

# Vadim Robert Ohanyan

## Research Institute of Physics

Laboratory of Theoretical Physics

Senior researcher

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## Education

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

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

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## Scientific Rank/degree

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

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## Language skills

Русский English Deutsch Українська

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## Publications

*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 Strecka

Physical Review E 2023 044132 (1-12)

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*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

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*Article*

**Magnetic and magnetoelectric properties of  $AFeF_5$  ( $A = Ca, Sr$ ) 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)

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*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

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*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

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*Article*

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

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

Journal of Contemporary Physics (Armenian Academy of Sciences) 2020 292–298

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*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

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*Article*

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

Vadim Ohanyan, Ostap Baran, Taras Verkholyak

Physical Review B 2018 064415(1-13)

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*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/>

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*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/>

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Article

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

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

EPL (Europhysics Letters) 2014 47012

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

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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>

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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/>

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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/>

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Article

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

M. Topilko, T. Krohkmalskii, O. Derzhko, V. Ohanyan

EUROPEAN PHYSICAL JOURNAL B 2012 278

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

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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/>

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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/>

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Article

**Lattice distortions in sawtooth chain with Heisenberg and Ising bonds**

S. Bellucci, V. Ohanyan

*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>

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*Article*

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

Christian Trippe, Andreas Honekcer, Andreas Klumper, Vadim Ohanyan

Physical Review B 2010 054402

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

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*Article*

**Antiferromagnetic sawtooth chain with Heisenberg and Ising bonds**

Vadim Ohanyan

Condensed Matter Physics 2009 343-351

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

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*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/>

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*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>

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*Article*

**Multi-center MICZ-Kepler systems**

Armen Nersessian, Vadim Ohanyan

Theoretical and Mathematical Physics 2008 618

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

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*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/>

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*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/>

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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...>

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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>

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Article

**The multisite interaction Ising model approach to Solid  $^3\text{He}$  system on the triangular lattice,**

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

Physical Review B 2003 024424

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

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Article

**Local WZW-theory on a Manifold with Boundary**

Samvel Apikyan, Vadim Ohanyan

Modern Physics Letters A 1998 3009-3015

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

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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 Ostap, VERKHOLYAK Taras

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Conference

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

V. Ohanyan, O. Baran, T. Verkholyak

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Conference

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

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

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Conference

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

Johannes Richter, Vadim Ohanyan, Joerg Schulenburg, Juergen Schnack

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