

# Bibliography

- [1] T. Brixner and G. Gerber, "Femtosecond polarization pulse shaping", Opt. Lett. **26**, 557 (2001).
- [2] R. S. Judson and H. Rabitz, "Teaching lasers to control molecules", Phys. Rev. Lett. **68**, 1500 (1992).
- [3] C. J. Bardeen, V. V. Yakovlev, K. R. Wilson, S. D. Carpenter, P. M. Weber and W. S. Warren, "Feedback quantum control of molecular electronic population transfer", Chem. Phys. Lett. **280**, 151 (1997).
- [4] R. de Vivie-Riedle, K. Sundermann, "Design and interpretation of laser pulses for the control of quantum systems", Appl. Phys. B. **71**, 285 (2000); A. Apalategui, A. Saenz, and P. Lambropoulos, "Ab Initio Investigation of the Phase Lag in Coherent Control of  $H_2$ ", Phys. Rev. Lett. **86**, 5454 (2001).
- [5] S. Vajda, A. Bartelt, E. V. Kaposta, T. Leisner, C. Lupulescu, S. Minemoto, P. Rosendo-Francisco, and L. Wöste, "Feedback optimization of shaped femtosecond laser-pulses for controlling the wavepacket dynamics and reactivity of mixed alkaline clusters", Chem. Phys. **267**, 231 (2001).
- [6] T. Hornung, R. Meier, D. Zeidler, K. L. Kompa, D. Proch, M. Motzkus, "Optimal control of one-and two-photon transitions with shaped femtosecond pulses and feedback", Appl. Phys. B **71**, 277 (2000); T. Hornung, R. Meier, R. de Vivie-Riedle, M. Motzkus, "Coherent control of the molecular DFWM response with phase and amplitude shaped pulses", Chem. Phys. **267**, 261 (2001).
- [7] Y. Ohtsuki, W. Zhu and H. Rabitz, "Monotonically convergent algorithm for quantum optimal control with dissipation", J. Chem. Phys. **110**, 9825 (1999).

- [8] A. P. Peirce, M. A. Dahleh, and H. Rabitz, "Optimal control of quantum-mechanical systems: Existence, numerical approximation, and applications", Phys. Rev. A **37**, 4950 (1988).
- [9] L. E. E. de Araujo, I. A. Walmsley, and C. R. Stroud.Jr., "Analytic Solution for Strong-Field Quantum Control of Atomic Wave Packets", Phys. Rev. Lett. **81**, 955 (1998).
- [10] W. Zhu, J. Botina, and H. Rabitz, "Rapidly convergent iteration methods for quantum optimal control of population", J. Chem. Phys., **108**, 1953 (1998).
- [11] H. Rabitz, private communications.
- [12] B. E. Cole, J. B. Williams, B. T. King, M. S. Sherwin and C. R. Stanley, "Coherent Manipulation of Semiconductor Quantum Bits with Terahertz Radiation", Nature **410**, 60 (2001).
- [13] S. G. Schirmer, M. D. Girardeau, J. V. Leahy, "Efficient algorithm for optimal control of mixed-state quantum systems", Phys. Rev. A **61**, 012101 (2000).
- [14] A. McPherson, B.D. Thompson, A.B. Borisov, K. Boyer, and C.K. Rhodes, "4-5keV Xe(L) Multiphoton-Induced X-Ray Emission from Multiply Core-Excited Xe Atoms", Nature **370**, 631 (1994).
- [15] T. Ditmire, T. Donnelly, R. W. Falcone, and M. D. Perry, "Strong x-ray emission from high-temperature plasmas produced by intense irradiation of clusters", Phys Rev. Lett. **75**, 3122 (1995); T. Ditmire, J.W.G. Tisch, E. Springate, M.B. Mason, N. Hay, J.P. Marangos, R.A. Smith and M.H.R. Hutchinson, "High-Energy Ion Explosion of Superheated Atomic Clusters", Nature **386**, 54 (1997); T. Ditmire, J. Zweiback, V. P. Yanovsky, T. E. Cowan, G. Hays, and K. B. Wharton, "Nuclear fusion from explosions of femtosecond laser-heated deuterium clusters", Nature **398**, 489 (1999).
- [16] T. Ditmire, J. W. G. Tisch, E. Springate, M. B. Mason, N. Hay, J. P. Marangos, and M. H. R. Hutchinson, "High Energy Ion Explosion of Atomic Clusters: Transition from Molecular to Plasma Behavior", Phys. Rev. Lett. **78**, 2732 (1997).
- [17] M. Lezius, S. Dobosz, D. Normand, and M. Schmidt, "Explosion Dynamics of Rare Gas Clusters in Strong Laser Fields", Phys Rev. Lett. **80**, 261 (1998).

- [18] E. Springate, N. Hay, J.G. Tisch, M.B. Mason, T. Ditmire, M. H. R. Hutchinson and J. P. Marengos, "Explosion of atomic clusters irradiated by high-intensity laser pulses: Scaling of ion energies with cluster and laser parameters", Phys. Rev. A **61**, 063201 (2000).
- [19] E.M. Snyder, S.A. Buzzo, and A.W. Castleman, "Intense Field-Matter Interactions: Multiple Ionization of Clusters", Phys Rev. Lett. **77**, 3347 (1996).
- [20] D. Normand and M. Schmidt, "Multiple ionization of atomic and molecular iodine in strong laser fields", Phys. Rev. A **53**, R1958 (1996).
- [21] Y. L. Shao, T. Ditmire, J. W. G. Tisch, E. Springate, J. P. Marangos, and M. H. R. Hutchinson, "Multi-keV Electron Generation in the Interaction of Intense Laser Pulses with Xe Clusters", Phys. Rev. Lett. **77**, 3343 (1996).
- [22] L. Köller, M. Schumacher, J. Köhn, S. Teuber, J. Tiggesbäumer, and K. H. Meiwes-Broer, "Plasmon-Enhanced Multi-Ionization of Small Metal Clusters in Strong Femtosecond Laser Fields", Phys Rev. Lett. **82**, 3783 (1999).
- [23] T. Ditmire, E. Springate, J. W. G. Tisch, Y. L. Shao, M. B. Mason, N. Hay, J. P. Marangos, and M. H. R. Hutchinson, "Explosion of atomic clusters heated by high-intensity femtosecond laser pulses", Phys. Rev. A **57**, 369 (1998).
- [24] J. Zweiback, T. Ditmire and M.D. Perry, "Femtosecond time-resolved studies of the dynamics of noble-gas cluster explosions", Phys. Rev. A **59**, R3166 (1999).
- [25] G. Grillon, Ph. Balcou, J.- P. Chambaret, D. Hulin, J. Martino, S. Moustazis, L. Notebaert, M. Pittman, Th. Pussieux, A. Rousse, J- Ph. Rousseau, S. Sebban, O. Sublemontier, and M. Schmidt, "Deuterium-Deuterium Fusion Dynamics in Low-Density Molecular-Cluster Jets Irradiated by Intense Ultrafast Laser Pulses", Phys. Rev. Lett. **89**, 065005, (2002).
- [26] T. Ditmire, T. Donnelly, A. M. Rubenchik, R. W. Falcone, and M. D. Perry, "Interaction of intense laser pulses with atomic clusters", Phys. Rev. A **53**, 3379 (1996).
- [27] T. Donnelly, T. Ditmire, K. Neuman, M. D. Perry, and R. W. Falcone, "High-order harmonic generation in atom clusters", Phys Rev. Lett. **76**, 2472 (1996).

- [28] M. Brewczyk, C.W. Clark, M. Lewenstein, and K. Rzazewski, "Stepwise Explosion of Atomic Clusters Induced by a Strong Laser Field", Phys. Rev. Lett. **80**, 1857 (1998).
- [29] E. Suraud and P. G. Reinhard, "Impact of Ionic Motion on Ionization of Metal Clusters under Intense Laser Pulses", Phys Rev. Lett. **85**, 2296 (2000).
- [30] T. Ditmire, "Simulation of exploding clusters ionized by high-intensity femtosecond laser pulses", Phys. Rev. A **57**, R4094 (1998).
- [31] I. Last and J. Jortner, "Quasiresonance ionization of large multicharged clusters in a strong laser field", Phys. Rev. A **60**, 2215 (1999).
- [32] K. Ishikawa and T. Blenski, "Explosion dynamics of rare-gas clusters in an intense laser field", Phys Rev. A, **62**, 063204 (2000).
- [33] C. Siedschlag and J. M. Rost, "Small clusters in strong laser fields", AIP Conf. Proc. **576**, 999 (2001).
- [34] M. Rusek, H. Lagadec and T. Blenski, "Cluster explosion in an intense laser pulse: Thomas-Fermi model", Phys Rev. A, **63**, 013203 (2000).
- [35] K. Groom, A. I. Tartakovskii, D. J. Mowbray, M. S. Skolnick, P. M. Smowton, M. Hopkinson, and G. Hill, "Comparative study of InGaAs quantum dot lasers with different degrees of dot layer confinement", Appl. Phys. Lett. **81**, 1 (2002).
- [36] L. P. Kouwenhoven, T. H. Oosterkamp, M. W. S. Danoeastro, M. Eto, D. G. Austing, T. Honda, and S. Tarucha, "Excitation spectra of circular few-electron quantum dots", Science **278**, 1788 (1997).
- [37] J. R. Guest, T. H. Stievater, Gang Chen, E. A. Tabak, B. G. Orr, D. G. Steel, D. Gammon, and D. S. Katzer, "Near Field Coherent Spectroscopy and Microscopy of a Quantum Dot system", Science **293**, 2224 (2001).
- [38] N. A. Bruce and P. A. Maksym, "Quantum states of interacting electrons in a real quantum dot", Phys. Rev. B **61**, 4718 (2000).

- [39] J. Kainz, S. A. Mikhailov, A. Wensauer, and U. Roessler, "Quantum dots in high magnetic fields: Calculation of ground-state properties", Phys. Rev. B **65**, 115305 (2002).
- [40] F. Pederiva, C. J. Umrigar, and E. Lipparini, "Diffusion Monte Carlo study of circular quantum dots", Phys. Rev. B **62**, 8120 (2000).
- [41] T. F. Jiang, Xiao-Min Tong, and Shih-I Chu, "Self-interaction-free density-functional theoretical study of the electronic structure of spherical and vertical quantum dots", Phys. Rev. B **63**, 045317 (2001); M. A. Omari, M. A. Rawashdeh-Omari, C. C. Chusuei, J. P. Fackler, P. S. Bagus, "Electronic structure studies of six-atom gold clusters", J. Chem. Phys. **114**, 10695 (2001).
- [42] S. Hirata, S. Ivanov, I. Grabowski, R. J. Bartlett, "Time-dependent density functional theory employing optimized effective potentials", J. Chem. Phys. **116**, 6468 (2002).
- [43] C. H. Mak, R. Egger, and H. Weber-Gottschick, "Multi-level Blocking Approach to the Fermion Sign Problem in Path-Integral Monte Carlo Simulations", Phys. Rev. Lett. **81**, 4533 (1998).
- [44] M. Taut, "Two electrons in an external oscillator potential: Particular analytic solutions of a Coulomb correlation problem", Phys. Rev. B **48**, 3561 (1993).
- [45] R. S. Judson, M. E. Colvin, J. C. Meza, A. Huffer and D. Gutierrez, "Do intelligent configuration search techniques outperform random search for large molecules?", Int. J. Quantum Chem. **44**, 277 (1992).
- [46] D. M. Deaven and K. M. Ho, "Molecular geometry optimization with a genetic algorithm", Phys. Rev. Lett. **75**, 288 (1995).
- [47] K. Michaelian, "Evolving few-ion clusters of Na and Cl", Am. J. Phys. **66**, 231 (1998); K. Michaelian, "A symbiotic algorithm for finding the lowest energy isomers of large clusters and molecules", Chem. Phys. Lett. **293**, 202 (1998).
- [48] I. L. Garzon, K. Michaelian, M. R. Beltran, A. Posada-Amarillas, P. Ordejon, E. Artacho, D. Sanchez-Portal and J. M. Soler, "Lowest Energy Structures of Gold Nanoclusters", Phys. Rev. Lett. **81**, 1600 (1998).

- [49] N. H. Bonadeo, J. Erland, D. Gammon, D. Park, D. S. Katzer and D. G. Steel, "Coherent Optical Control of the Quantum State of a Single Quantum Dot", *Science* **282**, 1473 (1998); G. Chen, N. H. Bonadeo, D. G. Steel, D. Gammon, D. S. Katzer, D. Park and L. J. Sham, "Optically Induced Entanglement of Excitons in a Single Quantum Dot", *Science* **289**, 1906 (2000); D. Gammon, N. H. Bonadeo, G. Chen, J. Erland and D. G. Steel, "Optically probing and controlling single quantum dots", *Physica E* **9**, 99 (2001).
- [50] A. P. Heberle, J. J. Baumberg and K. Köhler, "Ultrafast coherent control and destruction of excitons in quantum wells", *Phys. Rev. Lett.* **75**, 2598 (1995); A. P. Heberle, J. J. Baumberg, T. Kuhn and K. Köhler, "Femtosecond pulse shaping for coherent carrier control", *Physica B* **272**, 360 (1999).
- [51] E. Dupont, P. B. Corkum, H. C. Liu, M. Buchanan and Z. R. Wasilewski, "Phase-controlled currents in semiconductors", *Phys. Rev. Lett.* **74**, 3596 (1995).
- [52] M. Grifoni, P. Hänggi, "Driven quantum tunneling", *Phys. Rep.* **304**, 232 (1998).
- [53] T. Hertel, E. Knoesel, M. Wolf, and G. Ertl, "Ultrafast electron dynamics at Cu(111): Response of an electron gas to optical excitation", *Phys. Rev. Lett.* **76**, 535 (1996).
- [54] T. H. Stoof and Y. V. Nazarov, "Time-dependent resonant tunneling via two discrete states", *Phys. Rev. B* **53**, 1050 (1996).
- [55] T. Ditmire, E. Springate, J. W. G. Tisch, Y. L. Shao, M. B. Mason, N. Hay, J. P. Marangos, and M. H. R. Hutchinson, "Explosion of atomic clusters heated by high-intensity femtosecond laser pulses", *Phys. Rev. A* **57**, 369 (1998); E. Springate, N. Hay, J. W. G. Tisch, M. B. Mason, T. Ditmire, M. H. R. Hutchinson, and J. P. Marangos, "Enhanced explosion of atomic clusters irradiated by a sequence of two high-intensity laser pulses", *Phys. Rev. A* **61**, 063201 (2000).
- [56] B. W. Shore, "The theory of coherent atomic excitation", John Wiley and Sons, (1989).
- [57] W. D. Oliver, F. Yamaguchi, and Y. Yamamoto, "Electron Entanglement via a Quantum Dot", *Phys. Rev. Lett.* **88**, 037901 (2002).

- [58] L. Ingber, B. Rosen, "Genetic algorithms and very fast simulated reannealing: A comparison", Mathematical and Computer Modelling **16**, 87 (1992).
- [59] R. V. V. Vidal, ed., "Applied simulated annealing", Lecture notes in economics and mathematical systems **396**, Springer-Verlag, Berlin, Heidelberg, New York (1993).
- [60] I. Last and J. Jortner, "Dynamics of the Coulomb explosion of large clusters in a strong laser field", Phys. Rev. A **62**, 013201 (2000).
- [61] R.E. Peierls, "On a Minimum Property of the Free Energy", Phys. Rev., **54**, 918 (1938).
- [62] Goldberg, David E. "Genetic Algorithms in search, optimization, and machine learning", Addison-Wesley, (1989).
- [63] M. M. Bogdan, A. M. Kosevich, G. A. Maugin, "Soliton complex dynamics in strongly dispersive medium", Wave Motion **34**, 1 (2001).
- [64] V. N. Staroverov and G. E. Scuseria, "Assessment of simple exchange-correlation energy functionals of the one-particle density matrix", J. Chem. Phys. **117**, 2489 (2002).
- [65] B. Militzer and E. L. Pollock, "Variational density matrix method for warm, condensed matter: Application to dense hydrogen", Phys. Rev. E **61**, 3470 (2000).
- [66] M. Grifoni, M. Winterstetter and U. Weiss, "Coherences and populations in the driven damped two-state system", Phys. Rev. E **56**, 334 (1997).
- [67] D. Kosloff and R. Kosloff, "A Fourier method solution for the time dependent Schrödinger equation: A study of the reaction  $H^+ + H_2, D^+ + HD$ ", J. Chem. Phys. **79**, 1823 (1983).
- [68] D. Kouri and D. Hoffmann, "Time-dependent integral equation approach to quantum dynamics of systems with time-dependent potentials", Chem. Phys. Lett., **186**, 91 (1991).
- [69] R.H. Bisseling, R. Kosloff, and J. Manz, "Dynamics of hyperspherical and local mode resonance decay studied by time dependent wave packet propagation", J. Chem. Phys. **83**, 993 (1985).

- [70] I. Grigorenko, M. E. Garcia, in preparation.
- [71] In order to integrate the boundary problem the Mathcad package was used.
- [72] L. Allen, J.H. Eberly, "Optical resonance and two-level atoms", A Wiley-Interscience Publication, (1975).
- [73] F. Vetter, I. Grigorenko, M.E. Garcia, to be published.
- [74] C. E. Creffield, W. Häusler, J. H. Jefferson and S. Sarkar, "Interacting electrons in polygonal quantum dots", Phys. Rev. B **59**, 10719 (1999).
- [75] N. Akman and M. Tomak, "The Wigner molecule in a 2D quantum dot", Physica E **4**, 277 (1999).
- [76] K. Yabana and G. Bertsch, "Application of the time-dependent local density approximation to optical activity", Phys. Rev. A **60**, 1271 (1999).
- [77] I. Grigorenko and M. E. Garcia, "An evolutionary algorithm to calculate the ground state of a quantum system", Physica A **284**, 131 (2000).
- [78] J. H. Holland, in *Adaptation in Natural and Artificial Systems*, University of Michigan, Ann Arbor, MI, (1975).
- [79] J. H. Holland and J. S. Reitman, in *Pattern-Directed Inference systems*, edited by D. A. Waterman and F. Hayes-Roth, Academic Press, NY (1978).
- [80] P. Sutton and S. Boyden, "Genetic algorithms: A general search procedure", Am. J. Phys. **62**, 549 (1994).
- [81] M. D. Feit, J. A. Fleck, Jr., and S. Steiger, "Solution of the Schrödinger equation by a spectral method", J. Comput. Phys. **47**, 412 (1982).
- [82] K. Jauregui, W. Häusler and B. Kramer, "Wigner Molecules in Nanostructures", Europhys. Lett. **24**, 581 (1993).
- [83] W. G. Bickley, "Formulae for numerical differentiation", Math. Gaz. **25**, 19 (1941).
- [84] E. Wigner, "On the Interaction of Electrons in Metals", Phys. Rev. **46**, 1002 (1934).

- [85] A. Puente and L. Serra, "Oscillation Modes of Two-Dimensional Nanostructures within the Time-Dependent Local-Spin-Density Approximation", Phys. Rev. Lett. **83**, 3266 (1999).
- [86] L. Serra, A. Puente and E. Lipparini, "Orbital current mode in elliptical quantum dots", Phys. Rev. B **60**, R13966 (1999).
- [87] C. Yannouleas and U. Landman, "Spontaneous Symmetry Breaking in Single and Molecular Quantum Dots", Phys. Rev. Lett. **82**, 5325 (1999).
- [88] B. Fornberg and D. Sloan, in *Acta Numerica 1994*, edited by A. Iserles (Cambridge University Press, Cambridge), 203 (1994).
- [89] A. Puente, private communication.
- [90] A.V. Filinov, M. Bonitz, and Yu. E. Lozovik, "Wigner crystallization in mesoscopic 2D electron systems", Phys. Rev. Lett. **86**, 3851 (2001).
- [91] V. Blanchet, M. A. Bouchene and B. Girard, "Temporal coherent control in the photoionization of  $Cs_2$ : Theory and experiment", J. Chem. Phys. **108**, 4862 (1998).
- [92] See, for example, *Mesoscopic Phenomena in Solids*, edited by B. L. Altshuler, P. A. Lee and R. Webb, Elsevier, Amsterdam, (1991).
- [93] R. Ashoori, "Electrons in artificial atoms", Nature **379**, 413 (1996).
- [94] R. H. Blick, R. J. Haug, J. Weis, D. Pfannkuche, K. v. Klitzing and K. Eberl, "Single-electron tunneling through a double quantum dot: The artificial molecule", Phys. Rev. B **53**, 7899 (1996).
- [95] C. A. Stafford and N. S. Wingreen, "Resonant photon-assisted tunneling through a double quantum dot: An electron pump from spatial Rabi oscillations", Phys. Rev. Lett. **76**, 1916 (1996).
- [96] O. Speer, M. E. Garcia and K. H. Bennemann, "Photon-assisted Stückelberg-like oscillations in a double quantum dot", Phys. Rev. B **62**, 2630 (2000).

- [97] I. Grigorenko and M. E. Garcia, "Two-Particle Systems Determined Using Quantum Genetic Algorithms", *Physica A* **291**, 439 (2001).
- [98] Y. B. Zeldovich, *Soviet Physics JETP* **24**, 1006 (1967).
- [99] P. K. Tien and J. P. Gordon, "Multiphoton Process Observed in the Interaction of Microwave Fields with the Tunneling between Superconductor Films", *Phys. Rev.* **129**, 647 (1963).
- [100] V. Ramakrishna, R. Ober, X. Sun, O. Steuernagel, J. Botina, and H. Rabitz, "Explicit generation of unitary transformations in a single atom or molecule", *Phys. Rev. A* **61**, 032106 (2000); L.H Haroutyunyan and G. Nienhuis, "Coherent control of atom dynamics in an optical lattice", *Phys. Rev. A* **64**, 033424 (2001).
- [101] C. Brif, H. Rabitz, S Wallentowitz, I.A. Walmsley, "Decoherence of molecular vibrational wave packets: Observable manifestations and control criteria", *Phys. Rev. A* **63**, 063404 (2001).
- [102] Y. Nakamura, Yu.A. Pashkin and J.S. Tsai, "Coherent control of macroscopic quantum states in a single-Cooper-pair box", *Nature* **398**, 786 (1999).
- [103] S. Poetting, M. Cramer, C. H. Schwallb, H. Pu, and P. Meystre, "Coherent acceleration of Bose-Einstein condensates", *Phys. Rev. A* **64**, 023604 (2001).
- [104] C. Search and P.R. Berman, "Suppression of Magnetic State Decoherence Using Ultrafast Optical Pulses", *Phys. Rev. Lett.* **85**, 2272 (2000).
- [105] Y. Ohtsuki, K. Nakagami, Y. Fujimura, W. Zhu, and H. Rabitz, "Quantum optimal control of multiple targets: Development of a monotonically convergent algorithm and application to intramolecular vibrational energy redistribution control", *J. Chem. Phys.* **114**, 8867 (2001).
- [106] Y. Ohtsuki, W. Zhu and H. Rabitz, "Monotonically convergent algorithm for quantum optimal control with dissipation", *J. Chem. Phys.* **110**, 9825 (1999).
- [107] M. E. Garcia, H. O. Jeschke, I. Grigorenko and K. H. Bennemann, "Theory for the ultrafast dynamics of excited clusters:

- interplay between elementary excitations and atomic structure”, *Appl. Phys. B* **71**, 361 (2000).
- [108] R. Bartels, S. Backus, E. Zeek, L. Misoguti, G. Vdovin, I. P. Christov, M. M. Murnane, H. C. Kapteyn, ”Shaped-pulse optimization of coherent emission of high-harmonic soft X-rays”, *Nature* **406**, 164 (2000).
- [109] D.M. Ceperley, ”Quantum Monte Carlo simulations, Microscopic simulations in physics”, *Rev. Mod. Phys.* **71**, 438 (1999).
- [110] M. Koskinen, M. Manninen, B. Mottelson et al., ”Configuration-interaction (CI) calculations”, *cond-mat/0004095* (2000).
- [111] A. K. Hartmann, ”Calculation of ground states of four-dimensional +/-J Ising spin glasses”, *Phys. Rev. E* **60**, 5135 (1999).
- [112] A. Fuhrer, S. Luscher, T. Ihn, T. Heinzel, K. Ensslin, W. Wegscheider and M. Bichler, ”Energy spectra of quantum rings”, *Nature* **413**, 822 (2001).
- [113] F. Luczak, F. Brosens, and J.T. Devrees, L.F. Lemmens, ”Many-body diffusion algorithm: Harmonic fermions”, *Phys. Rev. E* **57**, 2411 (1998).
- [114] Y. Makhlin, G. Schoen, and A. Shnirman, ”Quantum-state engineering with Josephson-junction devices”, *Rev. Mod. Phys.* **73**, 357 (2001).
- [115] T. H. Oosterkamp, T. Fujisawa, W. G. van der Wiel, K. Ishibashi, R. V. Hijman, S. Tarucha and L. P. Kouwenhoven, ”Microwave spectroscopy of a quantum-dot molecule”, *Nature* **395**, 874 (1998).
- [116] A. Bulatov, B. E. Vugmeister, and H. Rabitz, ”Nonadiabatic control of Bose-Einstein condensation in optical traps”, *Phys. Rev. A* **60**, 4875 (1999).
- [117] J. R. Koza, ”Genetic programming”, A Bradford Book, The MIT Press, (1992).
- [118] V.M. Akulin, N.V. Karlov, ”Intence Resonant Interactions in Quantum Electronics”, Springer-Verlag, (1992).

- [119] K. Burrage and P. M. Burrage “High Strong Order Methods for Non-commutative Stochastic Ordinary Differential Equation Systems and the Magnus Formula”, Conference on Uncertainty, Physica D, (1998).