CURRICULUM VITAE OF EDIK A. AYRYAN

Edik Artashevich Ayryan, Candidate of Sciences in Physics and Mathematics, Head of Sector at the Division of Computational Physics, LIT, JINR

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Born: 6 May 1951, USSR

Education: (years, institutions, degrees, title of thesis)

1968 – 1973	Faculty of Mechanics and Mathematics, Yerevan State University, Graduation Diploma of Specialist in Mathematics
1985	Candidate of Sciences in Physics and Mathematics: "Iterative methods on a sequence of grids for solving magnetostatic problems". Supervisor: Prof. E. P. Zhidkov, JINR

Specialization:
Computer Simulations, Modern Methods of Computational Mathematics, Parallel Computations

Professional career:

1973-1977	Junior Researcher at the Computational Center of A. I. Alikhanyan National Science Laboratory, Armenia (former Yerevan Physics Institute)
1977-1985	Researcher at the Division of Computational Mathematics LCTA/LIT
1985-1992	Head of the mathematics group at the Computational Center of A. I. Alikhanyan National Science Laboratory, Armenia (former Yerevan Physics Institute)
Since 1992	Head of Sector at the Division of Computational Physics, LIT, JINR
Since 1998	Associate Professor at the Department of Mathematics and Mathematical Physics, Tver State University, Russia
Since 2006	Senior Researcher at the Laboratory of Mathematical Modeling of Complex Nuclear Systems and Processes (Tver State University in cooperation with JINR)

Supervision:

Since 1998	Supervision of bachelor and master students, Department of Mathematics and Mathematical Physics, Tver State University
2005	Supervision (together with Dr. E. E. Donets) of PhD student O. I. Streltsova, she obtained Candidate of Science (PhD) degree with thesis "Numerical study of the formation of singularities in the associated system of Yang-Mills equations with dilaton", JINR
2005	Supervision (together with Dr. B. Kostenko) of PhD student J. Pribis, he obtained PhD degree with thesis "Mathematical modeling of high-temperature relaxation processes in electron-atomic structures", JINR

Science -organizational activities:

Since 1992	Head of National Group of Armenia in JINR
Since 1996	Member of Organizing committee of the International Conference "Mathematical Modeling and Computational Physics" (1996, 1998, 2002, 2006, 2009, 2011, 2013, 2015, 2017, 2019)

Since 2000	Chairman of the Science and Technology Council of LIT JINR
Since 2013	Member of Editorial Board of the Scientific Journal “Mathematical Modelling and Geometry” (http://mmg.tversu.ru/en/, ISSN 2311-1275)
2015, 2018	Founder and chairman of Dubna Workshop “Computational Modelling of Complex Systems” (CMSC-2015, CMSC-2018)
2016	Member of the International Programme Committee of the 19th International Conference "Distributed Computer and Communication Networks, November 21-25, 2016, Moscow Russia

Grants:

Principal Investigator in the following projects supported by Russian Foundation of Basic Research (RFBR):

99-01-01101-a "Mathematical modeling of the mechanisms of interaction of thermal, thermoelastic and thermoplastic processes arising in condensed media under the influence of accelerated elementary particles and nuclei, as well as their beams" (1999-2001 years);

02-01-00606-a "Mathematical modeling of structural changes in solids under the influence of accelerated atomic nuclei" (2002-2004 years);

05-01-00645-a "Development of algorithms for mathematical modeling of complex nonlinear systems and physical processes" (2005-2007 years);

08-01-00800-a "Mathematical modeling of complex nonlinear systems, physical processes and development of parallel algorithms for solving applied problems" (2008-2010 years);

11-01-00278-a "Mathematical modeling of complex systems and physical processes described by nonlinear models and parallel computing" (2011-2013 years);

14-01-00628-a "Mathematical methods, algorithms and programs for modeling complex physical systems and processes using high-performance computing systems" (2014-2016 years).

18-51-18005-Bulg-a "Symbolic and numeric methods, algorithms and their parallel implementations for solving problems of mathematical physics" (2018-2019 years).

Member of research group of the following projects supported by RFBR:

94-01-01354-a, 95-01-01467-a, 97-01-01023-a, 98-01-00190-a, 01-01-00726-a, 02-01-81023-Bel2002_a, 04-01-00490-a, 04-01-81011-Bel2004_a, 06-01-00530-a, 06-01-81014-Bel-a, 07-01-00738-a, 10-01-00467-a, 13-01-00595-a

Bibliography: Results of the scientific activities have been published in more than 130 articles

Awards, Prizes:

JINR Certificate of Honor, 2006
Veteran of Atomic Engineering and Industry, 2007
Honorary Diploma of JINR, 2016
Honorary Employee of JINR, 2016
Silver medal of the Technical University of Kosiče (Slovakia), 2016
Gold medal of the Institute of Experimental Physics of the Slovakian Academy of Science in Kosiče (Slovakia), 2016

MAIN PUBLICATIONS
(2013-2018)

1. A. Egorov, V. Shigorin, A. Ayriyan, E. Ayryan. *Study of the Effect of Pulsed-Periodic Electric Field and Linearly Polarized Laser Radiation on the Properties of Liquid-Crystal Waveguide* // Physics of Wave Phenomena **26(2)**, pp. 116-123 (2018), https://doi.org/10.3103/S1541308X18020061

2. A. S. Ayriyan, E. A. Ayrjan, A. A. Egorov, I. A. Maslyanitsyn, V. D. Shigorin. *Numerical Modeling of the Static Electric Field Effect on the Director of the Nematic Liquid Crystal Director* // Mathematical Models and Computer Simulations **10(6)**, pp. 97-107 (2018)

3. D. Divakov, M. Malykh, L. Sevastianov, A. Sevastianov, E. Ayryan. *Quasi-Vector Model of Propagation of Polarized Light in a Thin-Film Waveguide Lens* // The European Physics Journal Web of Conferences **173**, 02007 (2018), https://doi.org/10.1051/epjconf/201817302007

4. A. Ayriyan, E. Ayryan, A. Egorov et al. *Modeling Static Electric Field Effect on Nematic Liquid Crystal Director Orientation in Side-Electrode Cell* // The European Physics Journal Web of Conferences **173**, 03002 (2018), https://doi.org/10.1051/epjconf/201817303002

5. E. Ayryan, A. Egorov, D. Kulyabov, V. Malyutin, L. Sevastianov. *Functional Integral Approach to the Solution of a System of Stochastic Differential Equations* // The European Physics Journal Web of Conferences **173**, 02003 (2018), https://doi.org/10.1051/epjconf/201817302003

6. A. Ayriyan, E. Ayrjan, A. Egorov, I. Maslyanitsyn, V. Shigorin. *Numeric modeling of static electric field effect on nematic liquid crystal director orientation* // Matematicheskoe Modelirovanie **30(4)**, pp. 97-107 (2018), http://mi.mathnet.ru/eng/mm3960

7. E. A. Ayryan, A. D. Egorov, D. S. Kulyabov, V. B. Malyutin, L. A. Sevastyanov. *Functional integrals method for systems of stochastic differential equations* // Proceedings of the National Academy of Sciences of Belarus. Series of Physical-Mathematical Sciences **54(3)**, pp. 279-289 (2018), https://doi.org/10.29235/1561-2430-2018-54-3-279-289

8. E. A. Ayryan, A. D. Egorov, D. S. Kulyabov, V. B. Malyutin, L. A. Sevastyanov. Application of functional integrals to stochastic equations // Mathematical Models and Computer Simulations 9(3), pp 339-348 (2017), https://doi.org/10.1134/S2070048217030024

9. E. A. Ayryan, G. D. Dashitsyrenov, E. B. Laneev, K. P. Lovetskiy, A. L. Sevastianov, L. A. Sevastianov. *Mathematical synthesis of the thickness profile of the waveguide Lüneburg lens using the adiabatic waveguide modes method* // Proceedings of SPIE **10337**, 103370I-1 (2017), https://doi.org/10.1117/12.2267920

10. E. A. Ayryan, A. D. Egorov, V. B. Malyutin and L. A. Sevastianov. *Approximate Formulas for Mathematical Expectations of Functionals of Random Processes Defined by Ito-Levy Multiple Integral Expansion* // Mathematical Modelling and Geometry **5(3)**, pp. 1-15 (2017), http://doi.org/10.26456/mmg/2017-531

11. E. Ayryan, A. Egorov, D. Kulyabov, V. Malyutin, L. Sevastyanov. *Application of functional integrals to stochastic equations* // Matematicheskoe Modelirovanie **28(11)**, pp. 113-125 (2016), http://mi.mathnet.ru/eng/mm3790

12. E. A. Ayryan, G. D. Dashitsyrenov, K. P. Lovetskiy, A. L. Sevastianov. *Synthesis of the Thickness Profile of the Waveguide Layer of the Thin Film Generalized Waveguide Luneburg Lens* // The European Physics Journal Web of Conferences **108**, 02011 (2016), https://doi.org/10.1051/epjconf/201610802011

13. D. N. Klochkov, K. B. Oganesyan, E. A. Ayryan, N. Sh. Izmailian. *Generation of induced Smith-Purcell radiation: free-electron laser in open system* // Journal of Modern Optics **63(7)**, pp. 653-659 (2015), https://doi.org/10.1080/09500340.2015.1088969

14. A. Ayriyan, E. Ayrjan, A. Egorov et al. *Some features of second harmonic generation in the nematic liquid crystal 5CB in the pulsed-periodic electric field* // Physics of Wave Phenomena **24(4)**, pp. 259-267 (2016), https://doi.org/10.3103/S1541308X16040026

15. E. A. Ayryan, A. S. Gevorkyan, V. V. Sahakyan. *New algorithm for simulation of 3D classical spin glasses under the influence of external electromagnetic fields* // Physics of Particles and Nuclei Letters **12(3)**, pp. 380-384 (2015), https://doi.org/10.1134/S154747711503005X

16. D. Vasileva, I. Bazhlekov, E. Ayryan, E. Bazhlekova. *A Compact Alternating Direction Implicit Scheme for Two-dimensional Fractional Oldroyd-B Fluids* // Pliska Studia Mathematica **25**, pp. 213-224, (2015), http://www.math.bas.bg/pliska/Pliska-25/Pliska-25-2015-213-224.pdf

17. E. M. Sarkisyan, K. B. Oganesyan, N. Sh. Izmailian and E.A. Ayryan. *Mathematical Modeling of Graphite-to-Diamond Transition* // Mathematical Modelling and Geometry **2(2)**, pp. 27-36, (2014), http://mmg.tversu.ru/images/publications/2014-vol2-n2/Sarkisyan-2014-07-28.pdf

18. E.A. Ayryan, V.B. Malyutin. *Application of Functional Polynomials to Approximation of Matrix-Valued Functional Integrals* // RUDN Journal of Mathematics, Information Sciences and Physics **1**, pp. 43-46 (2014), http://journals.rudn.ru/miph/article/view/8252

19. A. A. Egorov, A. L. Sevastyanov, E. A. Ayryan, L. A. Sevastianov. *Stable computer modeling of thin-film generalized waveguide Luneburg lens* // Matematicheskoe Modelirovanie **26(11)**, pp. 37-44 (2014), http://mi.mathnet.ru/eng/mm3537

20. E. A. Ayryan, V. B. Malyutin. *Evaluation of Matrix-Valued Functional Integrals Using Functional Polynomials* // Proceedings of the National Academy of Sciences of Belarus. Series of Physical-Mathematical Sciences **1**, pp. 18-25 (2014)

21. E. A. Ayryan, A. D. Egorov, L. A. Sevastyanov. C*alculation of Mathematical Expectations of Random Functionals* // Proceedings of the National Academy of Sciences of Belarus. Series of Physical-Mathematical Sciences **2**, pp. 21-26 (2014)

22. E.A. Ayryan, A.S. Gevorkyan, L.A. Sevastyanov. *On the Motion of a Three-Body System on Hypersurface of Proper Energy* // Physics of Particles and Nuclei Letters **10(7)**, pp. 1099-1111 (2013), https://doi.org/10.1134/S1547477114010051

23. M. Zuev, E. Ayryan, J. Busa, V. Ivanov, L. Sevastyanov, O. Streltsova. *The Derivation of the Dispersion Equations of Adiabatic Waveguide Modes in the Thin-Film Waveguide Luneburg Lens in the Form of Non-Linear Partial Differential Equation of the First Order* // RUDN Journal of Mathematics, Information Sciences and Physics **4**, pp. 122-131 (2013), http://journals.rudn.ru/miph/article/view/8812