

Tigran Stepan Hakobyan

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Research Institute of Physics

Laboratory of Theoretical Physics

Leading researcher

Education

Institution	YSU
Faculty	Faculty of physics, theoretical physics chair
Date	1989 - 1992
Degree name	PhD student

Institution	YSU
Faculty	Faculty of physics, Theoretical physics chair
Date	1982 - 1989
Degree name	Masters

Scientific Rank/degree

Institution	YSU
Date	2013
Degree name	Doctor
Specialty	Physico-mathematical sciences
Research Topic	Exact methods in one-dimensional and quasi-one-dimensional systems

Institution	Yerevan Physics Institute
Date	1996
Degree name	Candidate
Specialty	Physico-mathematical sciences
Scientific Supervisor	Ara Sedrakyan
Research Topic	R-matrices in quantum groups

Language skills

Հայերեն English Русский Français

Work experience

Institution	A. Alikhanyan national science laboratory (Yerevan Physics Institute)
Period of time	2022 till now

Rank/degree leading researcher

Institution YSU

Period of time 2021 till now

Rank/degree leading researcher

Institution Theoretical physics chain, YSU

Period of time 2013 till now

Rank/degree Associated professor

Publications

Article

Dunkl symplectic algebra in generalized Calogero models

Tigran Hakobyan

Journal of Physics A: Mathematical and Theoretical 2025 065201

Article

Two-dimensional topological paramagnets protected by Z3 symmetry: Properties of the boundary Hamiltonian

Hrant Topchyan, Vasilii Iugov, Mkhitar Mirumyan, Tigran Hakobyan, Tigran A. Sedrakyan,

Ara G. Sedrakyan

SciPost Physics 2025 068

Article

Parafermionic representation of Potts-based cluster chain

Tigran Hakobyan, Raffi Varosyan

Physica B: Condensed Matter 2025 417297

Article

Dunkl Symplectic Algebra in Generalized Calogero Model with Reflection Group Symmetry

Tigran Hakobyan

Bulgarian Journal of Physics 2025 108-113

Article

Simple Extension of Kitaev Chain for Z3 Parafermions [Простое обобщение цепочки Китаева для Z3 парафермионов]

Hakobyan T.S., Varosyan R.H., Harutunyan G.H.

Известия НАН РА. Физика (Journal of Contemporary Physics (Armenian Academy of Sciences) 2024

28-35

Article

Sectorial Ground-State Nondegeneracy in Majorana Chains with Interaction and Orthogonal Symmetry [Невырожденность секториальных основных состояний в майорановских цепочках с взаимодействием и ортогональной симметрией]

T. S. Hakobyan

Article

Z_3 and $(\times Z_3)^3$ symmetry protected topological paramagnets.

Hrant Topchyan, Vasilii Iugov, Mkhitar Mirumyan, Shahane Khachatryan, Tigran Hakobyan,

Tigran Sedrakyan

Journal of High Energy Physics 2023 35

Article

Algebra of Dunkl Laplace-Runge-Lenz vector

Misha Feigin, Tigran Hakobyan

Letters in Mathematical Physics 2022 59, 1-29

Article

Superintegrable systems related to truncated Calogero model

T. Hakobyan, S. Vardanyan

Proceedings of Science 2021 006/10

Article

Lowest energy states of an $O(N)$ fermionic chain

Tigran Hakobyan

Physical Review B 2020 085128(1-18)

Article

Symmetry Algebra of Dynamical and Discrete Calogero Models

Tigran Hakobyan, Seda Vardanyan

Physics of Particles and Nuclei Letters 2020 734-737

Article

Symmetries of the generalized Calogero model and the Polychronakos-Frahm chain

Tigran Hakobyan

Physical Review D 2019 105011(1-7)

Article

Myers-Perry Conformal Mechanics

H. Demirchian, T. Hakobyan, A. Nersessian, M.M. Shekh-Jabbari

Physics of Particles and Nuclei 2018 860-864

Article

Integrability of Calogero-Coulomb Problems

Tigran Hakobyan, Armen Nersessian

Physics of Particles and Nuclei Letters 2017 331-335

<http://link.springer.com/journal/11497>

Article

Constants of Motion in Deformed Oscillator and Coulomb Systems

Tigran Hakobyan, Armen Nersessian, Hovhannes Shmavonyan

Physics of Particles and Nuclei Letters 2017 400-402

<http://link.springer.com/journal/11497>

Article

Symmetries in superintegrable deformations of oscillator and Coulomb systems: Holomorphic factorization

Tigran Hakobyan, Armen Nersessian

Physical Review D 2017 025014

<http://journals.aps.org/prd/>

Article

Two-center Coulomb Problem with Calogero Interaction

Tigran Hakobyan, Armen Nersessian

Physics of Atomic Nuclei 2017 383-388

<http://link.springer.com/journal/11450>

Article

Lobachevsky geometry in TTW and PW systems

Tigran Hakobyan, Armen Nersessian, Hovhannes Shmavonyan

Physics of Atomic Nuclei 2017 591-597

<http://link.springer.com/journal/11450>

Article

Near horizon extremal Myers-Perry black holes and integrability of associated conformal mechanics

Tigran Hakobyan, Armen Nersessian, M.M.Sheikh-Jabbari

Physics Letters B 2017 586-591

<http://www.journals.elsevier.com/physics-letters-b>

Article

CALOGERO MODEL AND ITS GENERALIZATION

T.Hakobyan, A.Nersessian

Вестник Российско-Армянского Университета: Физико-математические и естественные науки 2017 91-95

<http://science.rau.am/rus/50/701>

Article

Spherical Calogero model with oscillator/Coulomb potential: Classical case

Francisco Correa, Tigran Hakobyan, Olaf Lechtenfeld, Armen Nersessian

Physical Review D 2016 125008,9

<http://journals.aps.org/prd/>

Article

Spherical Calogero model with oscillator/Coulomb potential: Quantum case

Francisco Correa, Tigran Hakobyan, Olaf Lechtenfeld, Armen Nersessian

Physical Review D 2016 125009

<http://journals.aps.org/prd/>

Article

Integrability and separation of variables in Calogero-Coulomb-Stark and two-center Calogero-Coulomb systems

Tigran Hakobyan, Armen Nersessian

Physical Review D 2016 045025,14

<http://journals.aps.org/prd/>

Article

Coulomb systems with Calogero Interaction

Tigran Hakobyan, Armen Nersessian

Proceedings of the YSU A. Physical and Mathematical Sciences 2016 15-19

<http://www.ysu.am/science/en/journals>

Article

On Dunkl angular momenta algebra

Misha Feigin, Tigran Hakobyan

Journal of High Energy Physics 2015 107,22

<http://www.springer.com/physics/particle+and+nuclear+physics/journal/13130>

Article

Lowest-energy states in parity-transformation eigenspaces of $SO(N)$ spin chain

Tigran Hakobyan

Nuclear Physics B 2015 248-258

<http://www.sciencedirect.com/science/journal/05503213>

Article

Runge-Lenz vector in Calogero-Coulomb problem

Tigran Hakobyan, Armen Nersessian

Physical Review A 2015 22111

<http://journals.aps.org/prd/>

Article

Superintegrability of generalized Calogero models with oscillator or Coulomb potential

Tigran Hakobyan, Olaf Lechtenfeld, Armen Nersessian

Physical Review D 2014 101701(R),6

<http://journals.aps.org/prd/>

Article

The structure of invariants in conformal mechanics

Tigran Hakobyan, David Karakhanyan, Olaf Lechtenfeld

Nuclear Physics B 2014 399-420

<http://www.sciencedirect.com/science/journal/05503213>

Article

The spherical sector of the Calogero model as a reduced matrix model

Tigran Hakobyan, Armen Nersessian, Francisco Correa, Olaf Lechtenfeld

Nuclear Physics B 2012 250-266

<http://www.journals.elsevier.com/nuclear-physics-b/>

Article

Integrable generalizations of oscillator and Coulomb systems via action-angle variables

Tigran Hakobyan, Armen Nersessian, Armen Saghatelian, Vahagn Yeghikyan, Olaf Lechtenfeld

Physics Letters A 2012 679-686

<http://www.journals.elsevier.com/physics-letters-a>

Article

Action-angle variables and novel superintegrable systems

Armen Nersessian, Tigran Hakobyan, Armen Saghatelian, Vahagn Yeghikyan, Olaf Lechtenfeld

Physics of Particles and Nuclei 2012 577-582

<http://www.springer.com/physics/particle+and+nuclear+physics/journal/11496>

Manual

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S.U. Հակոբյան

2012 42

Article

Invariants of the spherical sector in conformal mechanics

Tigran Hakobyan, Armen Nersessian, Armen Saghatelian, Olaf Lechtenfeld

Journal of Physics A-Mathematical and Theoretical 2011 055205, 14 pages

<http://iopscience.iop.org/journal/1751-8121>

Article

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Tigran Hakobyan, Armen Nersessian, Armen Saghatelian, Olaf Lechtenfeld

Journal of Physics A-Mathematical and Theoretical 2011 055205, 14

<http://iopscience.iop.org/journal/1751-8121>

Article

Ordering of Energy Levels for Extended SU(N) Hubbard Chain

Tigran Hakobyan

Symmetry Integrability and Geometry-Methods and Applications 2010 024,13

<http://www.emis.de/journals/SIGMA/>

Article

Hidden symmetries of integrable conformal mechanical systems

Tigran Hakobyan, Armen Nersessian, Sergey Krivonos, Olaf Lechtenfeld

Physics Letters A 2010 801-806

<http://www.journals.elsevier.com/physics-letters-a>

Article

Energy-level ordering for frustrated spin ladder models

T. Hakobyan

Physics of Atomic Nuclei 2010 339-344

Article

Lobachevsky geometry of (super)conformal mechanics

Tigran Hakobyan, Armen Nersessian

Physics Letters A 2009 1001-1004

<http://www.journals.elsevier.com/physics-letters-a>

Article

The cuboctahedric Higgs oscillator from the rational Calogero model

Tigran Hakobyan, Armen Nersessian, Vahagn Yeghikyan

Journal of Physics A: Mathematical and Theoretical 2009 205206, 11

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Cuboctahedric Higgs oscillator from the Calogero model

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<http://www.journals.elsevier.com/physics-letters-a>

Article

Antiferromagnetic ordering of energy levels for a spin ladder with four-spin cyclic exchange: Generalization of the Lieb-Mattis theorem

Tigran Hakobyan

Physical Review B 2008 012407,4

<http://journals.aps.org/prb/>

Article

Energy-level ordering and ground-state quantum numbers for a frustrated two-leg spin-1 /2 ladder

Tigran Hakobyan

Physical Review B 2007 214421,14

<http://journals.aps.org/prb/>

Article

The ordering of energy levels for su(n) symmetric antiferromagnetic chains

Tigran Hakobyan

Nuclear Physics B 2004 575-594

<http://www.journals.elsevier.com/nuclear-physics-b/>

Article

The possibility of gapless excitations in antiferromagnetic spin chains with long-range interactions

T. Hakobyan

Journal of Physics A: Mathematical and Theoretical 2003 L599-L604

<http://iopscience.iop.org/journal/0305-4470>

Article

Phase diagram of the frustrated two-leg ladder model

T. Hakobyan, J. H. Hetherington, M. Roger

Physical Review B 2001 144433,17

<http://journals.aps.org/prb/>

Article

Delocalization of states in two-component superlattices with correlated disorder

T. Hakobyan, D. Sedrakyan, A. Sedrakyan, I. Gomez, F. Dominguez-Adame

Physical Review B 2000 11432-11436

<http://journals.aps.org/prb/>

Article

Bethe Ansatz and thermodynamic limit of affine quantum group invariant extensions of the t-J model

T. Hakobyan, A. Avakyan, A. Sedrakyan, J. Ambjorn

Journal of Mathematical Physics 1999 5687-5701

<http://scitation.aip.org/content/aip/journal/jmp>

Article

The European Physical Journal B

T. Hakobyan, V. Harutunyan, V. Gevorkyan, V. Makhov

EUROPEAN PHYSICAL JOURNAL B 1999 31-33

<http://epjb.epj.org/>

Article

Luminescence Excitation and Influence of Radiation on the Stimulated Processes in Corundum Crystals

T. Hakobyan, V. Harutyunyan, E. Hakhverdyan, V. Gevorkyan, V. Grigoryan, V. Makhov

PHYSICA STATUS SOLIDI A-APPLICATIONS AND MATERIALS SCIENCE 1999 623-629

[http://onlinelibrary.wiley.com/journal/10.1002/\(ISSN\)1862-6319/homepage/2231_ed...](http://onlinelibrary.wiley.com/journal/10.1002/(ISSN)1862-6319/homepage/2231_ed...)

Article

A family of affine quantum group invariant integrable extensions of the Hubbard Hamiltonian

A. Avakyan, T. Hakobyan, A. Sedrakyan

Nuclear Physics B 1997 633-652

<http://www.sciencedirect.com/science/journal/05503213>

Article

Integrable Extensions of Hubbard Hamiltonian

T. Hakobyan, A. Sedrakyan, A. Avakyan

International Journal of Modern Physics B 1997 3207-3222

Article

Spin chain Hamiltonians with affine U_q symmetry

T. Hakobyan, A. Sedrakyan

Modern Physics Letters B 1996 250-254

<http://www.worldscientific.com/worldscinet/mplb>

Article

On the universal R-matrix of U_q(sl₂) at roots of unity

T. Hakobyan, A. Sedrakyan

COMMUNICATIONS IN MATHEMATICAL PHYSICS 1996 157-171

<http://link.springer.com/journal/220>

Article

Lattice electrons in constant magnetic field: Bethe like ansatz

T. Hakobyan, A. Sedrakyan

Modern Physics Letters A 1995 495-501

<http://www.worldscientific.com/worldscinet/mpla>

Article

Universal R matrix of $Uqsl(n,m)$ quantum superalgebras

T. Hakobyan, A. Sedrakyan

Journal of Mathematical Physics 1994 2552-2559

<http://scitation.aip.org/content/aip/journal/jmp>

Article

R-matrices for $Uqosp(1, 2)$ for highest weight representations of $U qosp(1, 2)$ for general q and q an odd root of unity

T. Hakobyan, A. Sedrakyan

Modern Physics Letters B 1993 266-271

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Article

R-matrices for highest weight representations of $slq(2,C)$ at roots of unity

T. Hakobyan, A. Sedrakyan

Modern Physics Letters B 1993 27-32

<http://www.worldscientific.com/worldscinet/mplb>

Article

Some new spinor representations of quantum groups $Bq(n)$, $Cq(n)$, $Gq(2)$

T. Hakobyan, A. Sedrakyan

Journal of Mathematical Physics 1993 2554-2560

<http://scitation.aip.org/content/aip/journal/jmp>
