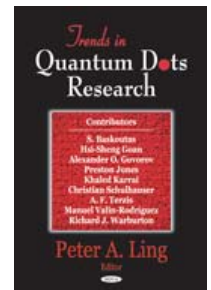
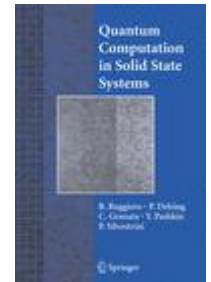
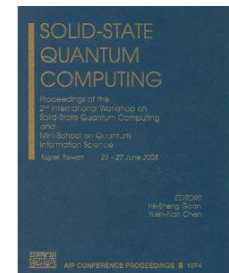
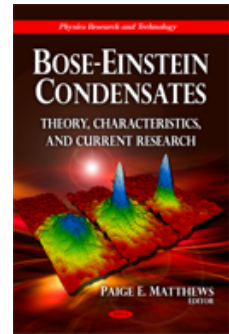


List of Publications

A. Book Chapters, Proceedings

1. Md. M. Ali and Hsi-Sheng Goan*, “*Quantum Interference in the Time-of-Flight Distribution for Atomic Bose-Einstein Condensates*”, **invited book chapter** in “*Bose-Einstein Condensates: Theory, Characteristics, and Current Research*”, Ed. by P. E. Matthews (Nova Science, New York, **2010**) pp. 35-61. [ISBN: 978-1-61728-114-3]
2. SOLID-STATE QUANTUM COMPUTING: **American Institute of Physics (AIP) Conference Proceedings Volume 1074** (AIP, Melville, New York, **2008**); Ed. by Hsi-Sheng Goan* and Y. N. Chen. [ISBN: 978-0-7354-0605-6]
3. Hsi-Sheng Goan*, Guest Editor for Physics Bimonthly, Vol. 30, no. 5 (October, **2008**), Special issue on Quantum Information and Quantum Computation.
[編輯者，物理雙月刊 30 卷 5 期（**2008** 年 10 月）量子資訊與量子計算特輯]
4. Hsi-Sheng Goan*, “*Monte Carlo method for a superconducting cooper-pair-box charge qubit measured by a single-electron transistor*”, in “*Quantum Computation in Solid State Systems*”, Ed. by B. Ruggiero, P. Delsing, C. Granata, Y. Pashkin and P. Silvestrini (Springer, New York, **2006**) pp.171-179. [ISBN: 0-387-26332-2]
5. Hsi-Sheng Goan*, “*Quantum measurement process of a coupled quantum dot system*”, **invited book chapter** in “*Trends in Quantum Dots Research*”, Ed. By P.A. Ling (Nova Science, New York, **2005**) pp.35-73. [ISBN: 1-59454-407-7]



B. Journal Papers

Submitted:

1. Hsi-Sheng Goan*, P.-W. Chen and C.-C. Jian, “*Evolution equations of non-Markovian finite-temperature two-time correlation functions: beyond the quantum regression*”

theorem”, submitted to Journal of Chemical Physics.

2. P.-W. Chen, C.-C. Jian and Hsi-Sheng Goan*, “Non-Markovian dynamics of a nanomechanical resonator measured by a quantum point contact”, submitted to Physics Review B.

Published or Accepted for Publications:

3. X. Z. Yuan, Hsi-Sheng Goan* and K. D. Zhu, “Dynamics of a driven spin coupled to an antiferromagnetic environment”, accepted for publication in **New Journal of Physics** (2011).
4. S. Raghunathan*, T. A. Brun*, Hsi-Sheng Goan*, “Gaussian approximation and single-spin measurement in magnetic resonance force microscopy with spin noise”, **Physical Review A** **82**, 052319 (2010).
5. Md. M. Ali, P.-W. Chen and Hsi-Sheng Goan*, “Decoherence-free subspace and disentanglement dynamics for two qubits in a common non-Markovian squeezed reservoir”, **Physical Review A** **82**, 022103 (2010).
6. Hsi-Sheng Goan*, C.-C. Jian and P.-W. Chen, “Non-Markovian finite-temperature two-time correlation functions of system operators of a pure-dephasing model”, **Physical Review A** **82**, 012111 (2010).
7. X. Z. Yuan, Hsi-Sheng Goan* and K. D. Zhu, “Geometric phase of a central spin coupled to an antiferromagnetic environment”, **Physical Review A** **81**, 034102 (2010).
8. C.-A. Yen, S.-J. Horng, Hsi-Sheng Goan*, T.-W. Kao, Comment on “A special attack on the multiparty quantum secret sharing of secure direct communication using single photons”, **Optics Communications** **283**, 3202 (2010).
9. D.-B. Tsai, P.-W. Chen, and Hsi-Sheng Goan*, “Optimal control of the silicon-based donor-electron-spin quantum computing”, **Physical Review A (Rapid Communications)** **79**, 060306 (R) (2009).
10. Md. M. Ali and Hsi-Sheng Goan*, “Matter-wave interference in the time-of-flight distribution”, **Journal of Physics A: Mathematical and Theoretical** **42**, 385303 (2009).
11. C.-A. Yen, S.-J. Horng, Hsi-Sheng Goan*, T.-W. Kao, Y.-H. Chou, “Quantum direct communication with mutual authentication”, **Quantum Information & Computation** **9**, 0376-0394 (2009).
12. X. Z. Yuan, Hsi-Sheng Goan*, C. H. Lin, K. D. Zhu and Y. W. Jiang, “Nanomechanical-resonator-assisted induced transparency in a Cooper-pair-box system”, **New Journal of Physics** **10**, 095016 (2008).
13. T.-Y. Huang, C.-T. Liang*, G.-H. Kim, C. F. Huang, C.-P. Huang, J.-Y. Lin, Hsi-Sheng Goan, and D.A. Ritchie, “From insulator to quantum Hall liquid at low magnetic fields”, **Physical Review B** **78**, 113305 (2008).

14. X. Z. Yuan*, K. D. Zhu and Hsi-Sheng Goan, “*The dynamics of a central spin in quantum Heisenberg XY model*”, **European Physical Journal D** **46**, 375 (2008)
15. K.-L. Liu and Hsi-Sheng Goan*, “*Non-Markovian entanglement dynamics of quantum continuous variable systems in thermal environments*”, **Physical Review A** **76**, 022312 (2007).
16. C. Wu, Z. Wang, X.-L. Feng, Hsi-Sheng Goan, L.C. Kwek, C.H. Lai and C.H. Oh*, “*Unconventional geometric quantum computation in a two-mode cavity*”, **Physical Review A** **76**, 024302 (2007).
17. X. Z. Yuan, Hsi-Sheng Goan* and K. D. Zhu, “*Influence of an external magnetic field on the decoherence of a central spin coupled to an antiferromagnetic environment*”, **New Journal of Physics** **9**, 219 (2007).
18. X.Z. Yuan, Hsi-Sheng Goan* and K.D. Zhu “*Non-Markovian reduced dynamics and entanglement evolution of two coupled spins in a quantum spin environment*”, **Physical Review B** **75**, 045331-1—045331-8, (2007).
19. D.W. Utami*, Hsi-Sheng Goan*, C. A. Holmes and G. J. Milburn, “*Quantum noise in a quantum electromechanical shuttle*”, **Physical Review B** **74**, 014303-1—014303-20, (2006).
20. J. Twamley*, D.W. Utami, Hsi-Sheng Goan, and G. J. Milburn, “*Spin detection in a quantum electromechanical system*”, **New Journal of Physics** **8**, 63-1—63-27 (2006).
21. L. M. Kettle, Hsi-Sheng Goan*, and S. C. Smith, “*Molecular orbital calculations of two-electron states for P-donor solid-state spin qubits*”, **Physical Review B** **73**, 115205-1—115205-14 (2006).
22. M. Sarovar*, Hsi-Sheng Goan*, T. P. Spiller, and G. J. Milburn, “*High fidelity measurement and quantum feedback control in circuit QED*”, **Physical Review A** **72**, 062327-1—062327-10 (2005).
23. W. K. Hensinger*, D. W. Utami, Hsi-Sheng Goan, K. Schwab, C. Monroe, and G. J. Milburn, “*Ion trap transducers for quantum electromechanical oscillators*”, **Physical Review A (Rapid Communications)** **72**, 041405(R)-1—041405(R)-4 (2005).
24. C. D. Hill*, L. C. L. Hollenberg, A. G. Fowler, C. J. Wellard, A. D. Greentree, and Hsi-Sheng Goan, “*Global control and fast solid-state donor electron spin quantum computing*”, **Physical Review B** **72**, 045350-1—045350-9 (2005).
25. Hsi-Sheng Goan*, “*Silicon-based nuclear spin quantum computer*”, **International Journal of Quantum Information** **3**, 27—40 Suppl. (2005).[SCI]
26. T. A. Brun* and Hsi-Sheng Goan*, “*Realistic simulations of single-spin measurement via magnetic resonance force microscopy*”, **International Journal of Quantum Information** **3**, 1—9 Suppl. (2005).
27. T. M. Stace*, S.D. Barrett, Hsi-Sheng Goan and G. J. Milburn, “*Parity measurement of one- and two-electron double well systems*”, **Physical Review B** **70**,

205342-1—205342-14 (2004).

28. Hsi-Sheng Goan*, “*Monte Carlo method for a quantum measurement process by a single-electron transistor*”, **Physical Review B** **70**, 075305-1— 075305-7 (2004).
29. D.H. Santamore*, Hsi-Sheng Goan*, and G.J. Milburn and M.L. Roukes, “*Anharmonic effects on a phonon number measurement of a quantum mesoscopic mechanical oscillator*”, **Physical Review A** **70**, 052105-1--052105-10 (2004).
30. D.W. Utami*, Hsi-Sheng Goan* and G.J. Milburn, “*Charge transport in a quantum electromechanical system*”, **Physical Review B** **70**, 075303-1— 075303-10 (2004).
31. C.D. Hill* and Hsi-Sheng Goan*, “*Gates for the Kane quantum computer in the presence of dephasing*”, **Physical Review A** **70**, 022310-1—022310-9 (2004).
32. C.D. Hill* and Hsi-Sheng Goan*, “*Comment on ‘Grover search with pairs of trapped ions’*”, **Physical Review A** **69**, 056301-1—056301-3 (2004).
33. C.J. Wellard*, L.C.L. Hollenberg, L.M. Kettle and Hsi-Sheng Goan, “*Voltage control of exchange coupling in phosphorus doped silicon*”, **Journal of Physics: Condensed Matter** **16**, 5697-5704 (2004).
34. L.M. Kettle*, Hsi-Sheng Goan*, S.C. Smith, L.C.L. Hollenberg and C.J. Wellard, “*Effect of J-gate potential and interfaces on donor exchange coupling in the Kane quantum computer architecture*”, **Journal of Physics: Condensed Matter** **16**, 1011-1023 (2004).
35. Hsi-Sheng Goan*, “*An analysis of reading out the state of a charge quantum bit*”, **Quantum Information & Computation** **3**, 121-138 (2003).
36. L.M. Kettle*, Hsi-Sheng Goan*, S.C. Smith, C.J. Wellard, L.C.L. Hollenberg and C.I. Pakes, “*A numerical study of hydrogenic effective mass theory for an impurity P donor in Si in the presence of an electric field and interfaces*”, **Physical Review B** **68**, 075317-1—075317-6 (2003).
37. C.D. Hill* and Hsi-Sheng Goan*, “*Fast non-adiabatic two-qubit gates for the Kane quantum computer*”, **Physical Review A** **68**, 012321-1—012321-11 (2003).
38. T.A. Brun* and Hsi-Sheng Goan*, “*Realistic simulations of single-spin nondemolition measurement by magnetic resonance force microscopy*”, **Physical Review A** **68**, 032301-1—032301-14 (2003).
39. G.P. Berman*, F. Borgonovi, Hsi-Sheng Goan, S.A. Gurvitz, and V.I. Tsifrinovich, “*Single-spin measurement and decoherence in magnetic resonance force microscopy*”, **Physical Review B** **67**, 094425-1—094425-6 (2003).
40. C.J. Wellard*, L.C.L. Hollenberg, F. Parisoli, L.M. Kettle, Hsi-Sheng Goan, J.A.L. McIntosh and D.N. Jamieson, “*Electron exchange coupling for single donor solid-state spin qubits*”, **Physical Review B** **68**, 195209-1—195209-9 (2003).
41. R.G. Clark*, R. Brenner, T.M. Buehler, V. Chan, N.J. Curson, A.S. Dzurak, E. Gauja, Hsi-Sheng Goan, A.D. Greentree et al., “*Progress in silicon-based quantum computing*”,

Philosophical Transactions of the Royal Society of London A 361, 1451-1471 (2003).

42. Hsi-Sheng Goan* and G. J. Milburn, “*Dynamics of a mesoscopic charge quantum bit under continuous quantum measurement*”, **Physical Review B 64**, 235307-1—235307-12 (2001).
43. Hsi-Sheng Goan*, G. J. Milburn, H. M. Wiseman, and H. B. Sun, “*Continuous quantum measurement of two coupled quantum dots using a point contact: A quantum trajectory approach*”, **Physical Review B 63**, 125326-1—125326-12 (2001).
44. V. M. Yakovenko*, Hsi-Sheng Goan, J. Eom and W. Kang, “*Temperature evolution of the quantum Hall effect in the FISDW state: Theory vs. experiment*”, **Journal de Physique IV 9**, 195-197 (1999).
45. V. M. Yakovenko* and Hsi-Sheng Goan*, “*The influence of magnetic-field-induced spin-density-wave motion and finite temperature on the quantum Hall effect in quasi-one-dimensional conductors: A quantum field theory*”, **Physical Review B 58**, 10648-10664 (1998).
46. V. M. Yakovenko* and Hsi-Sheng Goan, “*Edge and bulk electron states in a quasi-one-dimensional metal in a magnetic field: semi-infinite Wannier-Stark ladder*”, **Physical Review B 58**, 8002-8008 (1998).
47. Hsi-Sheng Goan* and V. M. Yakovenko*, “*Temperature evolution of the quantum Hall effect in quasi-one-dimensional organic conductors*”, **Synthetic Metals 85**, 1609-1612 (1997).
48. V. M. Yakovenko* and Hsi-Sheng Goan*, “*Quantum Hall effect in quasi-one-dimensional conductors: The roles of moving FISDW, finite temperature, and edge states*”, **Journal de Physique I 6**, 1917-1937 (1996).

C. Conference full papers

1. D.-B. Tsai and Hsi-Sheng Goan*, *Gradient ascent pulse engineering approach to CNOT gates in donor electron spin quantum computing*, AIP Conference Proceedings Vol. 1074, pp.50-53 (2008). [ISBN: 978-0-7354-0605-6]
2. C.-H. Lin and Hsi-Sheng Goan*, *Conditional statistics of electron transport in interacting mesoscopic devices*, AIP Conference Proceedings Vol. 1074, pp.103-106 (2008). [ISBN: 978-0-7354-0605-6]
3. X. Z. Yuan* and Hsi-Sheng Goan, **2007**, “*Dynamics of a driven spin coupled to an antiferromagnetic environment*”, Proceedings of the 8th International Conference on Quantum Communication, Measurement and Computing, Tsukuba, Japan, pp.425-428. (NICT Press, Tokyo, 2007) [ISBN978-4-904020-00-5]
4. K.-L. Liu and Hsi-Sheng Goan*, **2007**, “*Non-Markovian dynamics of the entanglement of electromechanical oscillators in thermal environments*”, Proceedings of the 8th International Conference on Quantum Communication, Measurement and Computing,

- Tsukuba, Japan, pp.287-290 (NICT Press, Tokyo, 2007).[ISBN978-4-904020-00-5]
5. X. Z. Yuan, Hsi-Sheng Goan* and K. D. Zhu, **2007**, “*Entanglement evolution of two coupled spin qubits in a quantum spin environment*”, Proceedings of the 8th International Conference on Quantum Communication, Measurement and Computing, Tsukuba, Japan, pp.291-294 (NICT Press, Tokyo, 2007). [ISBN978-4-904020-00-5]
 6. G. J. Milburn*, C. A. Holmes, L. M. Kettle and Hsi-Sheng Goan, **2007**, “*A microwave transducer for a nano mechanical resonator*”, Proceedings of the 8th International Conference on Quantum Communication, Measurement and Computing, Tsukuba, Japan, pp.357-362 (NICT Press, Tokyo, 2007). [ISBN978-4-904020-00-5]; arXiv:cond-mat/0702512.
 7. C. D. Hill*, Lloyd C. L. Hollenberg, Austin G. Fowler, Cameron J. Wellard, A. D. Greentree, and Hsi-Sheng Goan, **2005**, “*Fast donor-based electron spin quantum computing*”, Proc. SPIE Int. Soc. Opt. Eng. **5650**, pp.44-54.
 8. Hsi-Sheng Goan* and Todd A. Brun, **2004**, “*Single-spin measurement by magnetic resonance force microscopy: Effects of measurement device, thermal noise and spin relaxation*”, Proc. SPIE Int. Soc. Opt. Eng. **5276**, pp.250-261.
 9. D.W. Utami*, Hsi-Sheng Goan*, and G.J. Milburn, **2004**, “*A quantum electromechanical system*”, Proc. SPIE Int. Soc. Opt. Eng. **5276**, pp.191-201.
 10. C.D. Hill and Hsi-Sheng Goan*, **2004**, “*Fast non-adiabatic gates and quantum algorithms on the Kane quantum computer in the presence of dephasing*”, AIP Conference Proceedings Vol. **734**, pp.167-170.
 11. Hsi-Sheng Goan*, **2002**, “*A qubit-state readout analysis: Quantum trajectories vs. master equation approach*”, Proceedings of the 6th International Conference on Quantum Communication, Measurement and Computing, MIT Cambridge, MA, USA (Rinton Press, New Jersey) pp. 295-298
 12. Hsi-Sheng Goan*, **2002**, “*Master equation approach and quantum trajectories of a quantum measurement process*”, Proceedings of the Australian Institute of Physics Congress, Sydney, Australia, (AIP) pp. 400-402.
 13. Hsi-Sheng Goan*, **2002**, “*Quantum trajectories and quantum measurement theory in solid-state mesoscopics*”, Proceedings of the 26th International Conference on Physics of Semiconductors, Edinburgh, UK (IOP) P247 (8 pages)..
 14. Hsi-Sheng Goan* and G. J. Milburn, **2001**, “*Conditional quantum evolution induced by continuous measurement for a mesoscopic qubit*”, Proceedings of the International Conference on Experimental Implementations of Quantum Computing, Sydney, Australia (Rinton Press, New Jersey) pp. 306-309.
 15. V. M. Yakovenko* and Hsi-Sheng Goan*, **1996**, “*What happens to the quantum Hall effect when magnetic-field-induced spin-density wave moves*”, *Proceedings of Physical Phenomena at High Magnetic Fields - II* (World Scientific, Singapore) pp. 116-121.

