

Vadim Robert Ohanyan

Research Institute of Physics

Laboratory of Theoretical Physics

Senior researcher

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🎓 Education

Institution	Yerevan State University
Faculty	Faculty of Physics, chair of Theoretical Physics
Date	1998 - 2001
Degree name	PhD student

Institution	Yerevan State University
Faculty	Faculty of Physics, chair of Theoretical Physics
Date	1993 - 1998
Degree name	Qualified specialist

🎓 Scientific Rank/degree

Institution	Yerevan Physics Institute
Date	2003
Degree name	Candidate
Specialty	Physico-mathematical sciences
Scientific Supervisor	Nerses Ananikian
Research Topic	Phase transitions and Magnetization Plateaus in some spin systems, recursive lattices, one-dimensional chains and non-linear sigma-model

🌐 Language skills

Русский English Deutsch Українська

🔬 Scientific interests

- Quantum Magnetism, Statistical physics, Integrable models
-

🏆 State awards and honorary titles

2010 RA President Prize,

📖 Publications

Article

Molecular nanomagnet $\text{Cu}^{2+}\text{Ni}^{2+}\text{Cu}^{2+}$ as a resource for bipartite and tripartite quantum entanglement and coherence

Azadeh Ghannadan, Hamid Arian Zad, Saeed Haddadi, Jozef Strečka, Zhirayr Adamyan, Vadim Ohanyan

Physical Review A 2025 022605

Article

Tripartite entanglement in mixed-spin triangle trimmer

V. Ohanyan, Zh. Adamyan

Condensed Matter Physics 2025 33703

Article

Quantum entanglement in a mixed-spin trimer: Effects of a magnetic field and heterogeneous g factors

Vadim Ohanyan, Zhirayr Adamyan

Physical Review E 2024 034131

Article

Magnetization plateaus and enhanced magnetocaloric effect of a spin-1/2 Ising-Heisenberg and Heisenberg double sawtooth ladder with four-spin interaction

Hamid Arian Zad, Vadim Ohanyan, Azam Zoshki, Jozef Strečka

Physical Review E 2023 044132 (1-12)

Article

Electric field driven flat bands: Enhanced magnetoelectric and electrocaloric effects in frustrated quantum magnets

Vadim Ohanyan, Johannes Richter, Joerg Schuleburg, Juergen Schanck

Physical Review B 2022 054420

Article

Magnetic and magnetoelectric properties of AFeF_5 ($\text{A} = \text{Ca}, \text{Sr}$) spin-chain compounds

N. V. Ter-Oganessian, S. A. Guda, V. P. Sakhnenko, V. Ohanyan

Journal of Magnetism and Magnetic Materials 2020 165720(1-6)

Article

Spin-1/2 XX chain in a transverse field with regularly alternating g factors: Static and dynamic properties

Taras Krokhmal'skii, Taras Verkholyak, Ostap Baran, Vadim Ohanyan, Oleg Derzhko

Physical Review B 2020 144403

Article

Influence of XY anisotropy on a magnetoelectric effect in spin-1/2 XY chain in a transverse magnetic field

V. Ohanyan

Condensed Matter Physics 2020 43704

Article

Quantum Entanglement in Spin Dimers: Effects of a Magnetic Field and Heterogeneous g-Factors

Z. A. Adamyan, S. A. Muradyan, V. R. Ohanyan

Article

Non-conserved magnetization operator and ‘fire-and-ice’ ground states in the Ising-Heisenberg diamond chain

Vadim Ohanyan, Jordana Torrico, Onofre Rojas

Journal of Magnetism and Magnetic Materials 2018 85-96

Article

Spin-1/2 XY -chain magnetoelectric: Effect of zigzag geometry

Vadim Ohanyan, Ostap Baran, Taras Verkholyak

Physical Review B 2018 064415(1-13)

Article

Absence of actual plateaus in zero-temperature magnetization curves of quantum spin clusters and chains

Vadim Ohanyan, Onofre Rojas, Jozef Strecka, Stefano Bellucci

Physical Review B 2015 214423-12

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

Article

Magnetism-driven ferroelectricity in spin-1/2 XY chains

Vadim Ohanyan, Oleg Menchyshyn, Taras Verkholyak, Taras Krokhmal'skii, Oleg Derzhko

Physical Review B 2015 184427 - 7

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

Article

Magnetization non-rational quasi-plateau and spatially modulated spin order in the model of the single-chain magnet,

$[\text{CuL}_2\text{Dy}]\{\text{Mo}(\text{CN})_8\} \cdot 2\text{CH}_3\text{CN} \cdot \text{mbo}$
Vadim Ohanyan, Stefano Bellucci, Onofre Rojas

Europhysics Letters 2014 47012

<http://www.epletters.net/>

Article

Landau problem on the ellipsoid, hyperboloid and paraboloid of revolution

Vadim Ohanyan, Armen Nersessian, Eva Gevorgyan, Evgeniy Tolkachev

Modern Physics Letters A 2014 1450148(1-15)

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

Article

Correlation functions in one-dimensional spin lattices with Ising and Heisenberg bonds

Vadim Ohanyan, Stefano Bellucci

EUROPEAN PHYSICAL JOURNAL B 2013 446

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

Article

Exact description of the magnetoelectric effect in the spin-1/2 XXZ-chain with Dzyaloshinskii-Moriya interaction

Michael Brockmann, Andreas Klumper, Vadim Ohanyan

Physical Review B 2013 054407

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

Article

Magnetocaloric effect in spin-1/2 XX chains with three-spin interactions

M. Topilko, T. Krohmal'skii, O. Derzhko, V. Ohanyan

EUROPEAN PHYSICAL JOURNAL B 2012 278

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

Article

Magneto-thermal properties of the Heisenberg-Ising orthogonal-dimer chain with triangular XXZ-clusters

Vadim Ohanyan, Andreas Honecker

Physical Review B 2012 054412(1-17)

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

Article

Exactly solvable mixed-spin Ising-Heisenberg diamond chain with biquadratic interactions and single-ion anisotropy

Onofre Rojas, S. M. de Souza, Vadim Ohanyan, Martiros Khurshudyan

Physical Review B 2011 094430

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

Article

Lattice distortions in sawtooth chain with Heisenberg and Ising bonds

S. Bellucci, V. Ohanyan

EUROPEAN PHYSICAL JOURNAL B 2010 531-541

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

Article

Phase diagrams of the Ising-Heisenberg chain with $S=1/2$ triangular XXZ clusters

Vadim Ohanyan

Physics of Atomic Nuclei 2010 494-498

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

Article

Exact calculation of the magnetocaloric effect in the spin-1/2 XXZ chain

Christian Trippe, Andreas Honecker, Andreas Klumper, Vadim Ohanyan

Physical Review B 2010 054402

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

Article

Antiferromagnetic sawtooth chain with Heisenberg and Ising bonds

Vadim Ohanyan

Condensed Matter Physics 2009 343-351

<http://www.icmp.lviv.ua/journal/>

Article

Exactly solvable Ising-Heisenberg chain with triangular XXZ-Heisenberg plaquettes

Diana Antonosyan, Stefano Bellucci, Vadim Ohanyan

Physical Review B 2009 014432

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

Article

Two--center quantum MICZ--Kepler system and Zeeman effect in the charge-dyon system

Stefano Bellucci, Vadim Ohanyan

Physics Letters A 2008 5765-5772

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

Article

Multi-center MICZ-Kepler systems

Armen Nersessian, Vadim Ohanyan

Theoretical and Mathematical Physics 2008 618

<http://link.springer.com/journal/11232>

Article

N=4 Supersymmetric MICZ-Kepler systems on S^3

Stefano Bellucci, Sergey Krivonos, Vadim Ohanyan

Physical Review D 2007 105023

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

Article

Multi-center MICZ-Kepler system, supersymmetry and integrability,

Sergey Krivonos, Armen Nersessian, Vadim Ohanyan

Physical Review D 2007 085002

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

Article

An exact solution on the ferromagnetic Face-Cubic spin model on a Bethe lattice

Vadim Ohanyan, Nerses Ananikian, L.N. Ananikian

Physica A: Statistical Mechanics and its Applications 2007 501-513

<https://www.journals.elsevier.com/physica-a-statistical-mechanics-and-its-appli...>

Article

Magnetization plateaus in the ferromagnetic--ferromagnetic--antiferromagnetic Ising chain,

Vadim Ohanyan, Nerses Ananikian

Physics Letters A 2003 76-84

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

Article

The multisite interaction Ising model approach to Solid ^3He system on the triangular lattice,

Tigran Arakelyan, Vadim Ohanyan, Lev Ananikian, Nerses Ananikian, Michael roger

Physical Review B 2003 024424

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

Article

Local WZW-theory on a Manifold with Boundary

Samvel Apikyan, Vadim Ohanyan

Modern Physics Letters A 1998 3009-3015

Conference

Interplay of Katsura-Nagaosa-Balatsky mechanism and zigzag geometry of lattice bonds: exactly solvable model of the $S = 1/2$ XY magnetoelectric

OHANYAN Vadim, BARAN Ostep, VERKHOLYAK Taras

Conference

Spin-1/2 XY Model of a Magnetoelectric on Zigzag Ladder: Exact Results

V. Ohanyan, O. Baran, T. Verkholyak

Conference

Non-conserved magnetization, negative g-factors and 'fire-and-ice' spin configurations

V. Ohanyan, J. Strečka, O. Rojas, J. Torrico, S. Bellucci

Conference

Electric field driven flat bands: Enhanced magnetoelectric and electrocaloric effects in frustrated quantum magnets

Johannes Richter, Vadim Ohanyan, Joerg Schulenburg, Juergen Schnack
