Curriculum Vitae

A. Personal Data

| Name: | Nirov Khazretali Sefovich |
|------------------------|---|
| Date / Place of Birth: | 24.08.1965, Kabardino-Balkaria, USSR |
| Citizenship: | Russian Federation |
| Languages: | Russian, English, German, Circassian |
| Marital Status: | Married, 1 child |
| Address (home): | 142191 Moscow, Troitsk, Mikrorajon V-2-104 |
| Address (work): | Institute for Nuclear Research of the Russian Academy of Sciences |
| | 117312 Moscow, 60th October Anniversary Ave, 7a |
| | Phone: +7-499-783-9291, Fax: +7-499-135-2268, E-mail: nirov@inr.ac.ru |

B. Education and Degrees

| 1980 - 1982 | A. N. Kolmogorov School of Physics and Mathematics at Moscow State University |
|-------------|---|
| | (18th Physical-Mathematical Boarding School in Moscow). |
| 1982 - 1988 | Diploma Degree (M.Sc.) in Theoretical Physics, Physics Department, |
| | Moscow State University. |
| 1988 - 1091 | Post-graduate Study at the Division of Quantum Theory and High Energy Physics |
| | of Moscow State University (Moscow), and at the Department of Theoretical Physics |
| | of the Institute for High Energy Physics (Protvino, Moscow Region). |
| 19.12.1991 | Candidate of Sciences (Ph.D.) in Theoretical and Mathematical Physics, |
| | Thesis "Equivalence between Lagrangian and Hamiltonian BRST Formalisms", |
| | Institute of Nuclear Physics at Moscow State University, Supervisor: Dr. A. V. Razumov. |
| 12.11.2009 | Doctor of Sciences in Theoretical and Mathematical Physics, |
| | Thesis "Classification, Symmetries and Solutions of Toda Systems", |
| | Institute for Nuclear Research of the Russian Academy of Sciences (INR RAS), Moscow. |

C. Some Projects and Awards

| 1992 - 1998 | "Gauge-invariant systems of general form: Classical theory and problems of quantization", |
|-------------|---|
| | Weingart Foundation Award through Cooperative Agreement with Department |
| | of Physics of the UCLA, Los Angeles, and supported by G. Soros International Science |
| | Foundation, and by Alexander von Humboldt Foundation (AvH Research Fellowship). |
| 2004 | "Z-graded twisted loop Lie algebras and Toda systems", |
| | Alexander von Humboldt Research Fellowship. |
| 2006 - 2008 | "Integrable systems in mechanics, field theory and statistical physics", |
| | Russian Foundation for Basic Research (RFBR). |
| 2008 - 2011 | "Integrable systems: Mtehods and applications", |
| | RFBR and DFG, Germany. |
| 2012 - 2015 | "Integrable field theories and lattice models", |
| | RFBR and DFG, Germany. |
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D. Professional Employment

| 1991 - present | Junior Researcher, Researcher, Senior Researcher, Leading Researcher, |
|----------------|---|
| | Department of Theoretical Physics, INR RAS, Moscow. |
| 2018 - present | Researcher, |
| | International Laboratory of Representation Theory and Mathematical Physics, |
| | National Research University Higher School of Economics, Moscow. |

E. Temporary and Visiting Positions

| 07.1996 - 12.1997 | Technical University, Institute of Theoretical Physics, Munich, Germany; |
|-------------------|--|
| | Researcher, Alexander von Humboldt Fellow. |
| 01.1998 - 06.1998 | Bonn University, Institute of Theoretical Physics, Germany; |
| | Researcher, Alexander von Humboldt Fellow. |
| 09.2004 - 12.2004 | Max Planck Institute of Physics, Albert Einstein Institute of Gravitational Physics, |
| | Golm b. Potsdam, Germany, Researcher; Alexander von Humboldt Fellow. |
| 08.2008 - 09.2017 | Institute of Mathematics and Natural Sciences, University of Wuppertal, Germany; |
| | (Supported by the DFG and Volkswagen Foundation); Researcher, Associate Professor. |

F. Short-term Research Visits

Bonn University, Germany (2004); Faculty of Mathematics, Geneva University, Switzerland (2011, 2012, 2014, 2016); Laboratory of Theoretical Physics, Pierre and Marie Curie University, Paris, France (2013).

G. Research Interests

- Quantum groups and their representations
- Classical and quantum integrable systems in statistical mechanics and field theory

H. Selected Publications

- Kh. S. Nirov and A. V. Razumov, W-algebras for Non-Abelian Toda Systems, J. Geom. Phys. 48 (2003) 505–545
- Kh. S. Nirov and A. V. Razumov, On Z-gradations of twisted loop Lie algebras of complex simple Lie algebras, Commun. Math. Phys. **267** (2006) 587–610
- Kh. S. Nirov and A. V. Razumov, *Toda equations associated with loop groups of complex classical Lie groups*, Nucl. Phys. **B 782** (2007) 241–275
- Kh. S. Nirov and A. V. Razumov, *The rational dressing for abelian twisted loop Toda systems*, J. High Energy Phys. **12** (2008) 048
- Kh. S. Nirov and A. V. Razumov, Solving non-abelian loop Toda equations, Nucl. Phys. B815 [PM] (2009) 404–429
- H. Boos, F. Göhmann, A. Klümper, Kh. S. Nirov and A. V. Razumov, *Exercises with the universal R-matrix*, J. Phys. A: Math. Theor. **43** (2010) 415208
- H. Boos, F. Göhmann, A. Klümper, Kh. S. Nirov and A. V. Razumov, *Universal integra*bility objects, Theor. Math. Phys. **174**(1) (2013) 21–39
- H. Boos, F. Göhmann, A. Klümper, Kh. S. Nirov and A. V. Razumov, *Quantum groups* and functional relations for higher rank, J. Phys. A: Math. Theor. **47** (2014), 275201 (47pp)
- Kh. S. Nirov and A. V. Razumov, Quantum groups and functional relations for lower rank, J. Geom. Phys. 112 (2017) 1–28 Oscillator versus prefundamental representations, J. Math. Phys. 57 (2016) 111702 (23pp)
- Kh. S. Nirov and A. V. Razumov, *Quantum groups, Verma modules and q-oscillators:* General linear case, J. Phys. A: Math. Theor. **50** (2017) 305201 (19pp)

- H. Boos, F. Göhmann, A. Klümper, Kh. S. Nirov and A. V. Razumov, Oscillator versus prefundamental representations II. Arbitrary higher ranks, J. Math. Phys. 58 (2017) 093504 (26pp)
- Kh. S. Nirov and A. V. Razumov, *Highest l-weight representations and functional relations*, SIGMA **13** (2017) 043 (31pp)

I. Some Invited Conference Reports

- "On the Khoroshkin–Tolstoy formula for the universal R-matrix in quantum integrable systems" // International Workshop on Classical and Quantum Integrable Systems (CQIS-2011), Protvino, Moscow Region, Russian Federation, January 24 27, 2011
- "On group-theoretic background of classical and quantum integrability" // XV-th International School "Particles and Cosmology", May 26 – June 2, 2011, Troitsk, Moscow Region, Russian Federation
- "The Izergin-Korepin model from the universal R-matrix: Definition and basic properties" // International Workshop on Classical and Quantum Integrable Systems (CQIS-2012), Dubna, Moscow Region, Russian Federation, January 23 27, 2012
- "Correlation functions for higher-rank models: First steps within the universal R-matrix approach" // International Workshop on Integrable Lattice Models and Quantum Field Theories, University of Wuppertal, February 16 19, 2012, Germany
- "Lessons from the universal R-matrix. I, II" // Workshop on Quantum groups, Integrable Models and Combinatorics, November 23 – December 07, 2013, LPTHE, Université Pierre et Marie Curie (CNRS), Paris Cedex 05, France
- "On the universal functional relations in quantum integrable systems" // 567th WE-Heraeus Seminar 'Integrable Lattice Models and Quantum Field Theories', June 28 – July 02, 2014, Bad Honnef, Germany
- "Quantum loop algebras and functional relations for higher and lower ranks" // The XXI-IIth International Conference on Integrable Systems and Quantum symmetries (ISQS-23), June 23 – 27, 2015, Prague, Czech Republic
- "On quantum loop algebras: q-oscillator vs. prefundamental representations" // The International Opening Workshop DFG Research Unit FOR 2316 on Correlations in Integrable Quantum Many-Body Systems, April 11 – 14, 2016, Wuppertal University, Germany
- "On quantum groups and functional relations: oscillator vs. prefundamental representations" // International Conference on Recent Advances in Quantum Integrable Systems (RAQIS'16), August 22 – 26, 2016, Geneva, Switzerland
- "Representations of quantum groups, highest *l*-weights, and functional equations" // International Workshop on Classical and Quantum Integrable Systems (CQIS-2017), in memory of L. D. Faddeev, July 24 – 29, 2017, Dubna, Moscow Region, Russia
- "Quantum loop algebras and highest ℓ -weight representations: general linear case" // FOR2316: The 2nd Workshop "Correlations in Integrable Quantum Many-Body Systems", September 05 08, 2017, Leibniz University of Hannover, Germany
- "Representations of quantum groups and integrable models in field theory and statistical physics" // The 2nd International Conference "Autumn Mathematical Readings in Adygea" (AMRA2017), October 20 24, 2017, Maykop, Russian Federation