Curriculum Vitae

Personal

Name:	**Vahagn Yeghikyan**
Date and place of birth:	June 10, 1985, Yerevan, Armenia
Citizenship:	Armenia
Marital status:	single
Address (home):	Aratshessian st. 39, apt. 17, Yerevan, 00039, Armenia
Mailing address:	Dep. of Theoretical Physics, Alex Manoogian St., 1, Yerevan 0025, Armenia,
Permanent position:	Researcher, Yerevan State University, Laboratory of Theoretical Physics, Alex Manoogian St., 1, Yerevan 0025, Armenia
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E-mails:	vahagn.yeghikyan@ysu.am, vahagn.yeghikyan@gmail.com
Languages spoken :	Armenian, Russian, English, Italian

Education and degrees

2011-2013	Postdoctoral fellow, LNF(INFN), Frascati, Italy
since 2011	Researcher, Yerevan State University, Department of Theoretical Physics
2010	PhD, Yerevan Physics Institute **Thesis**:"Hopf maps and Integrable Systems" Adviser: Professor A. Nersessian
2008-2010	PhD student, Yerevan State University, Department of Theoretical Physics
2008	MSc, Yerevan State University **Thesis**:"Anisotropic inharmonic Higgs oscillator and related (MICZ)Kepler-Like Systems" Adviser: Professor A. Nersessian
2006 - 2008	master student, Department of Theoretical Physics, Yerevan State University
2006	BSc, Yerevan State University **Thesis**:"Optical transitions and Stark effect in the charge-dyon bound system" Adviser: Professor H. Sarkisyan
2002 - 2006	undergraduate student, Yerevan State University, Faculty of Physics, Yerevan.

Present and past interests of research

- Universality of the Lie (super)algebras
- Constrained systems and higher-derivative Lagrangians
- Supersymmetric quantum mechanics
- Integrable systems of classical and quantum mechanics in external gauge fields

Computer Skills

- Programming Languages
  C/C++/C#, Perl, PHP, PL/SQL(Oracle), Mathematica

- Databases
  MySQL, Oracle
- Operating Systems
  Linux, Windows
- Other
  LaTeX, HTML , Javascript , CSS

Awards, Prizes

- President Prize in Physics for 2010, 02.05.201
- Second prize in the school International Astronomy Olympiad (Crimea, Ukraine 2001)
- Certificate of participation in the school International Physics Olympiad (Bali, Indonesia 2002)
- Over 30 prizes in the local physics, astronomy, mathematics and chemistry olympiads

Grants

- SCS 13-1C114
  Novel integrable systems in quantum mechanics
- Volkswagen Foundation I/84 496 (2009),
  Algebraic and geometric properties of (conformal) mechanics with extended supersymmetry,
- ANSEF - Armenian National Science and Education Foundation

  Geometric quantum mechanical models for nanostructures, PS1730(2009)
- CRDF - U.S. Civilian Research and Development Foundation & NFSAT - National Foundation for Science and Advanced Technology

  Algebraic and geometric studies for condensed matter physics, UC 06/07 (2007)

  Quantum mechanical models for the higher-dimensional Hall effect, ARP1-3228-YE-04 (2005)

Conferences, Workshops, Schools

- Problems of (Supersymmetric) Integrable Systems, Armenia-Dubna Workshop, 24-26 December 2013, Dubna, Russia
- Quantum Aspects of Black Holes and its Recent Progress, 24-26 September 2013 , Yerevan, Armenia
- Supersymmetries and Quantum Symmetries - SQS'2013, July 26-August 4, 2013, Dubna, Russia
- Mathematica School in Theoretical Physics: Advanced Topics in Conformal Field Theory, 11-16 March 2013, ICTP, Trieste, Italy
- Advanced lections on String field theory, LACES 2011, 18.11-16.12.2011, Galileo Galilei Institute of Theoretical Physics, Arcetri, Italy
- Black Objects in Supergravity School, BOSS2011 9 - 13 May 2011, INFN-LNF, Frascati, Italy
- Workshop on Supersymmetry in Integrable Systems, 01-04.08.2011, Hannover, Germany
- Int. Workshop on *Supersymmetry in Integrable Systems*, 24-28.08.2010, Yerevan, Armenia
- Int. Workshop on *Symmetry Methods in Physics*, 16-22.08.2010, Tsakhkadzor, Armenia
- XXVII Colloquium on *Group-theoretical methods in Physics*, 13-19.08.2008, Yerevan, Armenia
- International Advanced School on Theoretical Physics, Dubna, Russia 26.01-06.02.2008
- Int. Workshop on *"Integrable systems: From Strings to Conformal Field Theories"*, Nor Amberd(Armenia)-Tbilisi(Georgia), 1-4.10.2007
- XVI Colloquium on *Integrable Systems and Quantum Symmetries*, Prague, Czech Rep. 14-16.06.2007
- Advanced School on *Integrable systems and Quantum Symmetries*, Prague, Czech Rep., 7-13.06.2007

List of publications

1. **The Coulomb problem on a 3-sphere and Heun polynomials**
   S. Bellucci, V. Yeghikyan
   J. Math. Phys. **54**, 082103 (2013), [arXiv:1302.0798]

2. **Isospin particle systems on quaternionic projective spaces**
   S. Bellucci, S. Krivonos, A. Nersessian, V. Yeghikyan
   Phys. Rev. **D** 87, 045005 (2013)
   [arXiv:1212.1663]

3. **Action-angle variables and novel superintegrable systems**
   T. Hakobyan, O. Lechtenfeld, A. Nersessian, A. Saghatelian and V. Yeghikyan
   Physics of Particles and Nuclei, **43** (2012) 577-582
   Proc. of Workshop on Supersymmetries and Quantum Symmetries, Dubna, 18-23 July 2011

4. **Action-angle variables for the particle near extreme Kerr throat**
   S. Bellucci, A. Nersessian, V. Yeghikyan
   Mod.Phys.Lett. **A 27**(2012) 1250191 [arXiv:1112.4713]

5. **Integrable generalizations of oscillator and Coulomb systems via action-angle variables**
   T. Hakobyan, O. Lechtenfeld, A. Nersessian, A. Saghatelian, V. Yeghikyan
   Phys. Lett. **A376** (2012) 679686, [arXiv:1108.5189]

6. **Reductions related with Hopf maps**
   V. Yeghikyan
   Phys.Atom.Nucl. **75**, pp.1487-1491, [arXiv:1101.4299](2012)
   Proc.of XV Int.Conference on Symmetry Methods in Physics, Tsakhkadzor, Armenia, 16-22 August, 2010

7. **Hopf maps and Wigner's little groups**
   R. Mkrtchyan, A. Nersessian and V. Yeghikyan
   Mod.Phys.Lett.**A26**:1393-1405,2011, [arXiv:1008:2589][hep-th]

8. **Quantum ring models and action-angle variables**
   S. Bellucci, A. Nersessian, A. Saghatelian and V. Yeghikyan
   J. Comp. Theor. Nanoscience **8** No.4. (2011) 769-775 [arXiv:1008.3865] [cond-mat.mtrl-sci].

9. **Action-angle variables for dihedral systems on the circle**
   O. Lechtenfeld, A. Nersessian and V. Yeghikyan
   Phys. Lett. **A374**(2010) 46474652 [arXiv:1005:0464][hep-th]

10. **Normed division $*$-algebras and Hopf fibrations**
    V. Yeghikyan,
    Mathematics in Higher School **4**, No.1, 14-21 (2010) (in Armenian)

11. **Multi-center spherical oscillator and Calogero model**
    V. Yeghikyan,
    Phys. Atom. Nucl. **73** No.3, 579-582 (2010)
    Proc. of XXVII Colloquim on Group-theoretical methods in Physics, 11-17.08.2008, Yerevan

12. **Second Hopf map and $5d$ Yang-Coulomb system on speudosphere and sphere**
    S. Bellucci, F. Toppan and V. Yeghikyan
    J. Phys. **A43** 045205 (2010) [arXiv:0905.3461][hep-th]

13. **Second Hopf map and supersymmetric mechanics with Yang monopole**
    M. Gonzales, Zh. Kuznetsova, A. Nersessian, F. Toppan and V. Yeghikyan
    Phys.Rev. **D80**(2009) 025022[arXiv:0902.2682]

14. **"Cuboctahedric Higgs oscillator from the Calogero model"**
    T. Hakobian, A. Nersessian and V. Yeghikyan
    J. Phys. **A42** (2009), 205206 [arXiv:0808:0430]

15. **Anisotropic Higgs oscillator**
A. Nersessian and V. Yeghikyan
Proc. of Workshop on Supersymmetries and Quantum Symmetries, Dubna, July 30-August 4, 2007, Ed. E. Ivanov, S. Fedoruk, pp.242-246, JINR Publ.2008 [arXiv:0711.1033]

16. **Anisotropic inharmonic Higgs oscillator and related (MICZ-)Kepler-like systems**
A. Nersessian and V. Yeghikyan
J. Phys. **A41** (2008) 155203 [arXiv:0710.5001]

17. **Dipole transitions and Stark effect in the charge-dyon bound system**
L. Mardoyan, A. Nersessian, H. Sarkisyan and V. Yeghikyan
J. Phys. **A40** (2007), 5973-5980 [arXiv:cond-mat/0609768]