localization, Imperial College, London, August 1990.
10. Opening Lecture in the Workshop on Physics of Nanostructures, NRC, Ottawa, Canada, August, 1991.
11. Spectral Correlations and Novel Orbital Magnetic Fields in Mesoscopics, in the February 1991 Bad Honnef Hereaus Seminar on Chaotic Scattering.
12. Collective Stripping of Donors near the Metal-Insulator Transition, in the November 1991 Taniguchi Symposium on Mesoscopics, Shima, Japan; at the iv Bar-Ilan Conference on Frontiers in Condensed-Matter Physics, March 1993; at the Tübingen meeting on Fermiology effects in High-temperature superconductors, July 1993.
13. Spectral correlations, symmetry breaking and novel orbital magnetic effects in mesoscopics, Plenary talk at the annual 1992 meeting of the South African Institute of Physics, July 1992.
14. Persistent Currents in Normal-Metal Rings, the Effect of Local Charge Neutrality (N. Argaman and Y. Imry), at the December 1992 Maui meeting on "New Phenomena in Mesoscopic Structures", and the Workshop on Electronic Properties of Disordered Systems, Argonne, August 1993.
15. Mesoscopics, the Study of Basic Issues in Physics, in EPS9, General Conference of the European Physical Society for its 25th anniversary, Florence, September 1993.
16. Recent Developments in Mesoscopic Physics, at the British Institute of Physics general condensed-matter meeting, Brighton, April 1994.
17. Transport in mesoscopic Systems, at the Fifth Gentner Symposium, Bastei, October 1994.
18. Magnetotransport in Anderson Insulators, at the Bad Honnef Hereaeus Seminar on Mesoscopic Transport, Localization and the Quantum Hall Effect, November 1994; at the May 1995 Jaszowiec School on Semiconductors.
19. Delocalization of Two-Particle States by Interactions, in the August 1995 Göteborg Conference on Concepts in Condensed-Matter Physics (S. Lundquist's 70th birthday)
20. Dephasing and Interactions, in the August 1995 Nato ASI on Mesoscopic Effects in Semiconductors, Bad Lauternberg.

21. Concluding Remarks at the VIth Hopping and Related Phenomena Conference, August 1995, Kiriat-Anavim.
22. Quantum Interference and Dephasing in Mesoscopics, at the September 1995 French Physical Society Meeting, Marseille and at the French-Israeli Meeting, Paris October 1995.
23. Mesoscopics, the Study of Basic Issues in Physics, at the November 1995 Int. Symposium on the Science and Technology of Atomically Engineered Materials, Richmond, Va.
24. Delocalization by Interactions. At the January 1996 Toulouse Symposium on Random Matrices and Quantum Localization.
25. Persistent Currents. At the 1996 Spring College, ICTP Trieste.
26. Conference Summary Talk. At the 1996 International Conference on Localization, Jaszowiec, Poland. Delocalization, inelastic scattering and transport due to interactions, in the proceedings of the 1997 Workshop on Chaotic Dynamics and Quantum Many Body Systems, ECT*, Trento.
27. Mesoscopics, the Study of Basic Issues in Physics, at the Benasque Center of Theoretical Physics, workshop on Quantum Many Body Problems, July 1997.
28. Orbital Paramagnetism of Andreev Electrons: At the April 1997 Meeting of the Israeli Physical Society, Ben Gurion University; at the May 1997 Workshop on Transport through Electron Condensates, Technion, Haifa; at the Lorentz Center Workshop on Directions in Mesoscopic Physics, Leiden, June 1997; at the International Conference on Mesoscopic and Strongly Correlated Systems, Chernogolovka, July 1997; and at the Adriatico Research Conference on Superconductivity, Andreev Reflections and Proximity Effect in Mesoscopic Structures, ICTP, Trieste, August 1997; at the minisymposium on Paramagnetic reentrance effects in superconductors at the Max Planck Institute for the Physics of Complex Systems Dresden, 1999.
29. Dephasing in Nonequilibrium States, at the Workshop on Disordered Systems and Quantum Chaos, Newton Institute, Cambridge, September 1997.
30. Quantum Dephasing in Mesoscopic Systems, at the International Conference, "Science at the Turn of the Century" for 20 years of the Wolf prize, Jerusalem, 1998; at the APCTP/ICTP Joint International Conference on Highlights in Condensed Matter Physics, Seoul, Korea, June 1998; at the SNS/Forum workshop on Semiconductor Nanostructures, Pisa, June 1998; at the ICTP workshop on Disorder, Chaos and Interactions in Mesoscopic Systems September 1998; at the 1998 Daniel Dautreppe seminar on Coherence and Decoherence in Physics, Centre St Hughes, France; at the inauguration of the Center for Nanoscience at the FZK Karlsruhe, December 1998; at the Workshop on Electron transmission through molecules and molecular interfaces, Ma'agan, Israel, December 1998.
31. Concluding Remarks at the 1st Indo-Israeli Symposium on: "Current Issues of Condensed-Matter and Materials Physics", New Delhi, January 1999.
32. Low-Temperature Dephasing in Disordered Metals, in the July 1999 ICTP Stig Lundquist Symposium on Quantum Phases in Electronic Systems at Low Temperatures; at the Albert Schmid Memorial Symposium, November 1999.
33. Interaction Effects in Disordered Systems, in the 1999 Enrico Fermi Varenna School on New directions in quantum chaos.
34. Chairman of a round-table discussion panel: "Do Interactions Enhance the Metallic Phase?" in the September 1999 VIII International Conference On Hopping and Related Phenomena, Murcia, Spain.
35. Mesoscopic Physics, in the September 1999 Rolf Landauer Memorial Symposium, Yorktown Hgts and at the Norwegian Physical Society Meeting, Rondablikk.

36. Possibility of Orbital Paramagnetism of Electrons in Proximity to a Superconductor, at the Symposium on Paramagnetic Reentrance Effects in Superconductors, Max Planck Institute for the Physics of Complex Systems, Dresden, November 1999.
37. On the observability of zero-point and HBT shot-noise fluctuations, at the Minisymposium on electron correlations in Mesoscopic systems, ICTP, Trieste, July 2000; at the GDR meeting on Correlated Electrons and Mesoscopic Physics, Aussois, September 2000, at the Quantum Optics XI Euroconference, October 2000 in Mallorca, Spain, at the Gentner Symposium in Ein-Gedi, Israel, February 2001 and at the International Symposium on Coherent Evolution in Noisy Environments, Max-Planck Institute for Complex Systems, Dresden, may 2001.
38. Mesoscopic Physics, Small is Beautiful, Plenary talk at the 47th meeting of the Israel Physical Society, Tel Aviv, December 2001.
39. Pairing correlations in small grains and rings, at the Nato ARW on Recent trends on Theory of Physical Phenomena in High Magnetic Fields, Les Houches, February 2002; at the workshop on Mesoscopic Physics and Electron Interaction, ICTP, Trieste, June-July 2002; at the Nanophase Syposium, Ettore Majorana Center, Erice, July 2002; at the workshop on Chaos and Interactions: from Nuclei to Quantum Dots, INT, University of Seattle, September 2002; at the SPHINX Conference on Unconventional Critical Behavior and Phase Transitions, Prague, September 2002 and at the Symposium for the 70th birthday of A. I. Larkin, at the Max Planck Institute for the Physics of Complex Systems, Dresden, November 2002.
40. The Detection of Quantum Noise, final lecture at the Hereaus workshop on Quantum Transport and Chaos, organized by A. Buchleitner, Bad Honnef, March 2003.
41. On the Decoherence Time in Mesoscopic Systems, invited talks at the Chaires Blaise Pascal Symposium in Paris, May 2003, and at the Moriond conference "Quantum information and decoherence in Nanosystems", La Thuile January 2004.
42. Quantum Noise and Low-temperature Decoherence, invited lectures at the: CIAR Quantum Materials meeting in Vancouver, May 2003, the Centennial Meeting of the Spanish Physical Society, Madrid, July 2003, and at the ICTP Third Stig Lundquist Conference on Advancing Frontiers in Condensed-Matter Physics: Fundamental Interactions and Excitations in Confined Systems, Trieste, August 2003.
43. Phase measurements and boson-induced orbital magnetization in A-B interferometers, invited lecture at the PITP workshop on Spins, Charges, Lattices and Topology in low D, UBC, Vancouver, February 2004.
44. Quantum fluctuation-dissipation theorem for stationary nonequilibrium systems, invited lecture at the Workshop on Quantum Systems Out of Equilibrium, ICTP Trieste, June 2004.
45. Low-temperature Decoherence in Mesoscopic Systems, invited lecture at the 20th General CMD Conference of the EPS, Prague July 2004 and seminar at the Les Houches LXXXI School on Nanoscopic Quantum Transport, July 2004.
46. Decoherence and Noise Correlators in Mesoscopic Systems, invited lecture at the Safed Workshop on Quantum Dissipation "Open Problems in Open Quantum Systems" August 29-Sept. 3, 2004.
47. An Inhomogeneous Josephson Phase Near the (Super) Conductor-Insulator Phase Transition in Disordered Films, and the workshop summary talk; at the January 2005 workshop on thin superconducting films Brookhaven National Laboratory.
48. Quantum Noise: New Aspects of the Casimir effect, at the PITP Showcase Conference; UBC, Vancouver, May 2005.
49. Review of Decoherence, Conference opening talk, at the Monte Verita Centro Stefano Franscini and ETH Conference on Control and Manipulation of Quantum Systems, Ascona, July 2005.

50. Chairman of the Discussion Session on Open Problems in Electron Transport in Molecular Junctions (ETMJ), Bat-Sheva Seminar on ETMJ, Mitzpeh Hayamin, Israel, September 2005.
51. Quantum Fluctuations and the Casimir Effect, at the Conference on Frontiers of Science Within Nanotechnology, Boston University, August 2005 and the Conference on Frontiers in Quantum Nanoscience, Noosa, Queensland, January 2006.
52. Landauer Transport in Mesoscopic Systems, the Effect of Interactions and Inelastic Scattering, at the workshop on Dynamics Of Complex Quantum Systems, Weizmann Institute and Technion, December 2005 and the workshop on Interactions and Dynamics in Low Dimensional Quantum Systems, Weizmann Institute, January 2006.
53. Noise and Decoherence in Nanoscopic Systems , course at the PITP - Les Houches Summer School on Quantum Magnetism, June 2006.
54. Quantum Noise and Quantum Amplification, at the workshop on Spin, Charge and Topology, Banff International Research Station, July 2006.
55. Coherence, Decoherence and Quantum Noise, at the International Workshop on Quantum Noise in Correlated Systems, Weizmann Institute, January 2008.
56. Effect of Pair-Breaking on Mesoscopic Persistent Currents Well Above the Superconducting Transition Temperature, at the International Conference on Trends in Quantum Solid State Physics: Present and Future, Weizmann Institute, May 2008, at FMQT08, Prague. July 2008, at the Institute for Nuclear Theory, Seattle, program INT-09-2b From Femtoscience to Nanoscience: Nuclei, Quantum Dots, and Nanostructures, August 2009, and at the Workshop on Quantum Transport in Electronic Nanosystems in memory of Albert Schmid and Arkady Aronov, Karlsruhe, September 2009.

Ph.D. Students whose studies are finished, for whom YI was a principal advisor

1. B. Gavish (Alon fellowship): Static and dynamic structure factors of extremely anisotropic crystals, 1975.
2. M. Schwartz: Interacting Bose systems, 1977.
3. E. Ben-Jacob (Weizmann and Alon fellowships): The dynamics of coupled Josephson junctions in the presence of thermal fluctuations, with special distinction, 1982.
4. Y. Porat (with Prof. A. Aharony): Dielectric properties of PZT ceramics under shock waves, 1984.
5. Y. Gefen (Weizmann and Alon fellowships, with Prof. A. Aharony): Critical phenomena and anomalous transport in random and self-similar structures, with special distinction, 1984.
6. U. Sivan (Weizmann fellowship): Electrical and Optical Properties of Disordered Systems, with special distinction, 1988.
7. A. Stern (Harvard Junior fellowship): Interference and dephasing in mesoscopic systems, with special distinction, 1992.
8. N. Argaman (Freed), (Fullbright fellowship), with Prof. U. Smilansky: Applications of the Semiclassical Approximation in Mesoscopic Systems, 1994.
9. M. Schechter (with Y. Levinson), Thermodynamic properties of a small superconducting grain and reflectionless tunneling in normal-metal–superconductor junctions, 2001.
10. U. Gavish, Current noise in mesoscopic systems, 2003.

Theses

1. Magnetic perturbation of angular correlations of the 122 KeV-1418 KeV cascade in ^{152}Sm . M.Sc. thesis (with special distinction), June 1961, with Prof. S.G. Cohen, Hebrew University, Jerusalem.
2. Proton dynamics in hydrogen bonded systems. Ph.D. thesis, 1966, with Prof. I. Pelah, Feinberg Graduate School of the Weizmann Institute of Science.