Gerald Vincent DUNNE, Professor of Physics
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Education:

1984 B. Sc. (First Class Honours), Mathematical Physics, University of Adelaide
1985 M. Sc., Theoretical Physics, University of Adelaide
Thesis: *Deep Inelastic Scattering and the EMC Effect*; Advisor: A. W. Thomas
1988 Ph. D., Theoretical Physics, Imperial College, London
Thesis: *Methods of Quantization*; Advisor: I. G. Halliday

Experience:

1988-90 Postdoctoral Research Associate, Center for Theoretical Physics, MIT
1990-92 Instructor in Applied Mathematics, Department of Mathematics, MIT
1992-96 Assistant Professor, Department of Physics, University of Connecticut
1996-02 Associate Professor, Department of Physics, University of Connecticut
2002- Professor, Department of Physics, University of Connecticut

Professional Societies:

Life Member, American Physical Society
Fellow, Institute of Physics (U.K.)
Fellow, Connecticut Academy of Science and Engineering
2002-2009: Editorial Board, Journal of Physics A: Mathematical and Theoretical
2004-2009: Section Editor for Classical and Quantum Field Theory, Journal of Physics A: Mathematical and Theoretical

Honours or Distinctions:

1984 First Class Honours, Department of Mathematical Physics, University of Adelaide
1985-88 Commonwealth Scholar (U.K. Award), Association of Commonwealth Universities and The British Council
1987 Full Athletics Colours (Squash), Imperial College, London
1998 Chancellor's Research Excellence Award, University of Connecticut
1999 Visiting Associate Professor, Technion, Israel
2000 PPARC Research Fellow, and Visiting Fellow, Balliol College, Oxford
2000 Visiting Professor, Universidad de Santiago de Chile,
2003 Rockefeller Foundation Award: Bellagio (Italy) Residency
2006 Visiting Professor, University of Adelaide Distinguished Visitors Programme
2007 DFG Mercator Professor, Universität Heidelberg,
2014 Visiting Professor, Technion, Israel
2014 Fulbright Senior Scholar, German Fulbright Commission
2014 DFG Mercator Professor, Friedrich-Schiller Universität, Jena

Research Interests: Quantum Field Theory, Theoretical Particle Physics, Non-perturbative Physics, Effective Actions, Schwinger Effect, Chern-Simons Theory, Mathematical Methods of Quantum Theory.

Gerald Vincent DUNNE - Publications

Books

- G. Dunne, *Self-Dual Chern-Simons Theories* (Springer-Verlag, Heidelberg, 1995).

Editorships

- D. Cangemi and G. Dunne, Editors of the Proceedings of *Workshop on Low Dimensional Field Theory*, Telluride CO, August 1996 (World Scientific, Singapore, 1997).
- G. Dunne, L. Horwitz, M. Islam and P. Mannheim, Guest Editors for Festchrift in honor of Kurt Haller, *Foundations of Physics* Volume **30**, Issues 3,4 and 5 (2000).
- P. Dorey, G. Dunne and J. Feinberg, Editors, *Low Dimensional Quantum Field Theory*, Special Issue of JPhysA (IOP Publishing, Bristol, 2007).

Book Chapters

- G. V. Dunne, "Extreme quantum field theory and particle physics with IZEST," in *Zeta-Exawatt Science and Technology*, G. Mourou and T. Tajima (Eds), Special Topics Issue of Eur. Phys. J. ST **223**, no. 6, 1055 (2014).
- E. Akkermans, G. V. Dunne and E. Levy, "Wave propagation in one-dimension: Methods and applications to complex and fractal structures", in *Optics of Aperiodic Structures - Fundamentals and Device Applications*, L. Dal Negro (Ed), Pan Stanford Press (2014).
- G. Basar and G. V. Dunne, "The Chiral Magnetic Effect and Axial Anomalies,", in *Strongly interacting matter in magnetic fields*, D. Kharzeev, K. Landsteiner, A. Schmitt, H.-U. Yee (Eds), (Springer, 2013).
- G. V. Dunne, "Heisenberg-Euler effective Lagrangians: Basics and extensions," in Ian Kogan Memorial Collection, *From Fields to Strings: Circumnavigating Theoretical Physics*, Vol I, M. Shifman et al (Eds), (World Scientific, Singapore, 2004), pp 445 - 522.
- G. Dunne, "Perturbative-Nonperturbative Connection in Quantum Mechanics and Field Theory", plenary talk at ArkadyFest Symposium, University of Minnesota, May 2002. Published in *Continuous Advances in QCD 2002: ArkadyFest*, K. Olive, M. Shifman and M. Voloshin (Eds.), (World Scientific, Singapore 2002), pages 478 - 505.
- G. Dunne, "Aspects of Chern-Simons Theories", Lectures at the 1998 Les Houches (France) NATO Advanced Studies Institute, *Topological Aspects of Low Dimensional Systems*, A.Comtet et al (Editors), (Springer-Verlag, 2000), pages 176 - 263.

- G. Dunne, "Self-Dual Chern-Simons Theories", Plenary Lectures at the 13^{th} *International Symposium on Field Theory and Mathematical Physics*, Mt. Sorak (Korea), June 27 - July 2, 1994. In the proceedings, *Field theory and Mathematical Physics*, J. E. Kim, editor (Mineumsa, Seoul, 1995), pages 1 - 42.

Book Reviews

- "Supersymmetry in Quantum Mechanics", by F. Cooper et al. Review by G. Dunne published in *Contemporary Physics* **44** (2003), 94.

Recent Talks

1. "Overview of the Resurgence Program", review talk at Gauge Field Topology: From Lattice Simulations and Solvable Models to Experiment, Simons Center for Geometry and Physics, Stony Brook, August 19, 2015

2. "Uniform Resurgence and large N", eNLarge Horizons Conference and School, IFT Madrid, June 1, 2015.

3. " Resurgence, Trans-series and Non-perturbative Physics", Plenary Talk, eNLarge Horizons Conference and School, IFT Madrid, May 27, 2015.

4. "Uniform Resurgence in the Mathieu Equation", Resurgence, Physics and Numbers Conference, Centro di Ricerca Matematica Ennio De Giorgi, Scuola Normale Superiore, Pisa, May 18, 2015.

5. "Resurgence and Uniform WKB", Resurgence, Physics and Numbers Conference, Centro di Ricerca Matematica Ennio De Giorgi, Scuola Normale Superiore, Pisa, May 17, 2015.

6. "Resurgence, trans-series and quantum field theory", Seminar, Kadanoff Center for Theoretical Physics, University of Chicago, May 4, 2015

7. "Resurgence, trans-series and quantum field theory", Boston University Physics Seminar, March 25, 2015

8. "Resurgence and trans-series in physics", SCGP Weekly Talk, Colloquium at Simons Center for Geometry and Physics, Stony Brook, March 17, 2015

9. Four lectures: "Resurgence, trans-series and quantum theory", at Schladming Winter School, Intersection Between QCD and Condensed Matter, Austria, March 1 - 6, 2015

10. "Resurgence, trans-series and quantum field theory", Workshop on Progress and Applications of Modern Quantum Field Theory, Aspen Center for Physics, February 17, 2015

11. "Resurgence and the Physics of Divergence", keynote lecture, UK Young Theorists Forum, Institute for Particle Physics Phenomenology, Durham (UK) December 17, 2014.

12. "Resurgence, Trans-series and Non-Perturbative Physics", plenary talk, UK Annual Theory Meeting, Institute for Particle Physics Phenomenology, Durham (UK) December 16, 2014.

13. "Resurgence, Trans-series and Non-Perturbative Physics", seminar, Ohio State Math and Physics, November 13, 2014.

14. "Resurgence, Trans-series and Non-Perturbative Physics", theory seminar, Harvard, October 21, 2014.

15. "Resurgence, Trans-series and Non-Perturbative Physics", theory seminar, MIT, October 20, 2014.

16. "Resurgence and Non-Perturbative Physics", Particle-Astro-Nuclear seminar, UConn, October 6, 2014.

17. "Resurgence: generating (all) non-perturbative physics from perturbation theory", blackboard seminar, KITP Santa Barbara, August 14, 2014.

18. "Super-Adiabatic Particle Number: Vacuum Particle Production in Real Time", KITP Program: Frontiers of Intense Laser Physics, August 5, 2014.

19. "Resurgence in Quantum Field Theory and Quantum Mechanics", plenary talk, CERN Theory Institute: Resurgence and Transseries in Quantum, Gauge and String Theories, June 30, 2014.

20. "Super-Adiabatic Particle Number: Vacuum Particle Production in Real Time", Helmholtz Seminar, Helmholtz Institute Jena (Germany), June 25, 2014.

21. "Resurgence and Non-Perturbative Physics", plenary talk, Recent Developments in Theoretical Physics, KIAS, Seoul (Korea), June 11, 2014.

22. "Resurgence and Non-Perturbative Physics", plenary talk, INFN Annual Theory Meeting, New Frontiers in Theoretical Physics, Cortona (Italy), May 28, 2014.

23. "Resurgence in Quantum Field Theory", quantum field theory seminar, Institute of Theoretical Physics, Jena (Germany), May 22, 2014.

24. "Resurgence and Uniform WKB", math-physics seminar, Humboldt Univ. Berlin (Germany), May 19, 2014.

25. "Resurgence and Non-Perturbative Physics", physics seminar, Ludwig-Maximilian-Univ. Munich (Germany), May 9, 2014.

26. "Resurgence and Non-Perturbative Physics", Space-Time-Matter SFB Plenary Talk, Humboldt Univ. Berlin (Germany), May 6, 2014.

27. "Resurgence and Quantum Field Theory", Teilchentee Colloquium, Institute of Theoretical Physics, Heidelberg, April 24, 2014.

28. "Resurgence and Quantum Field Theory", physics seminar, Institute of Theoretical Physics, Madrid, April 22, 2014.

29. "The search for the Schwinger effect: non-perturbative pair production from vacuum", physics colloquium, Univ. Regensburg (Germany), April 15, 2014.

30. "Resurgence and Non-Perturbative Physics", physics seminar, Univ. Regensburg (Germany), April 14, 2014.

31. "Resurgence and Semiclassical Physics", Graduate Student Seminar, Technion (Israel), January 30, 2014.

32. "Physical Applications of Heat Kernels on Fractals", Physics Seminar, Technion (Israel), January 28, 2014.

33. "The Euler-Heisenberg Effective Action: History and Scientific Legacy", Physics Colloquium, Technion (Israel), January 27, 2014

34. "Resurgence and Quantum Field Theory", plenary talk, Nonperturbative QFT: Methods and Applications, DESY, September 25, 2013

35. "Resurgence: from Rainbows to QCD", University of Adelaide, Physics seminar, September 11, 2013

36. "Extreme QFT and Nonlinear QED at IZEST", plenary talk, IZEST 2013, Livermore Lab, July 17, 2013

37. "Search for the Schwinger effect: non-perturbative pair production from vacuum", Institute Colloquium, and plenary talk, Physics in Intense Fields 2013, DESY, July 10, 2013

38. "Resurgence: Exact WKB in QM and QFT", invited talk, CAQCD 2013 Continuous Advances in QCD, Minnesota, May 17, 2013

39. "Resurgent analysis of asymptotically free QFT: the CPN model", theory seminar at City College, New York, April 29, 2013

40. "The Schwinger Effect: probing the quantum vacuum with really big lasers", Physics Colloquium at San Francisco State University, April 22, 2013

41. "Resurgent analysis of asymptotically free QFT: the CPN model", seminar at Stanford University Institute for Theoretical Physics, April 18, 2013

42. "Resurgent analysis of asymptotically free QFT: the CPN model", seminar at Yale Physics, April 9, 2013

43. "Resurgent analysis of asymptotically free QFT: the CPN model", seminar at Brookhaven National Lab, January 18, 2013

44. "Resurgent analysis of asymptotically free QFT: the CPN model", seminar at Stony Brook Univ Physics, January 17, 2013

45. "Phase Diagram and Baryon-Baryon Scattering in the Gross-Neveu Model", Plenary Talk, Division of Atomic Energy Conference, Delhi, Dec 3, 2012

46. "Chiral Magnetic Effect", QCD in Strong Magnetic Fields, ECT* Trento, Italy, November 13, 2012

47. "Search for the Schwinger Effect", physics colloquium, Trinity College, October 19, 2012

48. "Resurgence and semiclassical physics", UConn PAN seminar, October 1, 2012

49. "The Euler-Heisenberg Effective Action: History and Scientific Legacy": Institute Colloquium, Friedrich-Schiller University, Jena, June 4, 2012.

50. "Quantum Control in the Schwinger Effect", plenary talk, Nonlinear QED and PetaWatt Lasers, Lawrence Berkeley National Lab, May 15, 2012

51. "Quantum Interference in the Schwinger Effect", Technion Physics, April 29, 2012

52. "Search for the Schwinger Effect", Baruch College, NYC, physics seminar, April 23, 2012

53. "Integrability at work: condensates in the Gross-Neveu phase diagram", physics seminar, City College, NY December 16, 2011

54. "Quantum Interference in the Schwinger Effect", plenary talk, IZEST, Paris; International Zeta- Exa-Watt Science and Technology project, Ecole Polytechnique,. November 28, 2011

55. "Search for the Schwinger Effect", Rutgers Newark, Physics Colloquium, November 9, 2011

56. "Physics in Intense Fields", UConn Physics Grad Student Seminar Series, October 21, 2011

57. "Euler-Heisenberg Effective Action: 75 Years Later", QFEXT11 Conference, Benasque Center for Science, Spain September 19 - 24, 2011

58. "Integrability at work: condensates in the Gross-Neveu phase diagram", What is Quantum Field Theory? Confernece, Benasque Center for Science, Spain, September 14 - 18, 2011

59. "Physical Applications of Complex Dimensions of Fractals", American Math Society Conference, Cornell, September 10 - 14, 2011

60. "Physics of Fractals", SIGMA seminar series, UConn Math, September 2, 2011

61. "Physical Applications of Complex Dimensions of Fractals", Waves and Quantum Fields on Fractals, Technion June 25 - 30, 2011

62. "Thermodynamics of Gross-Neveu Models", Continuous Advances in QCD 2012, CAQDC2012, Univ Minnesota, May 11 - 15, 2011

63. "The search for the Schwinger effect: nonperturbative vacuum pair production", Nuclear Physics Seminar, Iowa State University, April 13, 2011

64. "The world's Biggest Microscope: the LHC at CERN", UConn Physics Club, April 7, 2011

65. " Gross-Neveu Gap Equations and Integrable Models", Plenary lecture, Nonlinear Phenomena: A View from Mathematics and Physics, National Taiwan University, Taipei , Jan 11, 2011

66. "Interference Effects in vacuum pair production", invited talk, PQE (Physics of Quantum Electronics, Snowbird) January 4, 2011

67. "Crystalline symmetries in the Gross-Neveu phase diagram", Physics seminar, KEK [Japan], Nov 22, 2010

68. "The search for the Schwinger effect: nonperturbative vacuum pair production", Plenary Lecture, Physics in Intense Fields Conference, KEK [Japan], November 2010

69. "The Laser at 50", Public Lecture: U3A, Adelaide [Australia], July 26, 2010

70. "The search for the Schwinger effect: nonperturbative vacuum pair production", Physics Colloquium, University of Adelaide, July 21, 2010

71. "The world's Biggest Microscope: the LHC at CERN", Public Lecture: U3A, Adelaide [Australia], July 19, 2010

72. "Schwinger Pair Production in Time Dependent Laser Pulses", Physics Colloquium, Univ. Jena, Institute for Theoretical Physics, June 2, 2010

73. "Heat Kernels on Fractals", Kollegiatenseminar: Univ. Jena (Germany), June 1, 2010.

74. "The search for the Schwinger effect: nonperturbative vacuum pair production", Physics Colloquium, Technion [Israel]: May 13, 2010

75. "Chiral Magnetic Spiral", Invited conference talk, Brookhaven workshop: C and CP odd effects in Heavy Ion collisions, April 2010

76. "Crystalline phases in the Gross-Neveu Phase Diagram", plenary lecture, NPQFT10, Univ. Oklahoma, April 2010

77. "The search for the Schwinger effect: nonperturbative vacuum pair production", Physics Colloquium: Univ. Virginia: April 2010

78. "The quantum vacuum", SigmaPiSigma seminar: Univ Virginia, April 2010

79. "Symmetries in the Gross-Neveu Phase Diagram", Invited conference talk: Tony Thomas Fest, Adelaide University, Feb 2010.

80. "The search for the Schwinger effect: nonperturbative vacuum pair production", Invited conference talk: PQE (Physics of Quantum Electronics, Snowbird), January 2010

Refereed Research Papers

1. G. V. Dunne and M. Unsal, "Resurgence and Dynamics of O(N) and Grassmannian Sigma Models", arXiv:1505.07803 [hep-th], to appear in JHEP; HEP entry

2. G. V. Dunne, M. Shifman and M. Unsal, "Infrared Renormalons versus Operator Product Expansions in Supersymmetric and Related Gauge Theories", arXiv:1502.06680 [hep-th], Phys. Rev. Lett. **114**, no. 19, 191601 (2015) ; HEP entry

3. G. Başar and G. V. Dunne, "Resurgence and the Nekrasov-Shatashvili limit: connecting weak and strong coupling in the Mathieu and Lamé systems", arXiv:1501.05671 [hep-th] JHEP **1502**, 160 (2015) ; HEP entry

4. R. Dabrowski and G. V. Dunne, "Superadiabatic particle number in Schwinger and de Sitter particle production," Phys. Rev. D **90**, 025021 (2014) [arXiv:1405.0302 [hep-th]].

5. G. V. Dunne and M. Unsal, "Uniform WKB, Multi-instantons, and Resurgent Trans-Series," Phys. Rev. D **89**, 105009 (2014), arXiv:1401.5202 [hep-th].

6. G. V. Dunne and M. Thies, "Full time-dependent Hartree-Fock solution of large N Gross-Neveu models," Phys. Rev. D **89**, 025008 (2014), [arXiv:1309.2443 [hep-th]].

7. G. V. Dunne and M. Thies, "Transparent Dirac potentials in one dimension: the time-dependent case," Phys. Rev. A **88**, 062115 (2013), [arXiv:1308.5801 [hep-th]].

8. A. Cherman, D. Dorigoni, G. V. Dunne and M. Unsal, "Resurgence in QFT: Unitons, Fractons and Renormalons in the Principal Chiral Model," Phys. Rev. Lett. **112**, 021601 (2014), [arXiv:1308.0127 [hep-th]].

9. G. V. Dunne and M. Unsal, "Generating Non-perturbative Physics from Perturbation Theory," Phys. Rev. D **89**, 041701 (2014) [arXiv:1306.4405 [hep-th]].

10. G. Basar, G. V. Dunne and M. Unsal, "Resurgence theory, ghost-instantons, and analytic continuation of path integrals," JHEP **1310**, 041 (2013) [arXiv:1308.1108 [hep-th]].

11. G. V. Dunne and M. Thies, "Time-Dependent Hartree-Fock Solution of Gross-Neveu models: Twisted Kink Constituents of Baryons and Breathers," Phys. Rev. Lett. **111**, 121602 (2013) [arXiv:1306.4007 [hep-th]].

12. R. Dabrowski and G. V. Dunne, "Fractionalized Non-Self-Dual Solutions in the CP(N-1) Model," Phys. Rev. D **88**, no. 2, 025020 (2013) [arXiv:1306.0921 [hep-th]].

13. G. Basar, G. V. Dunne and D. E. Kharzeev, "Instantons and sphalerons in a magnetic field," Nucl. Phys. A **904-905**, 988c (2013).

14. G. V. Dunne and M. Unsal, "Continuity and Resurgence: towards a continuum definition of the CP(N-1) model," Phys. Rev. D **87**, 025015 (2013) [arXiv:1210.3646 [hep-th]].

15. G. V. Dunne and M. Unsal, "Resurgence and Trans-series in Quantum Field Theory: The CP(N-1) Model," JHEP **1211**, 170 (2012) [arXiv:1210.2423 [hep-th]].

16. G. V. Dunne, "Heat Kernels and Zeta Functions on Fractals," J. Phys. A **45**, 374016 (2012) [arXiv:1205.2723 [math-ph]].

17. E.Akkermans, O. Benichou, G.V. Dunne, A. Teplyaev, and R. Voituriez, "Spatial log-periodic oscillations of first-passage observables in fractals", Phys. Rev. E 86, 061125 (2012).

18. G. V. Dunne, "The Heisenberg-Euler Effective Action: 75 years on," Int. J. Mod. Phys. A **27**, 1260004 (2012) [Int. J. Mod. Phys. Conf. Ser. **14**, 42 (2012)] [arXiv:1202.1557 [hep-th]].

19. G. Basar, G. V. Dunne and D. E. Kharzeev, "Electric dipole moment induced by a QCD instanton in an external magnetic field," Phys. Rev. D **85**, 045026 (2012) [arXiv:1112.0532 [hep-th]].

20. C. K. Dumlu and G. V. Dunne, "Complex Worldline Instantons and Quantum Interference in Vacuum Pair Production," Phys. Rev. D **84**, 125023 (2011) [arXiv:1110.1657 [hep-th]].

21. E. Akkermans and G. V. Dunne, "Ramsey Fringes and Time-domain Multiple-Slit Interference from Vacuum," Phys. Rev. Lett. **108**, 030401 (2012) [arXiv:1109.3489 [hep-th]].

22. G. V. Dunne, C. Fitzner and M. Thies, "Baryon-baryon scattering in the Gross-Neveu model: the large N solution," Phys. Rev. D **84**, 105014 (2011) [arXiv:1108.5888 [hep-th]].

23. G. V. Dunne, "The search for the Schwinger effect: Nonperturbative vacuum pair production," Int. J. Mod. Phys. A **25**, 2373 (2010).

24. G. V. Dunne, A. Huet, J. Hur and H. Min, "The Derivative Expansion at Small Mass for the Spinor Effective Action," Phys. Rev. D **83**, 105013 (2011) [arXiv:1103.3150 [hep-th]].

25. C. M. Bender, G. V. Dunne and P. N. Meisinger, "Complex periodic potentials with real band spectra," Phys. Lett. A **252**, 272 (1999) [cond-mat/9810369].

26. C. K. Dumlu and G. V. Dunne, "Interference Effects in Schwinger Vacuum Pair Production for Time-Dependent Laser Pulses," Phys. Rev. D **83**, 065028 (2011) [arXiv:1102.2899 [hep-th]].

27. G. Basar and G. V. Dunne, "Gross-Neveu Models, Nonlinear Dirac Equations, Surfaces and Strings," JHEP **1101**, 127 (2011) [arXiv:1011.3835 [hep-th]].

28. E. Akkermans, G. V. Dunne and A. Teplyaev, "Physical Consequences of Complex Dimensions of Fractals," Europhys. Lett. **88**, 40007 (2009) [arXiv:0903.3681 [cond-mat.mes-hall]].

29. E. Akkermans, G. V. Dunne and A. Teplyaev, "Thermodynamics of photons on fractals," Phys. Rev. Lett. **105**, 230407 (2010) [arXiv:1010.1148 [cond-mat.stat-mech]].

30. G. V. Dunne, "Crystalline condensates in the chiral symmetry breaking phase diagram," AIP Conf. Proc. **1261**, 37 (2010).

31. M. Beccaria, G. V. Dunne, G. Macorini, A. Tirziu and A. A. Tseytlin, "Exact computation of one-loop correction to energy of pulsating strings in $AdS_5 x S^5$," J. Phys. A **44**, 015404 (2011) [arXiv:1009.2318 [hep-th]].

32. C. K. Dumlu and G. V. Dunne, "The Stokes Phenomenon and Schwinger Vacuum Pair Production in Time-Dependent Laser Pulses," Phys. Rev. Lett. **104**, 250402 (2010) [arXiv:1004.2509 [hep-th]].

33. G. V. Dunne and A. Kovner, "$U_A(1)$ Anomaly at high temperature: the scalar-pseudoscalar splitting in QCD," Phys. Rev. D **82**, 065014 (2010) [arXiv:1004.1075 [hep-ph]].

34. G. V. Dunne, "Symmetries in the Gross-Neveu phase diagram," Int. J. Mod. Phys. A **25**, 616 (2010).

35. G. Basar, G. V. Dunne and D. E. Kharzeev, "Chiral Magnetic Spiral," Phys. Rev. Lett. **104**, 232301 (2010) [arXiv:1003.3464 [hep-ph]].

36. M. Beccaria, G. V. Dunne, V. Forini, M. Pawellek and A. A. Tseytlin, "Exact computation of one-loop correction to energy of spinning folded string in $AdS_5 x S^5$," J. Phys. A **43**, 165402 (2010) [arXiv:1001.4018 [hep-th]].

37. G. Basar and G. V. Dunne, "A Gauge-Gravity Relation in the One-loop Effective Action," J. Phys. A **43**, 072002 (2010) [arXiv:0912.1260 [hep-th]].

38. F. Hebenstreit, R. Alkofer, G. V. Dunne and H. Gies, "Quantum statistics effect in Schwinger pair production in short laser pulses," arXiv:0910.4457 [hep-ph].

39. G. V. Dunne, H. Gies and R. Schutzhold, "Catalysis of Schwinger Vacuum Pair Production," Phys. Rev. D **80**, 111301 (2009) [arXiv:0908.0948 [hep-ph]].

40. F. Correa, G. V. Dunne and M. S. Plyushchay, "The Bogoliubov/de Gennes system, the AKNS hierarchy, and nonlinear quantum mechanical supersymmetry," Annals Phys. **324**, 2522 (2009) [arXiv:0904.2768 [hep-th]].

41. G. Dunne, H. Gies, K. Klingmuller and K. Langfeld, "Worldline Monte Carlo for fermion models at large N(f)," JHEP **0908**, 010 (2009) [arXiv:0903.4421 [hep-th]].

42. G. Basar, G. V. Dunne and M. Thies, "Inhomogeneous Condensates in the Thermodynamics of the Chiral NJL(2) model," Phys. Rev. D **79**, 105012 (2009) [arXiv:0903.1868 [hep-th]].

43. F. Hebenstreit, R. Alkofer, G. V. Dunne and H. Gies, "Momentum signatures for Schwinger pair production in short laser pulses with sub-cycle structure," Phys. Rev. Lett. **102**, 150404 (2009) [arXiv:0901.2631 [hep-ph]].

44. G. V. Dunne, "New Strong-Field QED Effects at ELI: Nonperturbative Vacuum Pair Production," Eur. Phys. J. D **55**, 327 (2009) [arXiv:0812.3163 [hep-th]].

45. G. V. Dunne and K. Kirsten, "Simplified Vacuum Energy Expressions for Radial Backgrounds and Domain Walls," J. Phys. A **42**, 075402 (2009) [arXiv:0812.0620 [hep-th]].

46. G. V. Dunne and H. Min, "Abelian Zero Modes in Odd Dimensions," Phys. Rev. D **78**, 067701 (2008) [arXiv:0808.2991 [hep-th]].

47. R. Schutzhold, H. Gies and G. Dunne, "Dynamically assisted Schwinger mechanism," Phys. Rev. Lett. **101**, 130404 (2008) [arXiv:0807.0754 [hep-th]].

48. G. V. Dunne, "Worldline instantons, vacuum pair production and Gutzwiller's trace formula," J. Phys. A **41**, 164041 (2008).

49. G. Basar and G. V. Dunne, "A Twisted Kink Crystal in the Chiral Gross-Neveu model," Phys. Rev. D **78**, 065022 (2008) [arXiv:0806.2659 [hep-th]].

50. G. Basar and G. V. Dunne, "Self-consistent crystalline condensate in chiral Gross-Neveu and Bogoliubov-de Gennes systems," Phys. Rev. Lett. **100**, 200404 (2008) [arXiv:0803.1501 [hep-th]].

51. J. Ruostekoski, J. Javanainen and G. V. Dunne, "Manipulating atoms in an optical lattice: Fractional fermion number and its optical quantum measurement," Phys. Rev. A **77**, 013603 (2008) [arXiv:0709.2187 [cond-mat.other]].

52. G. V. Dunne, J. Hur, C. Lee and H. Min, "Renormalized Effective Actions in Radially Symmetric Backgrounds: Exact Calculations Versus Approximation Methods," Phys. Rev. D **77**, 045004 (2008) [arXiv:0711.4877 [hep-th]].

53. G. V. Dunne, "Functional determinants in quantum field theory," J. Phys. A **41**, 304006 (2008) [arXiv:0711.1178 [hep-th]].

54. K. Langfeld, G. Dunne, H. Gies and K. Klingmuller, "Worldline Approach to Chiral Fermions," PoS LAT **2007**, 202 (2007) [arXiv:0709.4595 [hep-lat]].

55. D. D. Dietrich and G. V. Dunne, "Gutzwiller's trace formula and vacuum pair production," J. Phys. A **40**, F825 (2007) [arXiv:0706.4006 [hep-th]].

56. G. V. Dunne, J. Hur and C. Lee, "Renormalized Effective Actions in Radially Symmetric Backgrounds. I. Partial Wave Cutoff Method," Phys. Rev. D **74**, 085025 (2006) [hep-th/0609118].

57. G. V. Dunne, A. Huet, D. Rivera and C. Schubert, "Closed-form weak-field expansion of two-loop Euler-Heisenberg Lagrangians," JHEP **0611**, 013 (2006) [hep-th/0609065].

58. G. V. Dunne and Q. -h. Wang, "Multidimensional Worldline Instantons," Phys. Rev. D **74**, 065015 (2006) [hep-th/0608020].

59. A. K. Das and G. V. Dunne, "Large-order Perturbation Theory and de Sitter/Anti de Sitter Effective Actions," Phys. Rev. D **74**, 044029 (2006) [hep-th/0607168].

60. G. V. Dunne and K. Kirsten, "Functional determinants for radial operators," J. Phys. A **39**, 11915 (2006) [hep-th/0607066].

61. G. V. Dunne and Q. -h. Wang, "Fluctuations about Cosmological Instantons," Phys. Rev. D **74**, 024018 (2006) [hep-th/0605176].

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