

Name: **Lev VAIDMAN**

Date & Place of Birth: 4 Sept 1955, Leningrad, Russia

Date of arrival to Israel: 24 Sept 1973

Israeli Military Service: 10.12.77 – 10.03.80, officer of the IDF

Marital Status: Married, 2 children

A. Education

1972-1973	Leningrad University	Physics	
1973-1974	Ben-Gurion University	Physics	
1974-1976	Hebrew University	Physics & Mathematics	B.Sc. 1976
1980-1982	Weizmann Institute	Physics	M.Sc. 1982
1982-1987	Tel-Aviv University	Physics	Ph.D. 1987

Title of Master's thesis: Nonperturbative Sum Rules in Quantum Chromo-Dynamics

Name of Supervisor: Prof. Hector Rubinstein

Title of Doctoral Dissertation: The Problem of Measurement in Relativistic Quantum Theory

Name of Supervisor: Prof. Yakir Aharonov

B. Academic and professional experience

2005 - present	U. of Tel-Aviv	Full Professor
1998-2005	U. of Tel-Aviv	Associate Professor
2000-2001	Centre for Quantum Comp., Oxford U-ty	Visiting Professor
1995 - 1998	U. of Tel-Aviv	Senior Lecturer
1998 April -June	Institute of Advanced Studies, Jerusalem	Visiting Professor
1996 July -August	ITP, U. of California, Santa-Barbara	Visiting Professor
1996 February-March	Inst. of Exp. Physics, U. of Innsbruck	Visiting Professor
1990 - 1995	U. of Tel-Aviv	Senior Research Associate
1987 - 1990	U. of South Carolina	Assistant Visiting Professor
1986 - 1987	U. of Tel-Aviv	Senior Teaching Assistant

C. Active participation in scientific meetings.

- 1985 Microphysical Reality and Quantum Formalism, Urbino, Italy.
- 1986 New Techniques and Ideas in Quantum Measurements Theory, New-York.
- 1987 Frontiers of the Philosophy of Quantum Mechanics, Philadelphia.
- 1988 Bell's Theorem, Quantum Theory and Conceptions of the Universe, Fairfax, MD.
- 1989 62 Years of Uncertainty: Inquiries into the Found. of Quantum Mechanics, Erice.
- 1989 Fundamental Aspects of Quantum Theory, Columbia, SC.
- 1989 Annual Meeting of South Carolina Philosophy Society.
- 1990 Workshop on Foundations of Quantum Mechanics, Santa Fe, NM.
- 1991 Annual Meeting of Israel Psychology Society.
- 1992 Fundamental Aspects of Quantum Theory, Columbia, SC.
- 1992 Annual Meeting of Israel Physical Society, Rehovot.
- 1992 Quantum Physics and the Universe, Tokyo.
- 1992 International Symposium on Foundations of Quantum Mechanics, Tokyo.
- 1992 Quantum Control & Measurement, Tokyo.
- 1992 International Workshop on Quantum Optics, Rehovot.
- 1993 Annual Meeting of Israel Physical Society, Tel-Aviv.
- 1993 International Workshop on Squeezed States and Uncertainty Relations, Maryland.
- 1993 Symposium on the Foundations of Modern Physics, Cologne.
- 1993 International Symposium on Fundamental Problems in Quantum Physics, Spain.
- 1994 Advances in Quantum Phenomena, NATO Advanced Study Institute, Erice.
- 1994 Fundamental Problems of Quantum Theory, NYAS meeting, Baltimore.
- 1994 Quantum Computation, Turin, Italy.
- 1995 Quantum Theory without Observers, Bielefeld, Germany.
- 1995 60 Years of EPR, Haifa.
- 1996 Quantum Interferometry II, Trieste, Italy.
- 1996 Quantum Computation, Turin, Italy.
- 1996 Geometric Issues in the Foundations of Science, Oxford, England
- 1996 Annual Meeting of the British Philosophy of Science Society, Oxford, England
- 1997 Quantum Computation, Turin, Italy.
- 1997 Fundamental Problems of Quantum Theory, Baltimore.
- 1998 FRISNO5, Nonlinear and Quantum Optics, Eilat, Israel.
- 1998 Quantum Computation, Turin, Italy.
- 1998 Quantum Computation and Communication, Benasque, Spain.
- 1998 Mysteries and Puzzles in Quantum Theory, Lake Garda, Italy
- 1998 Mathematical and Conceptual Foundations of Quantum Theory, Nottingham, UK.
- 1999 Annual Meeting of Israel Physical Society, Tel-Aviv.
- 1999 Complexity, Computation and the Physics of Information, Cambridge, UK.

2000 Quantum Information Theory, Haifa, Israel.
 2000 International Conference on Quantum Optics, Raubichi, Belarus
 2000 The Conceptual Foundations of Statistical Mechanics, Jerusalem, Israel
 2000 Mysteries and Puzzles in Quantum Theory, Lake Garda, Italy
 2000 Annual Meeting of the British Philosophy of Science Society, Birmingham, UK
 2000 Quantum Measurement and Information, Viena, Austria.
 2000 Bell Symposium, Viena, Austria.
 2001 Aharonov Symposium, Tel-Aviv, Israel.
 2001 Reconsideration of Foundations of Quantum Mechanics, Vaxho, Sweden 2001
 2001 XXII Solvay Conference in Physics, Delphi, Greece.
 2002 International Symposium “Quantum Informatics-2002”, Moscow, Russia.
 2003 International Workshop “Quantum Processes and Modern Electronics III” Holon.
 2003 QUBIT 2003 Celebrating Ten Years of Teleportation, Haifa, Israel.
 2004 Quantum Theory without Observers II, Bielefeld, Germany.
 2004 Quantum Informatics-2004, Moscow, Russia (Member of the Advisory Board).
 2004 Quantum Information Theory, Cambridge, UK.
 2005 Squeezed States and Uncertainty Relations, Besancon, France
 2005 Time-Symmetry in Quantum Mechanics, Sydney, Australia
 2006 Quantum Dynamics of Cold Atoms and Light, Eilat, Israel
 2006 Decoherence, Quantum Measurements and the Arrow of Time Beuggen, Germany
 2006 Quantum Foundations and Technology, Hangzhou, China
 2007 Weak Values and Weak Measurements, Phoenix AZ
 2007 The Everett Interpretation of Quantum Mechanics: 50 years, Oxford, UK
 2008 Quantum Entanglement and Decoherence, Boston, USA
 2008 The Clock and the Quantum: Time in Quantum Foundations, Phoenix, AZ, USA
 2008 DICE, Quantum Mechanics through Complexity to Spacetime, Gargano, Italy
 2008 The Probable and the Improbable: The Role of Probability in Physics, Jerusalem
 2009 FRISNO 10 French-Israel Symposium on Quantum Optics, Ein Gedi, Israel
 2009 50 years of the Aharonov-Bohm Effect, Tel Aviv, Israel (Conference Organizer)
 2009 Quantum Mechanics and Physical Reality, Sesto, Italy
 2009 Mathematical and Geometrical Explanation in Physics, Bristol, UK
 2010 Philosophy of Physics: Current Directions, Moscow, Russia
 2010 International Program on Quantum Information, Bhubaneswar, India
 2010 ONR Entanglement Beyond the Optical Regime, Los Angeles, USA
 2010 21st-Century Directions in de Broglie-Bohm Theory and Beyond, Tuscany, Italy
 2011 14th Congress of Logic, Methodology and Philosophy of Science, Nancy, France
 2011 Why the Quantum? Arizona, US
 2012 New Directions in Foundations of Physics, Washington, DC
 2012 Quantum Mechanics without Observers, Sesto, Italy
 2012 Fundamental Aspects of Quantum Theory, Orange CA
 2013 Foundations of Physics, Munich
 2013 14th International Meeting on Optical Engineering and Science, Tel Aviv
 2013 Coherence and Quantum Optics, Rochester, USA
 2013 Quantum Information and Measurement, Rochester, USA

2014 BergeFest, Quantum Optics and Foundations, Singapore
 2014 21th Central European Workshop on Quantum Optics, Brussels, Belgium
 2014 2 International Summer School in Probabilities in Physics, Black Forest, Germany
 2014 Free Will and Retrocausality in a Quantum World, Cambridge, UK
 2014 Foundations of Quantum Mechanics dedicated to John Bell, Sesto, Italy
 2014 Quantum Foundations, Zurich, Switzerland
 2014 Quantum, Nano, and Nonlinear Optics, Cancun, Mexico
 2014 3rd Latin America Optics and Photonics Conference, Cancun, Mexico
 2014 Coherence and Control in the Quantum World, Rehovot, Israel
 2015 Weak Value and Weak Measurement, Tokyo, Japan
 2015 Symposium of National Quantum Information Centre, Sopot, Poland
 2015 Quantum Theory: from Problems to Advances, Vaxho, Sweeden
 2015 Quantum (and Classical) Physics with Non-Hermitian Operators, Jerusalem, Israel
 2015 3rd Int. School in Philosophy of Physics: The Ontology of Physics, Saig, Germany
 2015 5th International Conference on Quantum Cryptography, Tokyo, Japan
 2015 Emergent Quantum Mechanics, Vienna, Austria
 2015 The Time Machine Factory, Torino, Italy
 2015 Workshop on Interpretation of Quantum Mechanics, Patna, India
 2015 International Conference on Quantum Foundations, Patna, India

D. Invited Colloquia Lectures

2001 Centre of Quantum Computation, Oxford, UK
 2002 Russian Academy of Science, Saint Petersburg, Russia
 2004 Technion, Haifa Israel
 2004 DAMPT Cambridge, UK
 2005 Einstein Lecture, Tel Aviv Israel
 2005 Asher Peres Memorial Lecture, Haifa, Israel [Colloquium]
 2009 Imperial College, London, UK
 2009 California Institute of Technology, USA
 2010 Ben Gurion University, Beer Sheva, Israel [Colloquium]
 2010 Lebedev Institute, Moscow, Russia
 2010 CQT Singapore [Colloquium]
 2011 University of Toronto, Canada
 2011 Sapienza Universita di Roma, Italy
 2012 DAMPT Cambridge, UK
 2012 Hefei, China
 2013 LMU, Munich
 2013 MPQ, Munich
 2013 Bristol University, UK
 2013 Columbia University, NY
 2013 Moscow University, Russia
 2014 Wroclaw University, Poland [Colloquium]
 2015 Centrum Wiskunde and Informatica, Amsterdam

2015 University of Tsukuba, Japan
2015 Tokyo University, Japan [Colloquium]
2015 Osaka University, Japan
2015 University of Crete, Greece [Colloquium]

E. Academic and professional awards.

2015-2017 The German-Israel Foundation for Scientific Research and Development Grant No. I-1275-303.14 *Experimental studies of non-classical features of quantum systems* Principal Investigator together with Harald Weinfurter, LMU.

2014-2018 The Israel Science Foundation Grant No.1311/14 *Nonlocality in Quantum Mechanics and the Aharonov-Bohm Effect*, Principal Investigator together with Y. Aharonov, U. of Tel-Aviv.

2010-2013 The Israel-USA Binational Grant *Harnessing new quantum technologies* Principal Investigator together with P. Kwiat.

2010-2013 The Israel Science Foundation Grant No.1125/10 *Exploring Weak Values*, Principal Investigator together with Y. Aharonov, U. of Tel-Aviv.

2007-2010 The Wolfson Foundation Grant, Principal Investigator together with B. Reznik and Y. Aharonov.

2004-2007 Quantum Information Processing & Communications FET Proactive Initiative in the 6th European Framework Programme Principal Investigator together with B. Reznik, O.Regev and A. Ta-Shma,

2002-2003 The Ministry of Defense Grant No. 29388741 *Quantum Cryptography* Principal Investigator together with T.Mor, A. Ariei, Y. Aharonov and B. Reznik, U. of Tel-Aviv.

2001-2004 The Israel Science Foundation Grant No.62/01 *Fundamental Problems in Quantum Theory*, Principal Investigator together with Y. Aharonov and B. Reznik, U. of Tel-Aviv.

1998-2001 The Israel Science Foundation Grant No. 471/98 *Fundamental Problems in Quantum Theory*, Principal Investigator together with Y. Aharonov, U. of Tel-Aviv.

1995-1997 The Israel Science Foundation Grant No. 614/95 *A Novel Approach to Fundamental Problems in Quantum Theory*, Principal Investigator together with Y. Aharonov, U. of Tel-Aviv.

1991-1993 The Israel Science Foundation Grant No. 425/91 *New Approach to Fundamental Problems in Quantum Theory*, Principal Investigator together with Y. Aharonov and D. Rohrlich, U. of Tel-Aviv.

1990 National Science Foundation Grant No. PHY-9008048 *Geometric Phase and Quantum Coherence*, Principal Investigator together with Y. Aharonov and J. Anandan, USC.

1972 First Prize in Physics Olympiad between all high school students of USSR

F. Membership in professional societies.

American Physics Society, 1988-91.

South Carolina Philosophy Society, 1989-90.

Israel Physical Society, from 1992.

New-York Academy of Science Society, 1987-88, 1995-1996.

American Philosophy of Science Society, from 1993.

G. Editing

1994 - Archive *quant-ph*, Moderator

2014 - Quantum Studies: Mathematics and Foundations, Managing Editor

2009 - International Journal of Quantum Information, Member of Editorial Board

2010 Special issue of Journal of Physics A: Quantum phases: 50 years to the Aharonov-Bohm Effect and 25 years to the Berry phase, Guest Editor.

2007-2009 American Journal of Physics, Member of Editorial Advisory Board.

Referee in the last three years:

American Journal of Physics

Axioms

Entropy

British Journal for the Philosophy of Science

European Journal for Philosophy of Science

European Physical Journal D

Europhysics Letters

Foundations of Physics

Frontiers

Journal of Physics A

Journal of Mathematical Physics

International Journal of Modern Physics B

International Journal of Quantum Information

International Journal of Distributed Sensor Networks

Nature

Nature Physics

New Journal of Physics

Optics Express

Physical Review A

Physical Review Letters

Proceedings of the National Academy of Sciences

Proceedings of the Royal Society A

Scientific Reports

SIAM Journal on Computing
 Synthese
 Studies in History and Philosophy of Modern Physics
 Quanta
 Quantum Information and Computation
 Quantum Information Processing
 Quantum Studies: Mathematics and Foundations
 Results in Physics

Grant proposals

Austrian Science Fund
 Chinese Academy of Sciences
 John Templeton Foundation
 Israel Science Foundation
 National Science Centre, Poland
 National Science Foundation (USA)
 The Netherlands Organisation for Scientific Research, Vici Grant
 US - Israel Binational Science Foundation

Students and their current positions

Kelvin McQueen	Post Doc student	
Kevin Rosenzweig	M.Sc. Internship	
Nimrod Ben Shalom	M.Sc. student	
Alon Ben Israel	M.Sc. student	
Ariel Danan	M.Sc. 2008, Ph.D. soon	
Eliahu Cohen	Ph.D. 2015	Post Doc in Bristol University
Yaron Kedem	Ph.D. 2013	Post Doc in Nordita Sweden
Demetry Farfurnik	M.Sc. 2013	Ph.D. physics student Hebrew U-ty Jerusalem
Naama Hallakoun	M.Sc. 2013	Ph.D. physics student Tel Aviv
Gillie Naaman-Marom	M.Sc. 2012	Lecturer in Science College, Israel
Aharon Brodich	M.Sc. 2008	Post Doc U-ty of Waterloo Canada
Nathanel Aharon	M.Sc. 2008, Ph.D.2013	Post Doc in Hebrew U-ty Jerusalem
Alex Retzker	Ph.D. 2006	Head of quantum group, Hebrew U-ty Jerusalem
Tamar Ravon	M.Sc. 2006	Ph.D. student Physics Tel Aviv
Izhar Nevo	M.Sc. 2005	Engineer in ECI telecom
Amir Kalev	M.Sc. 2004	Post Doc University of New Mexico
Zion Mitrany	M.Sc. 2004	
Berry Groisman	Ph.D. 2003	Lecturer in DAMPT, Cambridge
Nadav Yoran	Ph.D. 2003	Technical Expert in Korakh and Co.
Ori Belkind	M.Sc. 1998	Lecturer in Philosophy of Sci. at Tel Aviv U-ty
Lior Goldenberg	M.Sc. 1995, Ph.D.2004	Founder of Beyond Counting Systems Int.

G. Informal brief CV

Lev Vaidman, born at 1955, knew that he will be a physicist since meeting a physics teacher Demitry Vinitzky in Leningrad's secondary school. After one year at Leningrad's University he moved to Israel and got the B. Sc. degree from Hebrew University in Jerusalem and then, after the army service, the M. Sc. degree from Weizmann Institute in Rehovot. He started his work on foundations of quantum mechanics at Tel-Aviv university under supervision of Yakir Aharonov and got his Ph.D. at 1987. After spending three years at the University of South Carolina he came back to the physics department of Tel-Aviv university where he become full professor at 2005.

Vaidman's main achievements are:

Teleportation of continuous variables

3-box paradox (with Y. Aharonov)

Weak measurements (with Y. Aharonov and D. Albert)

Interaction-free measurements (with A. Elitzur)

Cryptography with orthogonal states (with L. Goldenberg)

Quantum Gambling (with L. Goldenberg)

Error prevention protocol (with L. Goldenberg and S. Wiesner)

Protective measurements (with Y. Aharonov)

Non-local measurements (with Y. Aharonov and S. Popescu)

Modular values (with Y. Kedem)

Theoretical and experimntal analysis of the past of a quantum particle

Local explanation of the Aharonov-Bohm Effect

Analysis of quantum counterfactuals

Probability in the framework of the many-worlds interpretation