Marek Żukowski

Contents

CURRICULUM VITAE AND PUBLICATION LIST

(born 11.12.1952, married, one grown-up child)

I. CURRENT PERMANENT ADDRESS

Institute of Theoretical Physics and Astrophysics, University of Gdansk , ul. Wita Stwosza 57, PL-80-952 Gdansk, Poland, tel. ++48-58-5232219 (or 3418700, or home 6248298), fax. ++48-58-3413175 (or 6248579), cellular: +48-506456064; e-mail address: marek.zukowski@univie.ac.at (also fizmz@univ.gda.pl), skype: marek.zukowski; home page: http://iftia9.univ.gda.pl/˜marek/

II. PROFESSIONAL CAREER

A. Education

- Primary school 1959-1967 (School No. 8, Gdynia)
- Secondary school ("Liceum" No 3, Gdynia,1967-1971) with English as the language of all science related classes.
- 1971-1976: studies in the Physics Faculty of the University of Gdansk. Magister (equivalent of M.Sc.), with honors, physics, University of Gdansk (1971-1976). Graduation: 12th June 1976. 1972-1977: studies in the mathematics faculty of the University of Gdansk.
- Ph.D. (thesis awarded by the Ministry of Education and Science), presented 27th Jan.1983; supervisor prof. Jan Fiutak.
- Examination: Proficiency Certificate in English (Cambridge), Gdansk June 1983: grade A.
- 20.12.1995, Doctor Habilitatus degree (University of Nicolaus Copernicus, Torun, Poland)
- 11-th April 2003, the title of Professor of Physics (received from the President of the Republic of Poland)

B. Positions (permanent)

- Employed in the Institute of Physics of the University of Gdansk (13th Oct. 1976) as an 'assistant'.
- From 1st March 1983 - 'adiunkt' (senior assistant)
- 01.09.1996-31.08.2005 Head of the Quantum Optics Division of the Institute of Theoretical Physics and Astrophysics of the University of Gdansk
- 01.05.1998 - 01.03.2006 extraordinary professorship in theoretical physics at the University of Gdansk (UG).
- from 1.09.2005 Director of Institute of Theoretical Physics and Astrophysics (UG). [The Institute has four "titular" profesors Alicki, Horodecki, Majewski, Zukowski]
- From 01.03.2006 ordinary (full) professorship in theoretical physics at the University of Gdansk (UG).
- National Centre for Quantum Informatics of Gdansk (created 28.06.2007), a member of the initiating group.

C. Awards, etc.

- 1983, 1994, 2000, 2007: The Individual Award of the (Polish) Ministry of Education for Scientific Research. [also prizes of the Rector of the University of Gdansk, 1993, 1998, 2005]
- Batory Foundation Stipend, 1988.
- 2001 appointed as a member of the Scientific Board of the Central Laboratory of Atomic, Optical and Molecular Physics (FAMO Lab, Torun)

- from 2002 editor: International Journal of Quantum Information (WSc).
- 20-th May 2003, awarded Professorial Subsidy (2003-2006) of the Foundation for Polish Science (FNP), the second highest prize of the Foundation.
- from 17.09.2005 Chair Professor, Tsinghua University, Beijing, China (honorary position, 2005-2008).
- Wenner Gren Stipend for a visiting researcher (Stockholm, Dec. 2005).
- Distinguished Visiting Professor, Chinese Academy of Sciences (2010-2013).

D. Organization of conferences

- Organizer of conferences, and editor of books:
  - "Problems in Quantum Physics; Gdansk '87",
  - "Problems in Quantum Physics; Gdansk '89",
  - "18th International School of Quantum Optics and Spectroscopy; Gdansk-Sobieszewo 1990"
  - co-organized of "Quantum Physics of Nature" Vienna, 2005.
  - Chair of the Prog. Com. NATO Workshop Quantum Communication and Security (Gdansk, Sept. 2006)

III. COLLABORATION WITH LEADING AUSTRIAN AND INTERNATIONAL INSTITUTIONS

A. Academic visits

- University of Innsbruck
  - Gastprofessor, full academic year 1991-1992.
  - Gastprofessor, four months, summer semester 1993.
  - Gastprofessor, 1 month, 1994.
  - Gastprofessor, 1 month, 1995.
  - Gastprofessor and guest researcher (OeAD) - altogether 7 weeks, 1996.
  - Gastprofessor and guest researcher (OeAD)- altogether 5 weeks, 1997.
  - Gastprofessor and guest researcher (OeAD)- altogether over two months, 1998.
  - Guest researcher - 10 days, 1999.
- University of Vienna
  - guest researcher, altogether (OeAD) 25 days, 1999.
  - guest researcher, altogether (OeAD) 30 days, 2000.
  - Gastprofessor, 1 month, 2001.
  - Several two week visits in 2002, teaching appointment June 2002 (block lecture course).
  - Several short visits, 2003.
  - Universitätsprofessor (two months, May-June, 2004), and some short visits.
  - Universitätsprofessor, full winter semester, 2005-2006, and some short visits. [Institut für Experimentalphysik, Universitätsprofessor (in Theory of Quantum Optics and Quantum Information, 3.10.2005-31.01.2006].
  - Universitätsprofessor, winter semester, 2010-2011. [Institut für Experimentalphysik].
- National University of Singapore
  - Two visits, altogether almost eight weeks, 2003.
  - Visiting Research Fellow, three months, November 2004 - February 2005.

- Other visits at foreign institutions:
  - 1988 Oxford, Wadham College, Clarendon Lab (Batory Foundation - 1 month).
  - 1990/91: University-GHS Essen (research program 237, inv. prof. F. Haake, two months).
  - 2000 Invited to the Schroedinger Institute for Mathematical Physics (Vienna) (autumn, 2000),
  - Tsinghua University, Beijing (4 weeks, Sept 2005).
  - Shorter visits: 1984 Univ. of Palermo (prof. Ferrante); 1989 Inst. H. Poincare (Paris); 1992, 1993 and 1994 (twice) University of Santander (inv. prof. E. Santos); 1995 Humboldt Univ. Berlin (prof. Paul). 1997-98 several visits at VUB and University of Antwerp, Technical University of Munich, 10 days, 2000, 2003, 2005; three weeks at GAP (University of Geneva, invitation prof. Gisin) 2000.
  - University of Stockholm, Wenner Gren Stipendist, June-Dec. 2006.

B. Official international scientific collaboration programs

- with Austria
  - Altogether 7 Programs (which were included into official bilateral governmental scientific collaboration agreements) *Quantum Communication and quantum Information I-VI* (1996-7), (1998-9) (2000-1) (2002-3) (2004-5) [coordinators: Zeilinger and Zukowski]. The 6-th and 7-th program (2006-2007) (2008-2009) coordinated by Brukner and Zukowski.
- with Germany
  - 4 Programs (which were included into official bilateral governmental scientific collaboration agreements) *Novel entangled states for quantum information processing I - II* (2003-4) (2005-6) (2007-2009) (2009-2010) [coordinators: Weinfurter and Zukowski]
- within EU (6-th and 7-th Framework Program)
  - *Qubit applications* (QAP), integrated program (consortium member), responsible for WP3.1 Quantum channels (workpackage leader: Marek Zukowski, UG). Objectives Decoherence and loss mechanisms in various quantum channels; Link optimization and automation technology; Coupling of entangled sources to long-distance transmission links.). Beginning of the project: Nov. 2005.
  - *Scalable Quantum Computing with Light and Atoms* (SCALA), integrated program: responsible for Task 3.3.8 (Gdansk, Zukowski). Objectives: Finding new photonic states and analysis of their feasibility for quantum processing tasks. Nov. 2005- May 2010.
  - *Q-ESSENCE, consortium member, local coordinator, beginning Feb 2010, end March 2013*

IV. GRANTS FROM POLISH INSTITUTIONS

- Series of Univesity of Gdansk Grants 1996-2002.
- Governmental Institutions
  - KBN 2 P03B 096 15, Badanie Nieklasycznych Zjawisk Metodami Interferometrii Kwantowej [Research of Nonclassical Phenomena with Quantum Interferomeric Methods](1998-2000), main coordinator
  - KBN 5 P03B 088 20 Interferencja Wielofotonowa i Komunkacja Kwantowa [Multiphoton interference and quantum Communication](2001-2003), main coordinator (final score: excellent)
  - PBZ KBN 043//P03//2001 (solicited grant, KL FAMO) Nowoczesne metody fizyki zimnej materii i inynierii kwantowej [Modern methods of physics of cold matter and quantum engineering] (main researcher)
  - PBZ-MIN-008//P03//2003 (solicited, Laboratorium Fizycznych Podstaw Przetwarzania Informacji), (workpackage leader).
  - MNiI 1 P03B 04927, Kwantowe Splatanie [Quantum Entanglement](2004-2006), main coordinator

  - MNiSW (N N202 208538 - provisional number) Grant (2010-2013), Optymalizacja zasobw kwantowych w przetwarzaniu informacji recently approved (Optimal quantum resources for information processing), main coordinator.

- International Doctoral Programme (2010-2014), Physics of future quantum-based information technologies, member (details: http://iftia9.univ.gda.pl/ MPD/index.html)

- Foundation for Polish Science

  - Grant-award Professorial Subsidy, No. 15 (2003-2006, Sciences).

V. PREVIOUS TEACHING ACTIVITIES

A. Past course lectures

1. Quantum Mechanics (3-rd year of physics studies, UG).
2. Classical Electrodynamics (3-rd year, UG).
3. Classical Field Theory (4-th year, UG).
4. Quantum Field Theory (4-th year, UG).
5. Classical Mechanics (2-nd year, UG).

B. Monographic lectures

6. Quantum Interferometry (I and II) - (4/5 year, Ph. D. studies, UG).
7. Foundations of Quantum Theory for Teachers (5-th year, UG)
8. Physics of Quantum Information (4/5 year, Ph. D. studies, UG).

C. Lecture courses at Austrian Universities

9. Quantum Optics - (Universität Innsbruck, full academic year 1991//1992, 4 hours per week).
10. Quantum Correlations - (Universität Innsbruck, summer semester, 1993, 4 hours per week).
11. short series of lectures (monthly of biweekly series, Universität Innsbruck, 1994-98, and Universität Wien, 2001,2002, 2004, on Quantum interferometry, Entangled States, Physics of Quantum Information, etc.
12. Introduction to Quantum Information (Tsinghua University, September 2005)
13. Advanced Quantum Information (Universität Wien, winter semester 2005/6).

D. Other teaching/supervision experience

Supervisor of M Sc. theses:

1. M. Juśkiewicz, O relacji miedzy hamiltonianem minimalnego sprzezenia a hamiltonianem rozwiniecia multipolowego [On relation between minimal coupling and multipolar Hamiltionians] (Uniwersytet Gdański, 1988).

2. K. Górny, Doświadczalne testy nierównosci Bella [Experimental tests of Bell inequalities] (Uniwersytet Gdański, 1989).

3. D. Kaszlikowski, Testy lokalnego realizmu za pomoca interferometrii kwantowej. Poszukiwanie nowych nierówności Bella [Quantum interferometric tests of local realism. Search for new Bell inequalities] (UG, 1996)

4. A. Baturo, Numeryczne twierdzenie Bella [Numerical Bell Theorem] (UG, 1999)

5. M. Maćko, Kwantowa Teleportacja [Quantum Teleportation] (didactic work, UG, 2001)

6. M. Szczyglo, Lamanie nierówności Bella nowego typu przez pary kubitów [Violations of new type Bell inequalities by pairs of qubits] (UG, 2003)

7. M. Wieśniak, Pewne w lasnści stanów wielu kubitów [Some properties of multiqubit states] (UG, 2003)

8. D. Gutowska, Kwantowa Kryptografia i kwantowa teleportacja [Quantum cryptography and quantum teleportation] (didactic work, UG, 2002)

9. K. Langner, Czy mechanika kwantowa pozwala na przesyłanie informacji z predkościa szybsza niż światło? [Does quantum mechanics allow for faster than light communication?] (didactic work, UG, 2002)

10. J. Gruca (2008)

11. M. Markiewicz (2009)

informal co-supervision:
10. Clemens Ulrich: Mehrstrahlinterferometer und Spin-Drehimpuls (TUV, Wien, 1992) (supervisor prof. A. Zeilinger).

Supervisor of Ph. D. Theses

1. dr Dagomir Kaszlikowski (awarded Ph. D. 2000)
2. dr Aditi Sen(De) (2003)
3. dr Tomasz Paterek (2007),
4. Wieslaw Laskowski (2007)
5. Marcin Wieśniak (2007)
6. Marcin Pawlowski (2010)
7. "Promotor" for Doctor Honoris Causa Degree of UG for Anton Zelinger (12.10.2006).
8. currently supervising: Marcin Markiewicz, Mohamed Navareg, Arijit Dutta.

VI. SCIENTIFIC CONFERENCES

A. Advisory/Program Committee Member

1. Quantum Computation and Information 2001, Singapore (2-6.04.2001)
2. Wigner Centennial Conference, Pecs (8-12.2001).
3. 2^{nd} Asia - Pacific Workshop on Quantum Information Science, 15-19.12.2003, Singapore
4. 3^{rd} Asia - Pacific Workshop on Quantum Information Science, 03-14.01.2005, Singapore
5. NATO Advanced Research Workshop: "Quantum Communication and Security" (Gdańsk, 3-6.09.2006), Chair of the Program Com.
6. several conferences in 2007-2009

Invited or plenary speaker at many international conferences.

VII. LIST OF PUBLICATIONS (CITED ABOVE 2800 TIMES, H INDEX = 26 - DATA ISI-THOMSON WEB OF SCIENCE)

in periodicals

1. J. Fiutak, M. Zukowski, On the Path-dependent Electrodynamics of a System of Atoms (1978) , Acta Physica Polonica A54, 533;
2. J. Fiutak, M. Zukowski, The Path-dependent Electrodynamics of Systems of Bound Charges: Lagrangian Formulation and Canonical Relations (1981), Journal of Physics A: Mathematical and General 14, 3229;
3. M. Zukowski, On the Scattering Matrix Elements in Non-relativistic Quantum Electrodynamics (1982), Physics Letters A 90, 169;
4. M. Zukowski, The Path-dependent Electrodynamics of Bound Charges: QED of Spinors in an External Coulomb Field (1985), Journal of Physics A: Mathematical and General 18, 377;
5. M. Zukowski, On the Path-dependent Polarisation Tensor (1985), Journal of Physics A: Mathematical and General 18, 437;
6. C. Leone, P. Cavaliere, G. Ferrante and M. Zukowski, Gauge Aspects of Scattering Theory in the Presence of Lasers (1985), Journal of Physics B: Atomic and Molecular Physics 18, 4295;
7. M. Zukowski, J. Pykacz, Bell 's Theorem: Proposition of Realizable Experiment Using Linear Momenta (1988), Phys.Lett.A 127 1;
8. M. Zukowski, License to Slang Copenhagen - Revoked (1988), Nature 336 430;
9. M. Zukowski, On Bell's Inequalities for Quantum Optics (1989), Phys. Lett. A 134 351;
10. M. Zukowski, J. Pykacz and A. Posiewnik On Double Slit Experiment with One Slit Open at a Time (1989), Phys. Lett. A 135 411;
11. M. Zukowski, Study of Basic Interaction Hamiltonians for Quantum Optics via Exactly Solvable Model (1989), Quantum Optics 1, 117
12. M. Zukowski, Two Particle Spatial Quantum Beats: Feasible Test of Bell's Inequalities (1990), Phys. Lett. A 150 136;
13. M. Zukowski and A. Zeilinger, Test of Bell's Inequality Based on Phase and Linear Momentum as Well as Spin (1991), Phys. Lett A. 155 69;
14. M. Zukowski, GHZ Correlations in Quadrature Phase Measurements (1991), Phys. Lett. A 157 203;
15. M. Zukowski, Definite Values for Observables vs Quantum Predictions: a "GHZ-like" test (1991), Phys. Lett. A 157 198;
16. F. Haake and M. Zukowski, Classical Motion of Meter Observables In Quantum Theory of Measurement, Phys.Rev.A 47 2506 (1993)
17. M. Zukowski, "On the Existence of Empty Waves in Quantum Theory" - a Comment, Phys. Lett. A 175 257 (1993)
18. M. Zukowski, Bell Theorem Involving all Settings of Measuring Apparatus, Phys. Lett . A 177 290 (1993).
19. M. Zukowski, A. Zeilinger, M. A. Horne, A.K. Ekert, "Event Ready Detectors" Bell Experiment via Entanglement Swapping, Phys. Rev. Lett . 71 4297 (1993).
20. M. Zukowski, Entanglement and Photons, Laser Phys., 4, 690 (1994).
21. M. Zukowski, A. Zeilinger and H. Weinfurter, Entangling Independent Pulsed Photon Sources, Ann. N. Y. Acad. Sci. (1995) 755, 91;
22. C. Mattle, M. Michler , H. Weinfurter, A. Zeilinger , and M. Zukowski, Nonclassical statistics at Multiport Beamsplitters, Appl. Phys. B (1995) B 60, S111;

23. H. Weinfurter, T. Herzog, P.G. Kwiat, J.G. Rarity, A. Zeilinger and M. Zukowski Frustrated downconversion: virtual or real photons? Ann. N. Y. Acad. Sci. (1995) 755, 61.

24. M. Zukowski, A. Zeilinger and M.A. Horne, Realizable higher-dimensional two-particle entanglements via multiport beam splitters, Phys. Rev. A 55, 2464 (1997).

25. A. Zeilinger, M.A. Horne, H. Weinfurter and M. Zukowski, Three particle "GHZ" entanglements from two entangled pairs, Phys. Rev. Lett . 78, 3031 (1997).

26. M. Zukowski and D. Kaszlikowski, Critical visibility for N-particle Greenberger-Horne-Zeilinger correlations to violate local realism, Phys. Rev. A 56, R1685 (1997).

27. S. Popescu, L. Hardy and M. Zukowski, Revisiting Bell's theorem for a certain class of down conversion experiments, Phys. Rev. A 56, R4353 (1997).

28. M.Zukowski, A. Zeilinger , M.A. Horne and H. Weinfurter, Quest for GHZ states, Acta Phys. Pol . 93, 187 (1998).

29. M. Zukowski, R. Horodecki, M. Horodecki and P. Horodecki, Generalized Quantum Measurements and Local Realism, Phys. Rev. A 58, 1694 (1998)

30. D. Bouwmeester, K. Mattle, J.-W. Pan, H. Weinfurter, A. Zeilinger and M.Zukowski, Experimental quantum teleportation of arbitrary quantum states, Appl . Phys. B, 67, 749-752 (1998)

31. D. Bouwmeester, J.-W. Pan, M. Daniell, H. Weinfurter, M. Zukowski and A. Zeilinger, A Posteriori Teleportation - Bouwmeester et al. reply, Nature 394, 841 (1998).

32. M. Zukowski, A. Zeilinger, M.A. Horne and H. Weinfurter , Independent Photons and Entanglement. A Short Overview, Int. J. Theor. Phys. 38, 501 (1999).

33. M. Zukowski and D. Kaszlikowski, Greenberger-Horne-Zeilinger paradoxes for multiport beamsplitters, Phys. Rev. A 59, 3200 (1999).

34. M. Zukowski, D. Kaszlikowski, Entanglement swapping with PDC sources, Acta Phys. Slov. 49, 621 (1999).

35. M. Zukowski, D. Kaszlikowski and E. Santos, Irrelevance of photon events distinguishability in a class of Bell experiments, Phys. Rev. A 60, R2614 (1999).

36. S. Aerts, P. Kwiat, J.-A. Larsson and M. Zukowski, Two-photon Franson-type experiments and local realism, Phys. Rev. Lett. bf 83, 2872 (1999).

37. M. Zukowski, Violations of Local Realism in Multiphoton Interference Experiments, Phys. Rev. A 61, 022109 (2000).

38. D. Kaszlikowski, M. Zukowski, Bell theorem involving all possible local measurements, Phys. Rev. A 61, 022114 (2000).

39. M. Michler, H. Weinfurter and M. Zukowski, Experiments towards falsification of noncontextual hidden variables, Phys. Rev. Lett. 84, 5457 (2000).

40. M. Zukowski, Bell theorem for the nonclassical part of the teleportation process, Phys. Rev. A 62 032101 (2000).

41. C. Simon, M. Zukowski, H. Weinfurter, A. Zeilinger, A feasible " Kochen-Specker" experiment with single particles, Phys. Rev. Lett. 85, 1783 (2000).

42. M. Zukowski and D. Kaszlikowski, Fortschr. Phys. 48, 489 (2000).

43. D. Kaszlikowski, P. Gnacinski, M. Zukowski, W. Miklaszewski, A. Zeilinger, Violations of local realism by two entangled quNits are stronger than for two qubits , Phys. Rev. Lett 85, 4418 (2000)

44. A. Pati, M. Zukowski, Coherence Swapping, Pramana 56, 1 (2001).

45. S. Aerts, P. Kwiat, J.-A. Larsson and M. Zukowski, Aerts et al reply, Phys. Rev. Lett. **86**, 1909 (2001).

46. H. Weinfurter, M. Zukowski, Four-photon entanglement from down-conversion, Phys. Rev. A, .Phys. Rev. A (Rapid Com.) 64, 010102 (2001)

47. T. Durt, D. Kaszlikowski, M. Zukowski , Violations of local realism with quantum system described by N-dimensional Hilbert spaces up to N=16, Phys. Rev. A 64, 024101 (2001).

48. Chen,Jing -Ling, Kaszlikowski,Dagomir, Kwek,L.C., Zukowski,Marek, Oh,C.H, Entangled qutrits violate local realism more strongly than qubits: An analytical proof , Phys. Rev. A 64, 052109 (2001)

49. Dagomir Kaszlikowski , L. C. Kwek, Jing -Ling Chen, Marek Zukowski , C. H. Oh, Clauser-Horne inequality for qutrits, Phys. Rev. A 65, 032118 (2002)

50. Dagomir Kaszlikowski , Marek Zukowski, Piotr Gnacinski, A note on bound entanglement and local realism, Phys. Rev. A 65, 032107 (2002)

51. **Marek Zukowski and Caslav Brukner, Bell's Theorem for General N-Qubit States, Phys. Rev. Lett. 88, 210401 (2002)

52. Marek Zukowski , Caslav Brukner, Wiesaw Laskowski, and Marcin Wiesniak , Do All Pure Entangled States Violate Bell's Inequalities for Correlation Functions?, Phys. Rev. Lett. 88, 210402 (2002)

53. Caslav Brukner, Marek Zukowski , and Anton Zeilinger, Quantum Communication Complexity Protocol with Two Entangled Qutrits , Phys. Rev. Lett. 89, 197901 (2002)

54. Dagomir Kaszlikowski and Marek Zukowski, Greenberger-Horne-Zeilinger paradoxes for N N-dimensional systems, Phys. Rev. A 66, 042107 (2002)

55. Dagomir Kaszlikowski , Darwin Gosal, E. J. Ling, L. C. Kwek, Marek Zukowski, and C. H. Oh, Three-qutrit correlations violate local realism more strongly than those of three qubits , Phys. Rev. A 66, 032103 (2002)

56. R. D. Gill, G. Weihs, A. Zeilinger, and M. Zukowski, No time loophole in Bell's theorem: The Hess- Philipp model is nonlocal, Proc. Nat. Acad. Sci. 99,14632 -14635 (2002)

57. Aditi Sen (De), Ujjwal Sen, and Marek Zukowski , Functional Bell inequalities can serve as a stronger entanglement witness than conventional Bell inequalities, Phys. Rev. A 66, 062318 (2002)

58. M. Zukowski, Remarks on entanglement, its sources and applications, Acta Physica Polonica A, 101, 21 (2002)

59. R. D. Gill, G. Weihs, A. Zeilinger and M. Zukowski, Comment on "Exclusion of time in the theorem of Bell ", Europhys. Lett. 61, 282(2003).

60. Thomas Durt, Nicolas J. Cerf, Nicolas Gisin, and Marek Zukowski, Security of quantum key distribution with entangled qutrits, Phys. Rev. A 67, 012311(2003)

61. Marek Zukowski , Some news about Bell inequalities, J. Mod. Opt. 50, 1051 (2003).

62. Nikolai Kiesel, Mohamed Bourennane, Christian Kurtsiefer, Harald Weinfurter, D. Kaszlikowski, W. Laskowski, and Marek Zukowski , Three photon W state, J. Mod. Opt. 50. 1031 (2003).

63. Marek Zukowski and Caslav Brukner, Bell's theorem for N qubits, Fortschritte der Physik 51, 531 (2003)

64. M. Bourenname, M. Eibl, S. Gaertner, N. Kiesel, Ch. Kurtsiefer, M. Zukowski, H. Weinfurter, Multiphoton Entanglement and Interferometry , Fortsch. Phys. 51, 273 (2003).

65. M. Eibl, S. Gaertner, M. Bourennane, Ch. Kurtsiefer , M. Zukowski, H. Weinfurter , Experimental Observation of four-photon entanglement from down conversion, Phys. Rev. Lett. 90, 200403 (2003).

66. Dagomir Kaszlikowski, L. C. Kwek, Marek Zukowski, Berthold-Georg Englert, Information theoretic approach to single-particle and two-particle interference in multi-path interferometers, Phys. Rev. Lett. 91, 037901 (2003)

67. Aditi Sen (De), Ujjwal Sen, and Marek Zukowski , Unified criterion for security of secret sharing in terms of violation of Bell inequalities, Phys. Rev. A 68, 032309 (2003)

68. D. Kaszlikowski, M. Zukowski, Three qubit GHZ correlations and generalized Bell experiments, Int. J. Theor. Phys. 42, 1023 (2003)

69. Aditi Sen De, Ujjwal Sen, Marek Zukowski, Output state in multiple entanglement swapping, Phys. Rev. A. 68, 062301 (2003)

70. Zhi Zhao, Tao Yang, Yu- Ao Chen, An-Ning Zhang, Marek Zukowski, Jian-Wei Pan, Experimental Violation of Local Realism by Four-Photon Greenberger-Horne- Zeilinger Entanglement, Phys. Rev. Lett . 91, 180401 (2003)

71. Marek Zukowski, Entanglement and Bell Theorem, 32 years later, Acta Physica Hungarica 20, 43 (2004)

72. Aditi Sen De, Ujjwal Sen, Marcin Wiesniak, Dagomir Kaszlikowski, Marek Zukowski, Multiqubit W states lead to stronger nonclassicality than Greenberger-Horne-Zeilinger states, Phys .Rev. A 68, 062306 (2003)

73. T. Paterek, C. Brukner , M. Zukowski, Quantum Communication Complexity, Int. J. Quant. Inf. 1, 519 (2003)

74. C. Brukner, M. Zukowski, J.-W. Pan, A. Zeilinger, Bell's theorem as a criterion in quantum communication complexity, Phys. Rev. Lett . 92, 127901 (2004)

75. A. Acin, J.L. Chen, N. Gisin, L.C. Kwek, M. Zukowski, C.H. Oh, Coincidence Bell inequality for three three-dimensional systems, Phys. Rev. Lett. 92, 250404 (2004).

76. Darwin Gosal, Dagomir Kaszlikowski, L.C. Kwek , M. Zukowski, C.H. Oh, Asymmetric multipartite Greenberger-Horne-Zeilinger states and Bell inequalities,Phys. Rev. A, 042106 (2004).

77. W. Laskowski, T. Paterek, M. Zukowski, C. Brukner, Tight multipartite Bell inequalities involving many measurement settings, Phys. Rev. Lett. 93, 200401 (2004)

78. K. Nagata, W. Laskowski , M. Wiesniak, M. Zukowski, Rotational invariance as an additional constraint on local realism, Phys. Rev. Lett. 93, 230403 (2004).

79. Jing-Ling Chen, ,Chun-Feng Wu, L. C. Kwek, D. Kaszlikowski, M. Zukowski, C.H. Oh, Multicomponent Bell inequality and its violation for continuous-variable systems, Phys. Rev. A 71, 032107 (2005).

80. Aditi Sen(De), Ujjwal Sen, Caslav Brukner, Vladimir Buzek, and Marek Zukowski, Entanglement swapping of noisy states: A kind of superadditivity in nonclassicality, Phys. Rev. A **72**, 042310 (2005).

81. M. Zukowski, On the paradoxical book of Bell, Stud. Hist. Phil. Mod. Phys, 36, 566 (2005).

82. Christian Schmid, Pavel Trojek, Harald Weinfurter, Mohamed Bourennane, Marek Zukowski, Christian Kurtsiefer, Experimental Single Qubit Secret Sharing, Phys. Rev. Lett. 95, 230505 (2005)

83. Tao Yang, Qiang Zhang, Jun Zhang, Juan Yin, Zhi Zhao, Marek Zukowski, Zeng-Bing Chen, Jian-Wei Pan, All-Versus-Nothing Violation of Local Realism by Two-Photon, Four-Dimensional Entanglement, Phys. Rev. Lett. 95, 240406 (2005)

84. Pavel Trojek, Christian Schmid, Mohamed Bourennane, Caslav Brukner, Marek Zukowski, Harald Weinfurter, Experimental quantum communication complexity, Phys. Rev. A 72, 050305 (2005).

85. W. Laskowski, M. Zukowski, Detection of N-particle entanglement with generalized Bell inequalities, Phys. Rev. A 72, 062112 (2005).

86. T. Paterek, W. Laskowski, M. ukowski, On Series of Multiqubit Bell Inequalities, Mod. Phys. Lett. A 21, 111 (2006)

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