

Curriculum Vitae

Vladimir Kulinskii

(Ukrainian passport name Volodymyr Kulinskyi)

Department of Theoretical Physics, Odessa State University
2 Dvoryanskaya Str.,
65082 Odessa, Ukraine

E-mail: kulinskij@onu.edu.ua
Phone: +38 (048) 7317556
Born 2 November 1968

Educational data:

Sept 1975 - June 1985 Odessa School No 51. Advanced subject Physics

Sept 1985 - June 1987 M.Sc. program in Physics and Theoretical Physics at Physics Faculty and Department of Theoretical Physics, Odessa State University (USSR)

Sept 1989 - June 1992

July 1987 - June 1989 Army service

Undergraduate research project Collective variables and fluctuations near critical point”

Diploma thesis “Canonical theory for the critical behaviour of 3 dimensional Ising model”

Oct 1992-Oct 1995 PhD program at Department of Theoretical Physics,
I.I. Mechnikov Odessa State University,
PhD thesis “Canonical formalism for the description of the critical phenomena in simple systems”
Supervisor: Prof. N.P. Malomuzh, M.Sc., Ph.D., D.Sc., Soros Prof.

Jan 1996 Ph.D. degree in Phys.& Math.: Theor. Phys.

Jan 2012 Doctor of Science in Phys.& Math.: Molecular Physics and Thermophysics
Taras Shevchenko Kiev National University
Doctorate thesis “Asymmetry of the critical behavior of liquid systems ”

Academic honors:

1991-1992 I.I. Mechnikov Scholarship of Board of Guardians of Odessa State University
1993-1995 Scholarship of Council of Ministers of Ukraine for young scientists
1994-1995 G.Soros Scholarship in Physics for Postgraduates
2002 Sign of Excellence in National Education
2017-2018 Fulbright Scholar Award

Teaching experience

Oct 1991 - 2001 Advanced courses in Physics and Mathematics for pupils of Richeleu Lyceum of Odessa;

The leader of National Team on International Young Physicist Tournament (1994, Groningen, Netherlands, 1996, Zchaltubo, Georgia (CIS) 1998 Donaueshingen, Germany). Jury member of Ukrainian Olympiad in Physics and International Tournaments of Young Physicists 2008-2015.

Feb 1996 - May 1996 Teaching Assistant in Classical Mechanics, Electrodynamics for students of Physics Faculty, Odessa University

Sept. 1996 - 2001 Senior Lecturer at the Department of Theoretical Physics, Physics Faculty, Odessa State University. Lectures in Classical Mechanics, Thermodynamics and Statistical Physic, Quantum Mechanics Special courses:

Renormalization group approach to critical phenomena; Selected problems in Statistical Physics, Introduction in Phys. of Superconductivity
Sept 2001-2008 Ass Prof. at the Department of Theoretical Physics, Physics Faculty Odessa National University. . Lectures in Thermodynamics and Statistical Physics, Quantum Mechanics Special courses: Selected problems in Statistical

Physics and Quantum Field Theory, Introduction to Superconductivity
Sept 2011-Present Prof. at the Department of Theoretical Physics, Physics Faculty Odessa National University. Lectures in Quantum Mechanics, Introduction to Superconductivity, Computer simulations of Physical Processes in Wolfram Mathematica environment; Special courses: Nonequilibrium Thermodynamics and Statistical Physics, Statistical theory of Liquid Matter, Selected problems in Statistical Physics and Quantum Field Theory.

Professional data:

Oct 1991 - Sept 1992 Junior Research Fellow at the Dept. of Theor. Phys., Odessa State University.

Feb 1996 -1996 Teaching Assistant at the Department of Theoretical Physics Odessa State University

Sept 1996 – 2001 Senior Lecturer at the Department of Theoretical Physics I.I. Mechnikov Odessa National University

Sept 2001 – 2008 Assoc. Prof. at the Department of Theoretical Physics I.I. Mechnikov Odessa National University

May 2008-2011 Doctor of Phys&Math degree Fellow of Physics Faculty, Taras Shevtchenko Kiev National University

Sept. 2011-present Professor of the Department of Theoretical Physics, Physics Faculty, I.I. Mechnikov Odessa National University

Membership

Jan 2004-present Member of Ukrainian Physical Society

Theoretical research in phase transitions and critical phenomena: simple and complex liquids, electrolytes and liquid metals; nonequilibrium dynamical transitions in the systems of self-propelling or active Brownian particles, point-like and low-dimensional quantum defects in condensed matter.

List of selected publications

1. A. Maslechko, K. Glavatsky and V. Kulinskii *Surface tension of molecular liquids: Lattice gas approach*, J. Mol. Liq., 235 (2017) pp 119 – 125 <https://doi.org/10.1016/j.molliq.2016.11.103>
2. V. Kulinskii and A. Maslechko *Surface Tension of the Liquid -- Vapor Interface of the Lennard-Jones Fluids from the Ising Model*, J. Phys. Chem C, 120 №16 (2016) pp 8790-8803
<http://dx.doi.org/10.1021/acs.jpcc.6b02083>
3. V. Kulinskii *Asymmetry of the Hamiltonian and the singular behavior of the Tolman length within the canonical formalism approach*, Ukr. J. Phys., 60 №9 (2015) pp. 845-854
<http://ujphys.bitp.kiev.ua/files/journals/60/9/600902p.pdf>
4. V. Kulinskii and D. Panchenko *Physical interpretation of point-like interactions of one-dimensional Schrodinger operator*, Physica B (2015)
<http://www.sciencedirect.com/science/article/pii/S0921452615300600>
5. V. Kulinskii and D. Panchenko *Localized states near the Abrikosov vortex core in type-II superconductors within zero-range potential model*, Nanosystems: Physics, Chemistry, Mathematics (2015) № 6(3), P. 353–360 <http://nanojournal.ifmo.ru/en/articles-2/volume6/6-3/physics/paper05/>
6. L. Bulavin, V. Cheplak and V. Kulinskii *Global Isomorphism approach: main results and perspectives*, Physics of Liquid Matter: Modern Problems, Springer Proceedings in Physics' (eds. Leonid Bulavin and Nikolai Lebovka) (2015) http://link.springer.com/chapter/10.1007/978-3-319-20875-6_3#
7. O. Chepizhko and V. Kulinskii *The hydrodynamic description for the system of self-propelled particles: Ideal Viscek fluid*, Physica A, 415, (2014) pp. 493 - 502
<http://www.sciencedirect.com/science/article/pii/S0378437114007055>
8. V. Kulinskii, *The critical compressibility factor value: Associative fluids and liquid alkali metals*, J.Chem. Phys. 141 (2014) 054503
<http://scitation.aip.org/content/aip/journal/jcp/141/5/10.1063/1.4891806>
9. V. Kulinskii *The Critical Compressibility Factor of Fluids from the Global Isomorphism Approach*, J. Chem. Phys., 139 (2013) 184119
<http://scitation.aip.org/content/aip/journal/jcp/139/18/10.1063/1.4829837>
10. V Kulinskii and N. Malomuzh *New version of the fluctuation Hamiltonian for liquids near the critical point*, Journal of Molecular Liquids 158, (2011) pp. 166-169
<http://dx.doi.org/10.1016/j.molliq.2010.11.013>
11. V Kulinskii *The Vliagenthart-Lekkerkerker relation. The case of the Mie-fluids*, J. Chem. Phys. 135 (2011) pp. 144111 http://jcp.aip.org/resource/1/jcpsa6/v134/i14/p144111_s1
12. L. Bulavin and V Kulinski *The Unified picture for the Classical Laws of Batschinski and the Rectilinear diameter for Molecular Fluids*, Journal of Physical Chemistry B 115 (2011) pp. 6061–6068 <http://dx.doi.org/10.1021/jp201872f>
13. Kulinskii, V. L. *Communication: The Application of the Global Isomorphism to the Study of Liquid-Vapor Equilibrium in Two and Three-Dimensional Lennard-Jones Fluids*, J. Chem. Phys., 133 (2010) 131102 <http://link.aip.org/link/?JCP/133/131102/1>
14. Kulinskii, V. L. *Global Isomorphism Between the Lennard-Jones Fluids and the Ising Model*, J. Chem. Phys., 133 (2010) 034121 <http://link.aip.org/link/?JCP/133/034121/1>
15. L. Bulavin and V Kulinskii *Generalized principle of corresponding states and the scale invariant mean-field approach*, J. Chem. Phys. 133 (2010) 134101,
<http://link.aip.org/link/JCPSA6/v133/i13/p134101/s1>
16. V. Kulinskii *Simple Geometrical Interpretation of the Linear Character for the Zeno-Line and the Rectilinear Diameter*, J. Phys. Chem. B 114 (2010) 2852-2855,
<http://pubs.acs.org/doi/full/10.1021/jp911897k>

17. O. Chepizhko and V. Kulinskii *On the relation between Vicsek and Kuramoto models of spontaneous synchronization*, Physica A: Statistical Mechanics and its Applications 389 (2009) pp. 5347-5352, <http://dx.doi.org/10.1016/j.physa.2010.08.016>
18. V. Kulinskii and N. Malomuzh *The nature of the rectilinear diameter singularity*, Physica A, **388** (2009) pp. 621-627 <http://dx.doi.org/10.1016/j.molliq.2010.11.013>
19. V. Ratushnaya, D. Bedeaux, V. Kulinskii and A. Zvelindovsky *Stability properties of the collective stationary motion of self-propelling particles with conservative kinematic constraints*, Journal of Physics A: Mathematical and Theoretical, **40** (2007) 2573 <http://stacks.iop.org/1751-8121/40/i=10/a=021>
20. V. Ratushnaya, D. Bedeaux, V. Kulinskii and A. Zvelindovsky. *Hydrodynamic model for the system of self propelling particles with conservative kinematic constraints; two dimensional stationary solutions*, Physica A: Statistical Mechanics and its Applications, **366** (2006) pp. 107-114 <http://dx.doi.org/10.1016/j.physa.2005.11.002>
21. V. Kulinskii, V. Ratushnaya, A. Zvelindovsky and D. Bedeaux *Collective behavior in the system of self propelling particles with kinematic constraints* *Europhys. Lett.*, **71** (2005) pp. 207-213 <http://iopscience.iop.org/02955075/71/2/207;jsessionid=5CAEEDEA9CC08AA572FD3CD7BC562FA6.c3>
22. V. Kulinskii, A. Fisenko and N. Malomuzh *Nature of double critical points in binary solutions*, Phys. Rev. E, **69**, (2004) pp. 011501, <http://link.aps.org/doi/10.1103/PhysRevE.69.011501>
23. V. Kulinskii *Nonperturbative construction of the Landau-Ginzburg Hamiltonian for the Ising-like systems*, J. Mol. Liq., **105/2-3**, (2003) pp. 273-278 [http://dx.doi.org/10.1016/S0167-7322\(03\)00067-9](http://dx.doi.org/10.1016/S0167-7322(03)00067-9)
24. V. Kulinskii and N. Malomuzh *Dipole fluid as a basic model for the equation of state of ionic liquids in the vicinity of their critical point*, Phys. Rev. E **67**, (2003) pp. 011501 <http://dx.doi.org/10.1103/PhysRevE.67.011501>
25. V. Kulinskii and N. Malomuzh *Critical behavior of ionic liquids*, Phys. Rev. E **65**, (2002) pp. 061506-061513 http://link.aps.org/abstract_prev65/e061506
26. V. Kulinskii, N. Malomuzh and V. Tolpekin *Influence of charge fluctuations on the critical behavior of electrolyte solutions*, Phys. Rev. E **60**, (1999) pp. 6897 <http://dx.doi.org/10.1103/PhysRevE.60.6897>