

1. Ahmed, E.H., Huennekens, J., Kirova, T., Qi, J. & Lyyra, A.M. 2012, "The Autler-Townes Effect in Molecules: Observations, Theory, and Applications", *Advances in Atomic, Molecular, and Optical Physics, Vol 61*, vol. 61, pp. 467-514.
2. Andrew, R.C., Braun, M. & Chetty, N. 2012, "A theoretical investigation of the stability of crystalline silicon dicarbide", *Computational Materials Science*, vol. 55, pp. 186-191.
3. Andrew, R.C., Mapasha, R.E., Ukpong, A.M. & Chetty, N. 2012, "Mechanical properties of graphene and boronitrene", *Physical Review B*, vol. 85, no. 12, pp. 125428.
4. Attal, S., Petruccione, F., Sabot, C. & Sinayskiy, I. 2012, "Open Quantum Random Walks", *Journal of Statistical Physics*, vol. 147, no. 4, pp. 832-852.
5. Attal, S., Petruccione, F. & Sinayskiy, I. 2012, "Open quantum walks on graphs", *Physics Letters a*, vol. 376, no. 18, pp. 1545-1548.
6. Avdeenkov, A.V. 2012, "Dipolar collisions of ultracold polar molecules in a microwave field", *Physical Review a*, vol. 86, no. 2, pp. 022707.
7. Barchielli, A., Pellegrini, C. & Petruccione, F. 2012, "Quantum trajectories: Memory and continuous observation", *Physical Review a*, vol. 86, no. 6, pp. 063814.
8. Belhaj, A., Diaz, P., Pilar Garcia Del Moral, M. & Segui, A. 2012, "On Chern-Simons Quivers and Toric Geometry", *International Journal of Geometric Methods in Modern Physics*, vol. 9, no. 7, pp. 1250050.
9. Belhaj, A., Diaz, P. & Segui, A. 2012, "The Yang monopole in IIA superstring: multi-charge disease and enhancon cure", *Journal of Physics A-Mathematical and Theoretical*, vol. 45, no. 4, pp. 045401.
10. Bodrenko, I.V., Avdeenkov, A.V., Bessarabov, D.G., Bibikov, A.V., Nikoaev, A.V., Taran, M.D. & Tkalya, E.V. 2012, "Hydrogen Storage in Aromatic Carbon Ring Based Molecular Materials Decorated with Alkali or Alkali-Earth Metals", *Journal of Physical Chemistry C*, vol. 116, no. 48, pp. 25286-25292.
11. Bucher, M., Carvalho, C.S., Moodley, K. & Remazeilles, M. 2012, "CMB lensing reconstruction in real space", *Physical Review D*, vol. 85, no. 4, pp. 043016.
12. Caputa, P. 2012, "Lightlike contours with fermions", *Physics Letters B*, vol. 716, no. 3-5, pp. 475-480.

13. Caputa, P., Koch, R.d.M. & Zoubos, K. 2012, "Extremal vs. non-extremal correlators with giant gravitons", *Journal of High Energy Physics*, , no. 8, pp. 143.
14. Cho, H.T., Cornell, A.S., Doukas, J., Huang, T.-. & Naylor, W. 2012, "A New Approach to Black Hole Quasinormal Modes: A Review of the Asymptotic Iteration Method", *Advances in Mathematical Physics*, , pp. 281705.
15. Cho, H.T., Cornell, A.S., Doukas, J. & Naylor, W. 2012, "Scalar Spheroidal Harmonics in Five Dimensional Kerr-(A)dS", *Progress of Theoretical Physics*, vol. 128, no. 2, pp. 227-241.
16. Clarkson, C., Ellis, G.F.R., Faltenbacher, A., Maartens, R., Umeh, O. & Uzan, J. 2012, "(Mis)interpreting supernovae observations in a lumpy universe", *Monthly Notices of the Royal Astronomical Society*, vol. 426, no. 2, pp. 1121-1136.
17. Cornell, A.S., Deandrea, A., Liu, L. & Tarhini, A. 2012, "Scaling of the CKM matrix in the 5D MSSM", *Physical Review D*, vol. 85, no. 5, pp. 056001.
18. Diaz, P. & Lazaro-Cami, J. 2012, "Monopoles in Even Dimensions", *Reports on Mathematical Physics*, vol. 70, no. 1, pp. 65-103.
19. Fadafan, K.B. & Soltanpanahi, H. 2012, "Energy loss in a strongly coupled anisotropic plasma", *Journal of High Energy Physics*, , no. 10, pp. 085.
20. Fantoni, R. 2012, "A cluster theory for a Janus fluid", *European Physical Journal B*, vol. 85, no. 3, pp. 108.
21. Fantoni, R. 2012, "The density of a fluid on a curved surface", *Journal of Statistical Mechanics-Theory and Experiment*, , pp. P10024.
22. Fantoni, R. 2012, "Localization of acoustic polarons at low temperatures: A path-integral Monte Carlo approach", *Physical Review B*, vol. 86, no. 14, pp. 144304.
23. Fantoni, R. 2012, "Two component plasma in a Flamm's paraboloid", *Journal of Statistical Mechanics-Theory and Experiment*, , pp. P04015.
24. Fantoni, R., Salari, J.W.O. & Klumperman, B. 2012, "Structure of colloidosomes with tunable particle density: Simulation versus experiment", *Physical Review E*, vol. 85, no. 6, pp. 061404.
25. Gangopadhyay, S., Deb, R.N. & Scholtz, F.G. 2012, "Statistical interparticle potential on noncommutative space", *Epl*, vol. 97, no. 2, pp. 21001.

26. Ghesquiere, A., Sinayskiy, I. & Petruccione, F. 2012, "Non-equilibrium steady state entanglement in a continuous variable system", *Proceedings of Saip2012: the 57th Annual Conference of the South African Institute of Physics*, , pp. 561-565.
27. Ghesquiere, A., Sinayskiy, I. & Petruccione, F. 2012, "Non-equilibrium thermal entanglement in a two-particle system", *Physica Scripta*, vol. T151, pp. 014017.
28. Giataganas, D. 2012, "Probing strongly coupled anisotropic plasma", *Journal of High Energy Physics*, , no. 7, pp. 031.
29. Giataganas, D. & Irges, N. 2012, "Flavor corrections in the static potential in holographic QCD", *Physical Review D*, vol. 85, no. 4, pp. 046001.
30. Giataganas, D., Lozano, Y., Picos, M. & Siampos, K. 2012, "Non-singlet baryons in less supersymmetric backgrounds", *Journal of High Energy Physics*, , no. 6, pp. 123.
31. Giraldi, F. & Petruccione, F. 2012, "Open System Approach to the Internal Dynamics of a Model Multilevel Molecule", *Open Systems & Information Dynamics*, vol. 19, no. 2, pp. 1250011.
32. Giraldi, F. & Petruccione, F. 2012, "Arbitrarily Slow Relaxations in a Spin-Boson Model Under the Noninteracting-Blip Approximation", *International Journal of Quantum Information*, vol. 10, no. 8, pp. 1241001.
33. Giraldi, F. & Petruccione, F. 2012, "Critical frequency control for arbitrarily slow decoherence of a qubit", *Physical Review a*, vol. 85, no. 6, pp. 062107.
34. Giraldi, F. & Petruccione, F. 2012, "Discontinuities in a damped quantum harmonic oscillator", *Journal of Physics A-Mathematical and Theoretical*, vol. 45, no. 28, pp. 285306.
35. Goldstein, K. & Soltanpanahi, H. 2012, "CFT duals of black rings with higher derivative terms", *Classical and Quantum Gravity*, vol. 29, no. 8, pp. 085016.
36. Heiss, W.D. 2012, "The physics of exceptional points", *Journal of Physics A-Mathematical and Theoretical*, vol. 45, no. 44, pp. 444016.
37. Hiller, M., Rehn, M., Petruccione, F., Buchleitner, A. & Konrad, T. 2012, "Unsharp continuous measurement of a Bose-Einstein condensate: Full quantum state estimation and the transition to classicality", *Physical Review a*, vol. 86, no. 3, pp. 033624.
38. Jafari, S., Sheikhan, A., Esmailpour, A., Anvari, M. & Tabar, M.R.R. 2012, "Metal-insulator transition in three-dimensional Anderson superlattice with rough interfaces", *Physical Review B*, vol. 85, no. 22, pp. 224204.

39. Jejjala, V., Kavic, M., Minic, D. & Tze, C. 2012, "Modeling Time's Arrow", *Entropy*, vol. 14, no. 4, pp. 614-629.
40. Kastner, M. 2012, "Long-time asymptotics of the long-range Emch-Radin model", *Central European Journal of Physics*, vol. 10, no. 3, pp. 637-644.
41. Koch, R.d.M., Ives, N. & Stephanou, M. 2012, "On subgroup adapted bases for representations of the symmetric group", *Journal of Physics A-Mathematical and Theoretical*, vol. 45, no. 13, pp. 135204.
42. Koch, R.d.M., Diaz, P. & Soltanpanahi, H. 2012, "Non-planar anomalous dimensions in the $sl(2)$ sector", *Physics Letters B*, vol. 713, no. 4-5, pp. 509-513.
43. Koch, R.d.M., Kemp, G., Mohammed, B.A.E. & Smith, S. 2012, "Nonplanar integrability at two loops", *Journal of High Energy Physics*, , no. 10, pp. 144.
44. Koch, R.d.M., Kemp, G. & Smith, S. 2012, "From large N nonplanar anomalous dimensions to open spring theory", *Physics Letters B*, vol. 711, no. 5, pp. 398-403.
45. Koch, R.d.M., Mohammed, B.A.E., Murugan, J. & Prinsloo, A. 2012, "Beyond the planar limit in ABJM", *Journal of High Energy Physics*, , no. 5, pp. 037.
46. Koch, R.d.M. & Murugan, J. 2012, "Emergent spacetime", *Foundations of Space and Time: Reflections on Quantum Gravity*, , pp. 164-184.
47. Koch, R.d.M. & Ramgoolam, S. 2012, "A double coset ansatz for integrability in AdS/CFT", *Journal of High Energy Physics*, , no. 6, pp. 083.
48. Koch, R.d.M. & Ramgoolam, S. 2012, "Strings from Feynman graph counting: Without large N", *Physical Review D*, vol. 85, no. 2, pp. 026007.
49. Konrad, T. & Uys, H. 2012, "Maintaining quantum coherence in the presence of noise through state monitoring", *Physical Review a*, vol. 85, no. 1, pp. 012102.
50. Kriel, J.N. & Scholtz, F.G. 2012, "Eigenvalue distributions from a star product approach", *Journal of Physics A-Mathematical and Theoretical*, vol. 45, no. 47, pp. 475204.
51. Kriel, J.N. & Scholtz, F.G. 2012, "The entropy of dense non-commutative fermion gases", *Journal of Physics A-Mathematical and Theoretical*, vol. 45, no. 9, pp. 095301.
52. Liu, L. & Cornell, A.S. 2012, "Improved vacuum stability in a 5D extra-dimension model", *Physical Review D*, vol. 86, no. 5, pp. 056002.

53. Liu, L. & Nitta, M. 2012, "Non-Abelian Vortex-String Dynamics from Nonlinear Realization", *International Journal of Modern Physics a*, vol. 27, no. 18, pp. 1250097.
54. Mafu, M. & Petruccione, F. 2012, "Derivation of the quantum bit-error-rate for BB84 protocol based on the phase-covariant cloning machine", *Proceedings of Saip2012: the 57th Annual Conference of the South African Institute of Physics*, , pp. 566-571.
55. Mafu, M. & Petruccione, F. 2012, "Upper bound to accessible information for the six-state quantum key distribution protocol", *Proceedings of Saip2012: the 57th Annual Conference of the South African Institute of Physics*, , pp. 572-575.
56. Mapasha, R.E., Ukpong, A.M. & Chetty, N. 2012, "Ab initio studies of hydrogen adatoms on bilayer graphene", *Physical Review B*, vol. 85, no. 20, pp. 205402.
57. Marais, A., Sinayskiy, I. & Petruccione, F. 2012, "Models of decoherence-assisted transport in quantum networks", *Proceedings of Saip2012: the 57th Annual Conference of the South African Institute of Physics*, , pp. 576-581.
58. Mariola, M., Mirza, A. & Petruccione, F. 2012, "Influence of the motion of aerospace systems on the polarization angle of qubits for free space QKD", *Proceedings of Saip2012: the 57th Annual Conference of the South African Institute of Physics*, , pp. 505-510.
59. Mashapa, M.G., Chetty, N. & Ray, S.S. 2012, "Ab Initio Studies of Vacancies in (8,0) and (8,8) Single-Walled Carbon and Boron Nitride Nanotubes", *Journal of Nanoscience and Nanotechnology*, vol. 12, no. 9, pp. 7030-7036.
60. Mashapa, M.G., Chetty, N. & Ray, S.S. 2012, "Defect Complexes in Carbon and Boron Nitride Nanotubes", *Journal of Nanoscience and Nanotechnology*, vol. 12, no. 9, pp. 7021-7029.
61. Mashapa, M.G., Chetty, N. & Ray, S.S. 2012, "First Principles Studies of Extrinsic and Intrinsic Defects in Boron Nitride Nanotubes", *Journal of Nanoscience and Nanotechnology*, vol. 12, no. 10, pp. 7807-7814.
62. Mashapa, M.G., Chetty, N. & Ray, S.S. 2012, "Vacancy Complexes in Carbon and Boron Nitride Nanotubes", *Journal of Nanoscience and Nanotechnology*, vol. 12, no. 10, pp. 7796-7806.
63. Masuku, M. & Rodrigues, J.P. 2012, "How universal is the Wigner distribution?", *Journal of Physics A-Mathematical and Theoretical*, vol. 45, no. 8, pp. 085201.
64. Messamah, I. 2012, "A universal behavior of half-BPS probes in the superstar ensemble", *Journal of High Energy Physics*, , no. 12, pp. 063.

65. Mwalaba, M., Sinayskiy, I. & Petruccione, F. 2012, "Dissipative Dynamics of a Spin less Electron Strongly Interacting with an Environment of Spin less Electrons", *Proceedings of Saip2012: the 57th Annual Conference of the South African Institute of Physics*, , pp. 586-590.
66. Nechita, I. & Pellegrini, C. 2012, "Random repeated quantum interactions and random invariant states", *Probability Theory and Related Fields*, vol. 152, no. 1-2, pp. 299-320.
67. Paskauskas, R. 2012, "Symmetries of a mean-field spin model", *Journal of Physics A-Mathematical and Theoretical*, vol. 45, no. 32, pp. 325002.
68. Paskauskas, R. & Kastner, M. 2012, "Equilibration in long-range quantum spin systems from a BBGKY perspective", *Journal of Statistical Mechanics-Theory and Experiment*, , pp. P02005.
69. Pillay, S., Mirza, A.R., Gibbon, T.B. & Petruccione, F. 2012, "Compensating Birefringence Effects in Optical Fibre for Polarisation Encoded QKD", *Proceedings of Saip2012: the 57th Annual Conference of the South African Institute of Physics*, , pp. 288-292.
70. Polyakov, D. 2012, "Progress in RNS string theory and pure spinors", *Foundations of Space and Time: Reflections on Quantum Gravity*, , pp. 125-139.
71. Reimann, P. & Kastner, M. 2012, "Equilibration of isolated macroscopic quantum systems", *New Journal of Physics*, vol. 14, pp. 043020.
72. Semin, V., Sinayskiy, I. & Petruccione, F. 2012, "Initial correlation in a system of a spin coupled to a spin bath through an intermediate spin", *Physical Review a*, vol. 86, no. 6, pp. 062114.
73. Semin, V., Sinayskiy, I. & Petruccione, F. 2012, "The role of the initial system-bath correlations in the dynamics of open quantum systems", *Proceedings of Saip2012: the 57th Annual Conference of the South African Institute of Physics*, , pp. 597-601.
74. Semonyo, M., Dlamini, S., Morrissey, M.J. & Petruccione, F. 2012, "A novel 2-D+ magneto-optical trap configuration for cold atoms", *Proceedings of Saip2012: the 57th Annual Conference of the South African Institute of Physics*, , pp. 293-298.
75. Senekane, M., Mirza, A., Mafu, M. & Petruccione, F. 2012, "Realization of B92 QKD protocol using id3100 Clavis(2) system", *Proceedings of Saip2012: the 57th Annual Conference of the South African Institute of Physics*, , pp. 299-304.
76. Sheikhan, A., Maass, P. & Tabar, M.R.R. 2012, "Coherent backscattering of electromagnetic waves in random media", *Epl*, vol. 98, no. 1, pp. 14005.

77. Sheikhan, A. & Snyman, I. 2012, "Fermi edge singularity and finite-frequency spectral features in a semi-infinite one-dimensional wire", *Physical Review B*, vol. 86, no. 8, pp. 085122.
78. Sinayskiy, I., Marais, A., Petruccione, F. & Ekert, A. 2012, "Decoherence-Assisted Transport in a Dimer System", *Physical Review Letters*, vol. 108, no. 2, pp. 020602.
79. Sinayskiy, I. & Petruccione, F. 2012, "Efficiency of Open Quantum Walk implementation of the Dissipative Quantum Computing", *Proceedings of Saip2012: the 57th Annual Conference of the South African Institute of Physics*, , pp. 614-617.
80. Sinayskiy, I. & Petruccione, F. 2012, "Properties of open quantum walks on Z", *Physica Scripta*, vol. T151, pp. 014077.
81. Sinha, D., Chakraborty, B. & Scholtz, F.G. 2012, "Non-commutative quantum mechanics in three dimensions and rotational symmetry", *Journal of Physics A-Mathematical and Theoretical*, vol. 45, no. 10, pp. 105308.
82. Snyman, I. & Nazarov, Y.V. 2012, "Polarons in Suspended Carbon Nanotubes", *Physical Review Letters*, vol. 108, no. 7, pp. 076805.
83. Tkalya, E.V., Avdeenkov, A.V., Bibikov, A.V., Bodrenko, I.V. & Nikolaev, A.V. 2012, "Electron capture beta decay of Be-7 located inside and outside the C-36 fullerene", *Physical Review C*, vol. 86, no. 1, pp. 014608.
84. Ukpong, A.M. & Chetty, N. 2012, "First principles molecular dynamics study of nitrogen vacancy complexes in boronitrene", *Journal of Physics-Condensed Matter*, vol. 24, no. 26, pp. 265002.
85. Ukpong, A.M. & Chetty, N. 2012, "Half-metallic ferromagnetism in substitutionally doped boronitrene", *Physical Review B*, vol. 86, no. 19, pp. 195409.
86. Zhang, F., Brink, J., Szilagyi, B. & Lovelace, G. 2012, "Geometrically motivated coordinate system for exploring spacetime dynamics in numerical-relativity simulations using a quasi-Kinnersley tetrad", *Physical Review D*, vol. 86, no. 8, pp. 084020.