



CURRICULUM VITAE

Oktay K. PASHAEV

BASIC INFORMATION

Professor Doctor,

Department of Mathematics, Faculty of Science,

Izmir Institute of Technology,

Gülbahçe Campus, Urla-Izmir, 35430

Turkey

Tel: +90 (232) 7507752; Fax: +90 (232) 7507777

E-mail: oktaypashaev@iyte.edu.tr

EDUCATION

1979-1983 Joint Institute for Nuclear Research, Dubna (Moscow), USSR.

1974-1978 Lomonosov Moscow State University, Moscow, USSR.

1971-1974 Baku State University, Baku, Azerbaijan, USSR.

DEGREES

Ph.D. - 1983, Theoretical and Mathematical Physics

M.Sc. - 1978, (Diploma) Physics

Ph.D. Thesis:

"Nonlinear Evolution Equations and Dynamics of Quasispin Systems".

Committee: V. G. Makhankov (Supervisor), A. M. Perelomov, V. K. Fedyanin

Master's Thesis:

"Boson-Fermion Instantons in Quantum Field Theory".

Committee: V. Ja. Fainberg (Supervisor), I. M. Lifshitz, I. M. Kaganov, V. Grigoriev

RESEARCH EXPERIENCE**Visiting Professor:**

1995 (1 mo.) International School for Advanced Studies (SISSA/ISAS) Trieste, Italy

1995 (1 mo.) International Centre for Theoretical Physics, Trieste, Italy

1990 - 1997 (3 mo. every year) Dipartimento di Fisica, Universit`a degli Studi
di Lecce, Italy

1993 (1 mo.) Dept. de Math`ematiques, Universite Paris-Sud (Orsay), France

1993 (1 mo.) Dept. de Physiques, Universite de Nice, France

1993, 1996, 2004, 2005, 2006, 2007, (1 mo.), 2008 (3.5 month), 2009 (2 mo.), 2010 (1 mo.); 2015, 2016, 2018- (1m), 1997-2000 Institute of Mathematics, Academia Sinica, Taipei, Taiwan

1993 (1 mo.) Dept. of Mathematics, Bilkent University, Ankara, Turkey

1994 Department of Mathematics, Institute for Basic Sciences, Marmara Research Center, TUBITAK, Turkey

Senior Research Scientist:

1990-2001, Joint Institute for Nuclear Research, Dubna (Moscow), Russia

Post-Doctoral work:

1983-1990 Joint Institute for Nuclear Research, Dubna (Moscow), USSR

Post-graduate work:

1978-1979 I. E. Tamm Theoretical Physics Department, Lebedev Physical Institute,
Moscow, USSR

TEACHING EXPERIENCE

Lectures and Seminars:

Professor Doctor,

Department of Mathematics, Faculty of Science, Izmir Institute of Technology, Izmir, Turkey, (from June 2000 – till present)

(Undergraduate courses - Differential Equations, Calculus I, II, Basic Mathematics, Advanced Mathematics, Vector Analysis, Dynamical Systems, Partial Differential Equations, Differential Geometry, History of Mathematical Concepts, Complex Analysis, Mathematics and Technology)

(Graduate courses - Modern Geometry I, II; Mathematical Methods of Classical Mechanics I, II; Complex Analysis, Mathematical Methods of Physics; Introduction to Soliton Theory, Quantum Calculus, Mathematical Methods of Quantum Mechanics, Hilbert Spaces and Quantum Theory, Basic Quantum Computation and Quantum Information)

Seminars:

Dipartimento di Fisica Universita degli Studi di Roma "La Sapienza";

Department of Physics, Universita di Firenze;

Department of Physics, Universita di Torino;

Department of Physics, Universita di Bari,

Department of Physics, Universita di Parma,

Department of Physics, Universita di Lecce,

Department of Physics, Universita di Salerno;

International School for Advanced Studies - SISSA (Trieste), Italy.

Institute of Mathematics, Academia Sinica, Taipei;

Dept. of Mathematics, Tainan;

Department of Mathematics, Hsinchu University;

Department of Mathematics and Department of Physics, Taichung University;

Department of Mathematics, Kaoshiung Normal University,

Department of Mathematics, Kaoshiung SunYat Sen University,

Department of Mathematics, Taitung University,

Dept. of Math. National Taiwan University (Taipei) (1 semester course on Soliton Theory and Applications),

Center for Theoretical Studies, Hsinchu, - Taiwan.

Dept. de Mathematiques Universite Paris-Sud (Orsay);

Dept. de Physiques Universite de Nice, - France.

Department of Mathematics, Bilkent University, Ankara;

Department of Mathematics, Istanbul Technical University,- Turkey.

National University of Singapore, - Singapore

Associated Professor

Volga Military Constructions University, Dubna,

(Moscow), USSR, 1984-1985.

Graduate/Postgraduate students guided: 17 M.Sc. and 5 Ph.D. in Mathematical Physics.

Master Students:

- 1) Igor Barashenkov, JINR, Dubna, USSR (Professor, South Africa)
- 2) Fatih Erman, Solitonic Solutions and Particle Localization in Higher Dimensional Spaces, IYTE, 2003. (Assistant Professor, Turkey)
- 3) Meltem Leman Yerbag, Stationary and 2+1 Dimensional Integrable Reductions of AKNS Hierarchy, IYTE, 2004.
- 4) Figen Akıncı, Geometry of Moving Curves and Soliton Equations, IYTE, 2004.
- 5) Zeynep Nilhan GURKAN, Integrable Vortex Dynamics and Complex Burgers' Equation, IYTE, 2005.
- 6) Neslihan ETİ, Classical and Quantum Euler Equation, IYTE, 2007
- 7) Esra TIĞRAK ULAŞ, Damping Oscillatory Models in General Theory of Relativity, IYTE, 2007 (Assistant Professor, New York University, Abu Dhabi)
- 8) Baris Ates, Nonlinear Euler Poisson Darboux Equations Exactly Solvable in Multidimensions, IYTE, 2008
- 9) Asli Sabanci, Collider Tests of Higher Curvature Gravity, IYTE, 2008 (coadv.)

- 10) Alper Hayreter, Collider Tests of String –Inspired Models with Extra Abelian-Symmetry, IYTE, 2008 (coadv.)
- 11) Selin Duruk, Resonance Solitons and Direct Methods in Soliton Theory, IYTE, 2009 (PhD student, Israel)
- 12) Tuna Bayraktar, Geometry of Curves in n-dimensional Riemannian Space. Akdeniz Univ.2011.
- 13) Şengül Nalcı, Exactly Solvable q-extended Nonlinear Classical and Quantum Models. IYTE. 2011. (PhD student, Turkey)
- 14) Soner Erkuş, q Periodicity, Self-Similarity and Weirestrass-Mandelbrot Function, IYTE, 2012
- 15) Aygul Kocak, Kaleidoscope of Quantum Coherent States and units of Quantum Information, IYTE, 2018
- 16) Tugce Parlakgorur, Apollonius Representation and Complex Geometry of Entangled Qubit States, IYTE, 2018
- 17) Merve Ozvatan, Generalized Golden-Fibonacci Calculus and Applications, IYTE, 2018
- 18) Osman Cetintas, Dynamical Symmetry of Parametric Oscillator, IYTE, 2019

PhD Students:

- 1) Ratbay Myrzakulov, JINR, Dubna, USSR (Professor, Kazakistan)
- 2) Kholmurzo Kholmurodov, JINR, Dubna, USSR (Professor, Russian Federation)
- 3) Sergey Sergeenkov, JINR, Dubna, USSR (Professor, Brazil)
- 4) Zeynep Nilhan GURKAN, Entanglement and Topological Soliton Structures in Heisenberg Spin Models, IYTE, 2010. (Assistant Professor, Kuwait)
- 5) Şengül Nalcı Tumer, Quantum Calculus of Classical Heat-Burgers Hierarchy and Quantum Coherent States. IYTE. 2017.
- 6) Aygül Koçak, Quantum Group Symmetry for Quantum Coherent States (continuing)

PUBLICATIONS - totally more than 100 papers (see [List of Publications](#)). :

Books (Authored or Edited) - 10, Research papers in refereed journals and Published talks at International Conferences - 117, Reports - 25, Popular Articles – 5, Lecture Notes - 4; Reviews for AMS Mathematical Reviews – more 183

TALKS – totally 88 - Invited talks on Nationa and International Conferences, Sectional talks and Seminars (see [List of Conferences Participation](#)).

CURRENT RESEARCH INTERESTS

- Integrable Systems and Solitons, Nonlinear Partial Differential Equations, Dynamics of Multidimensional and Topological Solitons. Resonant Soliton Dynamics.
- Topological and Chern-Simons gauge field theories, applications to the Quantum Physics, Black Holes and Gravity Theory. Non-commutative Integrable Systems. Integrable Vortex Dynamics. Quantum Potential and Nonlinear Dynamics.
- Quantum Computations and Quantum Information, q-Calculus and applications.

PROJECTS

Director:

- 2005 IYTE BAP 13 Applications of Isospectral Problems to Nonlinear Resonance Phenomena 2005-2007
- 2008-2010 IYTE BAP 32 Kuantum Teorisinde Sacilmali Parametrik Oscilatorun Sifir ve Tekil Noktalarinin Dinamiklari,
- 2017 TUBITAK 116F206 General Dispersive Nonlinear Integrable Systems and Dynamical Quantum Symmetries, 2017-2019

Researcher:

- 2002-2014 IYTE BAP 24 Analytical and Numerical Methods with applications to High Energy Physics and General Relativity
- TUBITAK 106T447 Nonlinear Vortex- Cylinder Interaction Models in Hydrodynamics 2007-2008
- 2008-2010 IYTE BAP 25 Direct Methods and Surface Geometry in Soliton Theory
- TUBITAK TBAG 110T679 Completely Integrable q-Differential and Variable Parameter Infinte Burgers Hierarchy Models 2011-2013

PROFESSIONAL ACTIVITIES

Organizer and Scientific Secretary of:

1. The First All-Union Workshop ``Solitons and Applications'', Dubna, USSR (1985),
2. The Second All-Union Workshop ``Solitons and Applications'', Yurmala, Latvia, USSR (1986),
3. The Third All-Union Workshop ``Solitons and Applications'', Pushchino USSR (1987),

(Org. Committee: S. P. Novikov, V. E. Zakharov, V. G. Makhankov)

4. The Fourth International Workshop "Solitons and Applications" dedicated to N. N. Bogolubov on his eightieth birthday, Dubna, USSR, 1989.
5. The Sixth International Workshops on Nonlinear Evolution Equations and Dynamical Systems. NEEDS' 90, Dubna, Russia, 1990
6. The Eighth International Workshops on Nonlinear Evolution Equations and Dynamical Systems. NEEDS' 92, Dubna, Russia, 1992

(Org. Committee: F. Calogero, S. P. Novikov, V. G. Makhankov).

7. Nonlinear Guided Waves V, International Workshop, Feza Gursey Institute, Istanbul, Turkey, 2011.

8. Quantum Calculus and Applications (QCA), Mini Workshop, 23 December 2016, IYTE, Izmir, Turkey

Section Organizer and Member of Scientific Committee

1. 3rd Conference on Nonlinear Science and Complexity, Cankaya University, Ankara, Turkey, 2010 (Section: Exactly Solvable Nonlinear Models and Applications)
2. International Conference on Quantum Science and Applications 25-27 May 2016, Eskisehir, Turkey
3. Workshop on Nonlinear Partial Differential Equations in Applied Mathematics, 26-28 August, 2016, Izmir, Turkey
4. WDEA 2017, The 8th International Workshop on Differential Equations and Applications, June 02-04, 2017, Dokuz Eylül University, Izmir, Turkey
5. Izmir Mathematical Days 2018, June 26-27, 2018, Yasar University, Izmir, Turkey
6. Izmir Mathematical Days II 2019, September 12-13, 2019, Dokuz Eylül University, Izmir, Turkey

Invited Editor:

1. "Solitons and Applications", World Sci. Pub., 1990.
2. "Nonlinear Evolution Equations and Dynamical Systems. NEEDS' 90", Springer Verlag, 1991
3. "Nonlinear Evolution Equations and Dynamical Systems. NEEDS' 92", World Sci. Pub., 1993.

Associated Editor:

- Physica Scripta, Royal Swedish Academy of Sciences, IOP Journal, 2013-
 - Mugla Journal of Science and Technology (MJST)

Reviewer of

- "VINITY" Scientific Reviews of Russian Academy of Science.
- "Mathematical Reviews" of American Mathematical Society.

Member of the

- American Mathematical Society.

Referee of Journals:

- Journal of Computational Mathematics and Mathematical Physics (*Zhurnal Vichisl. Mat. i Mat. Fiziki*), Moscow, Russia.
- Bulletin Institute of Mathematics, Academia Sinica, Taipei, Taiwan.
- International Journal of Modern Physics B, World Scientific, Singapore
- Journal of Nonlinear Mathematical Physics, Netherlands
- Contemporary Mathematics, AMS
- International Journal of Computer Mathematics, Taylor & Francis
- Symmetry, Integrability and Geometry: Methods and Applications, SIGMA, Kiev
- Mathematical Physics, Analysis and Geometry, Springer
- Physics Letters A, North Holland
- Journal of Mathematical Analysis and Applications
- Physica Scripta (Royal Swedish Academy of Sciences)
- Nonlinear Analysis Series B: Real World Applications
- Progress in Theoretical and Experimental Physics (Physical Society of Japan)
- The European Physical Journal Plus
- Süleyman Demirel Üniversitesi Fen Bilimleri Enstitüsü Dergisi
- Int. J. of Geometric Methods in Modern Physics (IJGMMP)
- Journal of Mathematical Physics
- Acta Mechanica
- Journal of Nonlinear Sciences and Applications
- Chaos, Solitons and Fractals
- Demonstratio Mathematica
- Turkish Journal of Physics

Young Scientists Research Award - JINR, Dubna, 1983.

Italian Government MURST and INFN Grants, 1990 - 1997.

French Government CNRS Grant, 1993.

Listed in the Marquis Who'sWho in Science and Engineering, the 7th Edition, 2003-2004; The 8th Edition, 2005-2006; 10th Anniversary Edition 2008-2009

LANGUAGES

Russian and Azeri-Turkish (native), English and Turkish (reading, writing and speaking fluently), German and Italian (reading).

HOBBY

Windsurfing, hiking, bicycling, classical music, analytical psychology and philosophy.

LIST OF PUBLICATIONS

BOOKS

1. V.G. Makhankov and **O.K. Pashaev**, "Integrable Pseudospin Models in Condensed Matter" **Soviet Scientific Reviews, Section C. Mathematical Physics Reviews**, ed. S. P. Novikov, vol.9, part 3. *Harwood Academic Publishers GmbH*, London, 1992, 152 pages.
2. N. Eti and **O.K. Pashaev**, "Classical and Quantum Euler Equation. Damped Oscillator Approach" **VDM Verlag Dr. Muller**. 2009.
3. Z. N. Gurkan and **O.K. Pashaev**, "Integrable Vortex Dynamics and Complex Burgers Equation" **VDM Verlag Dr. Muller**. 2009.
4. B. Ates and **O.K. Pashaev**, "Nonlinear Euler-Poisson-Darboux Equations. Initial Value Problems and Exact Solutions". Lambert Academic Publisher. 2011.
5. S. Nalci and **O.K. Pashaev**, "Exactly Solvable q-extended nonlinear Classical and Quantum Models". Lambert Academic Publisher. 2014.
6. E. Russel, **Oktay K. Pashaev**, *Oscillatory Models in General Relativity*, De Gruyter, 2018.

BOOKS (Invited Editor)

1. V. G. Makhankov, V. K. Fedyanin and **O. K. Pashaev** (Editors) "**Solitons and Applications**". The Fourth International Workshop dedicated to N. N. Bogolubov on his eightieth birthday, (Dubna, 1989), and the All-Union Seminar on Nonintegrable systems, (Dubna, 1989); *World Scientific Pub.*, Singapore, 1990, 437 pages.

2. V. G. Makhankov and **O. K. Pashaev** (Editors), "**Nonlinear Evolution Equations and Dynamical Systems. NEEDS' 90**". The Sixth International Workshop, (Dubna, 1990), *Springer Verlag*, 1991, 240 pages.
3. V. Makhankov, I. Puzynin and **O. Pashaev** (Editors), "**Nonlinear Evolution Equations and Dynamical Systems. NEEDS'92**" The Eight International Workshop, (Dubna, 1992), *World Scientific Pub.*, Singapore, 1993, 486 pages.
4. Abraham Maslow, "**The Psychology of Science. A Reconnaissance**". O.K. Pashaev (Editor), Moscow-Izhevsk, 2015, 150 pages

PAPERS IN REFEREED JOURNALS AND PROCEEDINGS BOOKS

{1978}

1. V. Ja. Fainberg and **O.K. Pashaev**, "On the fermion contribution to instantons" *Physics Letters* B77, N 2, (1978), 208-210. (SCI)

{1981}

2. V. G. Makhankov, N. V. Makhaldiani and **O.K. Pashaev**, "On the integrability and isotopic structure of the one-dimensional Hubbard Model in the long wave approximation" *Physics Letters* A81, N2,3, (1981), 161-164. (SCI)

{1982}

3. V. G. Makhankov and **O.K. Pashaev**, "A new integrable model of quantum field theory in the state space with indefinite metric" *Physics Letters* A89, (1982), 218-222. (SCI)
4. V.G. Makhankov and **O.K. Pashaev**, "Nonlinear Schrödinger Equation with non-compact isogroup" *Theoretical and Mathematical Physics*, 53 (1982) 55-67. (SCI)

{1983}

5. V. G. Makhankov and **O.K. Pashaev**, "On the gauge equivalence of the Landau-Lifshitz and the Nonlinear Schrödinger Equations on symmetric spaces", *Physics Letters* A95, N 2, 1983, 95-100. (SCI)
6. A. Kundu and **O.K. Pashaev**, "Comments on the gauge equivalence between Heisenberg spin chains with single-site anisotropy and Nonlinear Schrödinger equations" *Journal Physics.C: Solid State Physics*, vol. 16, (1983), L585-. (SCI)
7. V G Makhankov and **O.K. Pashaev**, "Integrable models of QFT in the state space with indefinite Metric", "Group Theoretical Methods in Physics", Vol.1-3,(Zvenigorod, 1982), Nauka,Moscow, (1983) , vol.II, p.349-356; and *Harwood Academic Publ.* (1985), 407-414.
9. A. Kundu, V. Makhankov and **O.K.Pashaev**, "Integrable reductions of many component magnetic systems" *Physica Scripta*, vol.28, N 2, 1983 , p.229-. (SCI)

10. V. G. Makhankov, **O.K. Pashaev** and S. A. Sergeenkov, "Coloured" solitons in a stable medium" *Physics Letters A*98 (1983) 227-232. (SCI)

{1984}

11. V. G. Makhankov, **O.K. Pashaev** and S. A. Sergeenkov, "Hole - like excitations in many component systems" *Physica Scripta*, vol.29, N6, (1984), 521-525. (SCI)

{1985}

12. A. Kundu, V. G. Makhankov and **O.K. Pashaev**, "On nonlinear effects in magnetic chains" *Physica D*16, (1985), p.276-. (SCI)

13. V. Makhankov, **O.K. Pashaev** and S. A. Sergeenkov, "Bose Gas Models with Noncompact Symmetry Groups" *III International Symposium on Selected Topics in Statistical Mechanics*, (Dubna, 1984), D17-84-850, vol.II, 45-52, {Dubna}, 1985.

14. V. G. Makhankov, **O.K. Pashaev** and S. A. Sergeenkov, "Dynamical symmetry and spin waves of isotropic antiferromagnet" *JINR Rapid Communications*, N 10-85, Dubna, (1985), 45-52.

{1986}

15. Kh. T. Kholmurodov, R. Myrzakulov and **O.K. Pashaev**, "Particle-like excitations in many component magnon-phonon systems" *Physica Scripta*, vol. 33, N 4, (1986), p. 378-. (SCI)

16. V.G.Makhankov and **O.K. Pashaev**, "Nonlinear Integrable Models with a Noncompact Group in the Theory of a Weakly Nonideal Bose Gas" *Group-theoretic Methods in Physics*, Vol.1, (Yurmala, 1985), 346-355, Nauka, Moscow, 1986.

17. **O.K. Pashaev** and S. A. Sergeenkov, "Nonlinear σ models with noncompact symmetry group in the theory of a nearly ideal Bose gas" *Physica A* 137, (1986), N1-2, 282-294. (SCI)

{1988}

18. F. Kh. Khakimov, Kh. T. Kholmurodov and **O.K. Pashaev**, "Soliton diffraction in a nonlinear defocusing medium" *Tadjik SSR Academy of Sciences Izvestiya, Section Physics & Mathematics*, N 1 (107), (1988), 69-71.

{1989}

19. V. Makhankov, Kh. Kholmurodov and **O.K. Pashaev**, "Threshold of KdV soliton production" *Physica Scripta*, vol. 39, (1989), p. 9-. (SCI)

20. V. G. Makhankov, R. Myrzakulov and **O.K. Pashaev**, "Gauge equivalence, supersymmetry and classical solutions of OSPU(1,1 / 1) Heisenberg model and Nonlinear Schrödinger equation" *Letters in Mathematical Physics*, 16, (1988), N1, 83-92. (SCI)

21. V. Makhankov and **O.K. Pashaev**, "Noncompact magnets and the Bogolyubov condensate" *Academi Sciences USSR Dokladi*, vol. 301, N 6, (1988) (in Russian), 1356-1361; translated in *Soviet Physics Doklady*, 33(8), 1988, 585-587. (SCI)

{1989}

22. V. Makhankov and **O.K. Pashaev**, "Supersymmetric integrable SU(2/1) Heisenberg models" *Physics Letters* A141, N 5,6, (1989), 285-288. (SCI)

23. V. Makhankov and **O.K. Pashaev**, "Supersymmetric Integrable Heisenberg Models" *Nonlinear World. The IV Intern. Workshop on Nonlinear and Turbulent Processes in Physics*, (Kiev, 1989), Eds. A. G. Sitenko, V. E. Zakharov & V. M. Chernousenko, Naukova Dumka, Kiev (1989), vol.2, p. 47-.

{1990}

24. **O.K. Pashaev**, "Integrable Classical Heisenberg Models on SU(N/M) Superalgebras" JINR P17-89-146, *Group Representations in Physics*, (Tambov, 1989), ed. M. A. Markov, M. 1990.

25. V. Makhankov and **O.K. Pashaev**, "Integrable Classical Heisenberg Models on Superalgebra SPL(2/1)" "*Solitons and Applications*", (Dubna, 1989), 31-66, Eds. V. G. Makhankov, V. K. Fedyanin and O. K. Pashaev, *World Scientific Pub.*, Singapore, 1990.

{1991}

26. M Boiti, L Martina, **O.K. Pashaev** and F Pempinelli, "Dynamics of multidimensional solitons" *Physics Letters* A160, (1991), 55-63. (SCI)

27. M Boiti, L Martina, **O.K. Pashaev** and F Pempinelli, "New Soliton Solutions for the Davey-Stewartson Equation". "*Nonlinear Dynamics: Solitons and Chaos*", (Brussels, 1990), p. 312-, Eds. I. Antoniou and F. Lambert, Springer Verlag, Berlin, 1991.

28. F Calogero, V Makhankov and **O.K. Pashaev**, "Sixth Workshop on Nonlinear Evolution Equations and Dynamical Systems (NEEDS' 90)", *Inverse Problems*, 7, 1991, p.167-. (SCI)

29. **O.K. Pashaev**, "Integrable N < O Component Nonlinear Schrödinger Model, Phase Transitions and Supersymmetry", "*Nonlinear Evolution Equations and Dynamical Systems*", Proc. of the VI Workshop, (Dubna, 1990), 8-11, Eds. V.G. Makhankov and O. K. Pashaev, Springer Verlag, Berlin, 1991.

30. **O.K. Pashaev**, "Integrable Supersymmetric Models and Phase Transitions in One Dimension" "*Nonlinear Dynamics: Solitons and Chaos*", (Brussels, 1990), p. 111-, Eds. I. Antoniou and F. Lambert, *Springer Verlag*, Berlin, 1991.

{1992}

31. V. Makhankov and **O.K. Pashaev**, "Continual classical Heisenberg models defined on graded SU(2,1) and SU(3) algebras", *J.Math.Phys.* 33, (1992), 2923 -2936. (SCI)

32. **O.K. Pashaev**, "Supersymmetric Heisenberg Models", *The VII Workshop on Nonlinear Evolution Equations and Dynamical Systems*, (Baia Verde, 1991), Italy, p. 171-183, Eds. M.Boiti, L.Martina and F.Pempinelli, *World Scientific Publ.*, Singapore, 1992.

33. M Boiti , L Martina, **O.K. Pashaev** and F Pempinelli , "Interaction of Real and Virtual Multi dimensional Solitons", *Nonlinear Evolution Equations and Dynamical Systems. NEEDS'91*, (Baia Verde, 1991), 12-21, Eds. M. Boiti, L.Martina and F.Pempinelli, *World Scientific Publ.*, Berlin, 1992.

34. M Boiti , L Martina, **O.K. Pashaev** and F Pempinelli , "Real and Virtual Multidimensional Solitons" "*Nonlinear Processes in Physics*", (Potsdam, USA, 1991), p.77-81,Eds. A. S. Fokas, D. J. Kaup, A. C. Newell and V. E. Zakharov, *Springer-Verlag*, Berlin,1992.

{1993}

35.L Martina, **O.K. Pashaev** and G Soliani , "Anyons in planar ferromagnet"*Seminar on Quantum Groups*, (Florence, 1993), e-Proc. Florence University.

36. L Martina, **O.K. Pashaev** and G Soliani , "Self-Dual Chern-Simons solitons in nonlinear sigma models", *Modern Physics Letters A8*, (1993), 3241-3250. (SCI)

37. L Martina, **O.K. Pashaev** and G Soliani , "Chern-Simons gauge theory of 2-Dimensional ferromagnet" *Physical Review B48*, (1993) 15787-15791. (SCI)

38. L Martina, **O.K. Pashaev** and G Soliani, "Multidimensional Topological Magnetism admitting Bilinear Representation", "*Nonlinear Evolution Equations and Dynamical Systems. NEEDS' 92*", The VIII Workshop, (Dubna, 1992), p. 84-97, Eds.V. Makhankov , I. Puzynin and O. Pashaev, *World Scientific Pub.*, Singapore, 1993.

{1994}

39. L Martina, **O.K. Pashaev** and G Soliani , "Bilinearization of multidimensional topological magnetism", *Journal Physics A: Mathematics and General* 27, N3, (1994), 943-954. (SCI)

40. L Martina, **O.K. Pashaev** and G Soliani , "Static vortex solutions and singular auxiliary field in the Ishimori model", *Inverse Problems*, 10, (1994), L7-L10. (SCI)

41. L Martina, **O.K. Pashaev** and G Soliani , "On topological soliton dynamics in multidimensional ferromagnetic continuum", *Theoreticeskaya i Matematiceskaya Fizika* 99, N3, (1994), 462-470 (in Russian); trans. in *Theoretical and Mathematical Physics*, 99 (1994) 726-732. (SCI)

42. L Martina, **O.K. Pashaev** and G Soliani , "Quantization of planar ferromagnets in the Chern-Simons representation",*Theoreticeskaya i Matematiceskaya Fizika* 99, N3, (1994), p.450-461; trans. In *Theoretical and Mathematical Physics*, 99 (1994) 718-725. (SCI)

{1995}

43. L Martina, **O.K. Pashaev** and G Soliani, "Chern-Simons Quantum Field Representation of Planar Ferromagnets", Conference Proceedings Vol. 48,"*National Workshop on Nonlinear Dynamics*", p.105-, Eds. M. Costato, A. Degasperis and M. Milani, SIF Bologna 1995.

44. L Martina, **O.K. Pashaev** and G Soliani , "Chern-Simons-Witten Topological Field Theory and Integrable Models", "*Symmetry Methods in Physics*" . The VII Int. Conf.}, Eds.A.N. Sissakian and G.S. Pogosyan, JINR, Dubna, 1995, vol.2, p.396-.

{1996}

45. **O.K. Pashaev** , "Integrable Chern-Simons gauge field theory in 2 + 1 dimensions",*Modern Physics Letters*, A11 (1996) 1713-1728. (SCI)

46. **O.K. Pashaev** , "Chern-Simons Gauge Field Theory with Integrable Dynamics in 2+1 Dimensions". "*Nonlinear Physics. Theory and Experiment*", (Lecce, 1995), 445-453, *World Scientific Publ.* NJ, 1996.

47. L Martina, **O.K. Pashaev** and G Soliani, "Integrable Models and Topological Field Theory", "*Nonlinear Physics. Theory and Experiment*", (Lecce, 1995),412-420, *World Scientific Publ.* NJ, 1996.

48. **O.K. Pashaev** , "The Lax pair by dimensional reduction of Chern-Simons gauge theory", *Journal of Mathematical Physics*, 37 (1996) 4368-4387. (SCI)

49. M.Blasone, E. Graziano, **O.K. Pashaev** and G. Vitiello, "Dissipation and topologically massive gauge theories in pseudo - Euclidean plane", *Annals of Physics (NY)*, 252 (1996) 115-132. (SCI)

50. L Martina, **O.K. Pashaev** and G Soliani "Chern - Simons field theory and completely integrable systems", *Physics Letters B* 378 (1996) 175-.(SCI)

{1997}

51. L Martina, **O.K. Pashaev** and G Soliani "Topological field theories and integrable models", *Journal of Mathematical Physics*, 38 (1997) 1397-1412. (SCI)

52. **O.K. Pashaev** , J.-H. Lee, "Integrable hierarchy from Topological Gauge Theory", *International Journal of Modern Physics*, A12 (1997) 213-218. (SCI)

53. **O.K. Pashaev** , "Integrable models as constrained topological gauge theory", *Nuclear Physics B*, (Proc. Supplement) 57 (1997) 338-341. (SCI)

54. L Martina, **O.K. Pashaev** and G Soliani "Integrable dissipative structures in gauge theory of gravity ", *Classical and Quantum Gravity*, 14 (1997) 3179-3186. (SCI)

{1998}

55. J.-H. Lee and **O.K. Pashaev** , "Moving frames hierarchy and BF theory" , *Journal of Mathematical Physics*, 39 (1998) 102-123. (SCI)

56. M.Blasone, **O.K. Pashaev** and G. Vitiello "SU(1,1) Quantum Dissipation and Topologically Massive Gauge Theories", *The 5th Wigner Symposium*, (Vienna, 1997), Eds. P. Kasperkovitz and D. Grau, *World Scientific Pub.*, Singapore, 1998, p.165-167.

57. **O.K. Pashaev** , "Integrable Hierarchy of Reaction-Diffusion Systems", *The International Workshop on Differential Equations and Scientific Computations*, Eds. J.-S. Guo and Y.-J. Lin Guo, Taipei, 1998, p.307

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4. **O.K. Pashaev** "Analyticity and Integrability as Symbolic Forms",
In "Mathematic, Logic and Philosophy", Istanbul, 2004. 263-279
5. S.Pashaeva and **O.K. Pashaev**, "Ancient Myth and Modern Science", In "Mathematic, Logic and Philosophy: Science and Art", Istanbul, 2008.

CONFERENCE/SYMPOSIUM PARTICIPATION

1. Workshop "Modern Problems of Quantum Field Theory and Elementary Particle Physics" - Tashkent, Uzbekistan, 1979.(s)
2. Workshops "Quantum Theory of Solitons" - Leningrad, USSR, 1980, 1982, 1984.(s)
3. All-Union School on Nonlinear Waves - Gorkiy, USSR, 1981.(s)
4. International Seminars on Group-Theoretical Methods in Physics - Zvenigorod, USSR, 1982; - Yurmala, USSR, 1985.(s)
5. Department of Nuclear Physics Acad.of Sci.USSR Sessions - Moscow, USSR, 1982, 1983.(s)
6. CERN-JINR School of Physics - Tabor, Czechoslovakia, 1983.(s)
7. All-Union Workshop "Landau-Lifshitz Equation" - Kiev, Ukraina, 1984.(i)
8. III International Simposium on Selected Problems of Statistical Mechanics - Dubna, USSR, 1984.(s)
9. All Union Workshops "Solitons and Applications" - Dubna, USSR, 1985; - Yurmala, Latvia, 1986; - Puschino, USSR, 1987.(i)
10. 6th All-Union Colloquium "Modern Group Analysis: Methods and Applications" - Baku, Azerbaijan, 1988.(s)
11. Workshop "Representation Theory and Group Theoretical Methods in Physics" - Tambov, Russia, 1989.(s)
12. 4th International Workshop "Solitons and Applications" - Dubna, USSR, 1989.(i)
13. 4th International Workshop on Nonlinear and Turbulent processes in Physics "Nonlinear World" - Kiev, Ukraina, 1989.(s)
14. 18 th International Colloquium on Group - Theoretical methods in Physics - Moscow , Russia, 1990.(s)
15. 6th International Workshop on Nonlinear Evolution Equations and

- Dynamical Systems (NEEDS') - Dubna, USSR, 1990.(i)
16. Aspects of Nonlinear Dynamics: "Solitons and Chaos" - Brussels, Belgium, 1990. (i)
 17. 7th International Workshop "NEEDS'- 91" - Gallipoli, Italy , 1991.(i)
 18. 8th International Workshop on Nonlinear Evolution Equations and Dynamical Systems(NEEDS') - Dubna, Russia, 1992.(i)
 19. Seminar on Quantum Groups - Florence, Italy, 1993.(i)
 20. International Workshop "Symmetry Methods in Physics" - in memory of Prof. Ya.A.Smorodinsky - Dubna, Russia, 1993.(s)
 21. Workshop "The Secrets of Quantum Intuition" - Dubna, Russia, 1993.(i)
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 23. 34. Internationale Universitätswochen für Kern- und Teilchenphysik, "Low-Dimensional Models in Statistical Physics and Quantum Field Theory", Schladming, Austria, 1995.(s)
 24. Conference on Topological and Geometrical Problems related to Quantum Field Theory, Trieste, Italy, 1995.
 25. Spring School on String Theory, Gauge Theory and Quantum Gravity, Trieste, Italy, 1995.
 26. Conference on Recent Developments in Statistical Mechanics and Quantum Field Theory, Trieste, Italy, 1995.
 27. Nonlinear Physics. Theory and Experiment, Gallipoli, Italy, 1995.(i)
 28. Workshop "The Secrets of Quantum Intuition in Physics and Mathematics" , 18-20 July, Dubna, Russia, 1995.(i)
 29. VII International Conference on Group Theoretical Methods in Physics, Dubna, Russia, 1995.(s)
 30. II International Workshop on Classical and Quantum Integrable Systems. Algebraic Methods and Lie Algebra Contractions, Dubna, Russia, 1996.(s)

31. Second Conference on Constrained Dynamics and Quantum Gravity,
(in honor of Tullio Regge 65's), Santa Margherita, Italy, September 1996.(s)
32. 11th International Workshop "NEEDS'- 97" - Crete, Greece , June, 1997.(i)
33. International Seminar "Supersymmetries and Quantum Symmetries"
(in memory of V.I.Ogievetsky), Dubna, Russia, July, 1997.(i)
34. VIII International Conference Symmetry Methods in Physics,
(dedicated to the 80th anniversary of Prof. Ya.A.Smorodinsky
Dubna, Russia, July, 1997.(s)
35. V International Workshop on Differential Equations and
Scientific Computations, Taipei, Taiwan, 1998.(i)
36. VII International Workshop on Differential Equations and
its Applications, Hui-Sun Forest Park, Nat. Chung-Hsing Univ, Taiwan, 1999.(i)
37. Workshop on Geometry and Physics, Academia Sinica, Taipei, Taiwan, 1999.(i)
38. 13th International Workshop "NEEDS'- 99" - Chania, Crete, Greece , 1999.(i)
39. Nonlinearity Integrability and all that. Twenty years after NEEDS' 79. - Gallipoli
(Lecce), Italy, 1999.(i)
40. 1999 International Conference on Nonlinear Analysis. Nonlinear
Partial Differential Equations and Calculus of Variation. In Celebration
of the Sixtieth Birthday of Fon-Che Liu, Taipei, Taiwan, 1999.(s)
41. Kruskal 2000. Conference on Integrable Systems in celebration of M. D. Kruskal's
75th birth-year, - Adelaide, Australia, 2000.(i)
42. International Conference on Mathematical Analysis and its Applications - ICMAA
2000, Kaoshiung, Taiwan, 2000.(s)
43. Workshop on Soliton Theory, Integrable systems and related topics - Taipei,
Taiwan, 2000.(i)
44. 14th International Workshop "NEEDS'- 2000" - Gokova, Turkey, 2000.(i)
45. 13th Turkish Mathematical Society Symposium - Istanbul, Turkey, 2000.(s)
46. Nonlinear Physics: Theory and Experiment. II. – Gallipoli (Lecce), 2002 (i)

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48. Study Weeks on Inverse Spectral Transform and Soliton Theory – Feza Gursey Institute, Istanbul, 2004 (i)
49. International Workshop on Differential Equations and Its Applications – Istanbul, 2005 (s)
50. Workshop on Integrable Systems – Institute of Mathematics, Taipei, 2005 (i)
51. Mathematical Methods in Engineering. International Symposium, Ankara, Turkey, 2006 (s)
52. Nonlinear Physics: Theory and Experiment. IV. – Gallipoli (Lecce), 2006 (i)
53. Nonlinear Schrodinger Equation – Istanbul, 2006 (i)
- 54- “Mathematic, Logic and Philosophy: Science and Art”, Foca Izmir /Turkey, 2007.(s)
55. Nonlinear Physics: Theory and Experiment. V. – Gallipoli (Lecce), 2008 (i)
56. Workshop on Nonlinear Analysis and Geometric Analysis, - Chi Tou, Taiwan, September 2008 (i)
57. International Conference on Engineering and Computational Mathematics, Hong Kong 2009 (i)
58. Nonlinear Dynamical Systems: Chaos and Fractal Geometry. ITAP Summer School, Turunc, Marmaris, Turkey 2009 (i)
58. 3rd Conference on Nonlinear Science and Complexity, Cankaya University, Ankara, Turkey, 2010 (i)
59. Nonlinear Dispersive Wave Equations, Bogazici University, Istanbul, 2010 Turkey(i)
60. Nonlinear Guded Waves V, Istanbul 2011, Turkey (i).
61. 7th International Conference on Quantum Theory and Symmetries, Prague, Check Republic, 2011(s).
62. Solitons in 1+1 and 2+1 dimensions. DS, KP and all that. Lecce, Italy, 2011(i).
63. Mystery of Pi, Seminar Math Department IYTE, 14.03.2012
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65. Physics and Mathematics of Nonlinear Phenomena 2013, Gallipoli Italy, 2013 (i)
66. Mini Workshop on Analysis and Differential Equations, Taipei, Taiwan, 2013 (i)

67. The Sixth International Workshop on Differential Equations and Applications WDEA 2013, Izmir, Turkey, 2013 (i)
68. International Scientific Workshop Regular and Chaotic Hydrodynamics. Theory and Applications, Izhevsk, Russian Federation, 2014 (i)
69. Fifth International Conference and School Geometry, Dynamics, Integrable Systems, GDIS-2014, Trieste, Italy, 2014 (i)
70. Institute of Mathematics, Academia Sinica, Taiwan, Seminar "Hydrodynamic Vortices, Circle Theorems and Quantum Calculus" 4 February-2015
71. Pi – Fundamental Constant of Mathematical World, Seminar Math Department IYTE, 13.03.2015
72. The 7th International Workshop Differential Equations and Applications WDEA 2015, Izmir, Türkiye, (i) "Linear and nonlinear Integrable systems with q-deformed dispersion", 28-31 July 2015
73. New York University Abu Dhabi, United Arab Emirates, Seminar "Quantum Calculus in Classical Hydrodynamics and Quantum Theory", 3 April 2016
74. International Conference on Quantum Science and Applications, Eskisehir, Turkey, (i) "Quantum Calculus of Classical Vortex Images, Integrable Models and Quantum States", 25-27 May 2016
75. Institute of Mathematics Academia Sinica, Taiwan, Seminar "Linear and Nonlinear Integrable Systems with q-deformed Dispersion", 9 August 2016.
76. Institute of Mathematics Academia Sinica, Taiwan, Seminar "From q-analytic functions to q-traveling waves", 17 August 2016
77. Workshop on Nonlinear Partial Differential Equations in Applied Mathematics, Izmir, Türkiye, (i) "q-and f-Deformed Dispersive Linear and Nonlinear Integrable Systems", 26-28 August 2016
78. Mini Workshop Quantum Calculus and Applications, Izmir, Turkey, (i), "Quantum Calculus in Hydrodynamics and Quantum Theory", 23 December 2016
79. Quantum Optiği ve Bilişim Toplantısı (Quantum Optics and Information), KOBİT-1, İzmir, Turkey, (i), "Classical Method of Images and Quantum Entangled Coherent States", 2-3 February 2017
80. The 8th International Workshop Differential Equations and Applications WDEA 2017 Izmir, Türkiye, (i) "General Dispersive Nonlinear Integrable Systems and q-Calculus with Recursion operator and Spectral Parameter Bases", 2-4 June 2017
81. II Workshop on Nonlinear Partial Differential Equations in Applied Mathematics, Izmir, Türkiye, (i) "The Resonant Soliton Hierarchies. From RNLS and KP-II to Relativistic and q-Dispersive Resonant Solitons", 8-10 August 2017
82. New York University Abu Dhabi, United Arab Emirates,

Math & Physics Research Seminar, “Classical Method of Images and Entangled Quantum States”, 13 November 2017

83. New York University Abu Dhabi, United Arab Emirates, Physics Seminar “From RNLS and KP-II to Relativistic and q-Dispersive Equations “, 16 November 2017

84. Pi – Fundamental Constant of Mathematical World, Seminar Math Department IYTE, 23 March 2018

85. Quantum Group Symmetry for Kaleidoscope of Hydrodynamic Images and Quantum States, The 32nd International Colloquium on Group Theoretical Methods in Physics (Group32), Prague, 9-13 July 2018

86. Dynamical Symmetry, q-Semiclassical Expansion and Shock Soliton Fission in q-Viscous Burgers’ Equation, Institute of Mathematics Academia Sinica, Taiwan, 29 August 2018

87. Mathematics of Nonlinear World. From Pendulum to Solitons, Taitung University, Taiwan, 10 September 2018

88. Pi – Fundamental Constant of Mathematical World, Seminar in Izmir University of Economics, 18 March 2019

