

# Тигран Степанович Акопян

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## Научно-исследовательский институт физики

Տեսական ֆիզիկայի լաբորատորիա

Ведущий научный сотрудник

## 🎓 Образование

Учреждение	ЕГУ
Факультет	Физический факультет, кафедра теоретической физики
Дата	1989 - 1992
Степень / Звание	Аспирант

Учреждение	ЕГУ
Факультет	Физический факультет, кафедра теоретической физики
Дата	1982 - 1989
Степень / Звание	Магистр

## 🎓 Ученое звание/Ученая степень

Учреждение	ЕГУ
Дата	2013
Степень / Звание	Доктор наук
Специальность	Физико-математические науки
Научная тема	Точные методы в одномерных и квази-одномерных системах

Учреждение	Ереванский Институт Физики
Дата	1996
Степень / Звание	Кандидат наук
Специальность	Физико-математические науки
Научный руководитель	Ara Sedrakyan
Научная тема	R-матрицы квантовых групп

## 🌐 Знание языков

Հայերեն English Русский Français

## 📁 Опыт работы

Учреждение	Национальная научная лаборатория имени А. Алиханяна (Ереванский физический институт)
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Период времени 2022 до настоящего времени  
Звание/степень ведущий научный сотрудник

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Учреждение ЕГУ  
Период времени 2021 до настоящего времени  
Звание/степень ведущий научный сотрудник

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Учреждение кафедра теоретической физики, ЕГУ  
Период времени 2013 до настоящего времени  
Звание/степень доцент

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## Публикации

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Статья

### **Dunkl symplectic algebra in generalized Calogero models**

Tigran Hakobyan

Journal of Physics A: Mathematical and Theoretical 2025 065201

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Статья

### **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

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Статья

### **Parafermionic representation of Potts-based cluster chain**

Tigran Hakobyan, Raffi Varosyan

Physica B: Condensed Matter 2025 417297

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Статья

### **Dunkl Symplectic Algebra in Generalized Calogero Model with Reflection Group Symmetry**

Tigran Hakobyan

Bulgarian Journal of Physics 2025 108-113

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Статья

### **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

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Статья

### **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

*Статья*

**$Z_3$  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

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*Статья*

**Algebra of Dunkl Laplace-Runge-Lenz vector**

Misha Feigin, Tigran Hakobyan

Letters in Mathematical Physics 2022 59, 1-29

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*Статья*

**Superintegrable systems related to truncated Calogero model**

T. Hakobyan, S. Vardanyan

Proceedings of Science 2021 006/10

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*Статья*

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

Tigran Hakobyan

Physical Review B 2020 085128(1-18)

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*Статья*

**Symmetry Algebra of Dynamical and Discrete Calogero Models**

Tigran Hakobyan, Seda Vardanyan

Physics of Particles and Nuclei Letters 2020 734-737

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*Статья*

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

Tigran Hakobyan

Physical Review D 2019 105011(1-7)

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*Статья*

**Myers-Perry Conformal Mechanics**

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

Physics of Particles and Nuclei 2018 860-864

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*Статья*

**Integrability of Calogero-Coulomb Problems**

Tigran Hakobyan, Armen Nersessian

Physics of Particles and Nuclei Letters 2017 331-335

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

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*Статья*

**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>

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Статья

**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/>

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Статья

**Two-center Coulomb Problem with Calogero Interaction**

Tigran Hakobyan, Armen Nersessian

Physics of Atomic Nuclei 2017 383-388

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Статья

**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>

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Статья

**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

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Статья

**CALOGERO MODEL AND ITS GENERALIZATION**

T.Hakobyan, A.Nersessian

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

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**Spherical Calogero model with oscillator/Coulomb potential: Classical case**

Francisco Correa, Tigran Hakobyan, Olaf Lechtenfeld, Armen Nersessian

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**Spherical Calogero model with oscillator/Coulomb potential: Quantum case**

Francisco Correa, Tigran Hakobyan, Olaf Lechtenfeld, Armen Nersessian

Physical Review D 2016 125009

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**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/>

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**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>

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*Статья*

**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>

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*Статья*

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

Tigran Hakobyan

Nuclear Physics B 2015 248-258

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**Runge-Lenz vector in Calogero-Coulomb problem**

Tigran Hakobyan, Armen Nersessian

Physical Review A 2015 22111

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**Superintegrability of generalized Calogero models with oscillator or Coulomb potential**

Tigran Hakobyan, Olaf Lechtenfeld, Armen Nersessian

Physical Review D 2014 101701(R),6

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**The structure of invariants in conformal mechanics**

Tigran Hakobyan, David Karakhanyan, Olaf Lechtenfeld

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**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

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

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

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Образовательный Руководство

**Չուզանի են ծրագրավորում MPI փաթեթի միջոցով**

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**Invariants of the spherical sector in conformal mechanics**

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

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**Hidden symmetries of integrable conformal mechanical systems**

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**Energy-level ordering for frustrated spin ladder models**

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**Lobachevsky geometry of (super)conformal mechanics**

Tigran Hakobyan, Armen Nersessian

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**The cuboctahedric Higgs oscillator from the rational Calogero model**

Tigran Hakobyan, Armen Nersessian, Vahagn Yeghikyan

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**Cuboctahedric Higgs oscillator from the Calogero model**

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**Lobachevsky geometry of (super)conformal mechanics**

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*Статья*

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

Tigran Hakobyan

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*Статья*

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

Tigran Hakobyan

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*Статья*

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

Tigran Hakobyan

Nuclear Physics B 2004 575-594

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*Статья*

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

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*Статья*

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*Статья*

**Delocalization of states in two-component superlattices with correlated disorder**

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

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*Статья*

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

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*Статья*

**The European Physical Journal B**

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

EUROPEAN PHYSICAL JOURNAL B 1999 31-33

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*Статья*

**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

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*Статья*

**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>

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*Статья*

**Integrable Extensions of Hubbard Hamiltonian**

T. Hakobyan, A. Sedrakyan, A. Avakyan

International Journal of Modern Physics B 1997 3207-3222

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*Статья*

**Spin chain Hamiltonians with affine U<sub>q</sub> symmetry**

T. Hakobyan, A. Sedrakyan

Modern Physics Letters B 1996 250-254

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*Статья*

**On the universal R-matrix of U<sub>q</sub> at roots of unity**

T. Hakobyan, A. Sedrakyan

COMMUNICATIONS IN MATHEMATICAL PHYSICS 1996 157-171

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

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*Статья*

**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>

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*Статья*

**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>

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*Статья*

**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

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

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*Статья*

**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>

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*Статья*

**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>

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