CURRICULUM VITAE

Klyatskin Valery Isaakovich

A. M. Obukhov Institute of Atmospheric Physics Russian Academy of Sciences,
3, Pyzhevsky per., Moscow, 119017, Russia, FAX: (495) 953 1652,
E–mail: klyatskin@yandex.ru

Personal Data: Born April 11, 1940, Russian citizen, Moscow, Russia

Education:

1988 Research Professor of Theoretical and Mathematical Physics, Russian Academy of Science;

1977 D. Sc. in Physical and Mathematical Sciences, Acoustical Institute, Russian Academy of Science;

1968 Ph.D. in Physical and Mathematical Sciences, Institute of Atmospheric Physics Russian Academy of Science;

1964 M.Sc. in Theoretical Physics, Moscow Institute of Physics and Technology (FIZTEX).

Recent Positions:

1992 – present, Chief Scientist, Institute of Atmospheric Physics, Russian Academy of Sciences, Moscow, and Chief Scientific Consultant.

2003, Visiting Professor, Padova University, Italy.

2001, 2002, Visiting senior scientists of the Faculty of Engineering of the Ben–Gurion University of the Negev, Israeli.

2001, Visiting Professor, Ecole Normale Superioure, Paris, France.

1993, 1994, 1995, Senior Researcher, CWRU Center for Stochastic and Chaotic Processes in Science and Technology, Cleveland, Ohio, USA.

1978 – 1992, Head, Wave Processes Department and the Statistical Hydrodynamic Laboratory, Pacific Oceanological Institute, Russian Academy of Sciences, Vladivostok.

1964 – 1978, Researcher, Senior Researcher, Institute of Atmospheric Physics, Russian Academy of Sciences, Moscow.

Research Interests: Theoretical and mathematical physics; applied mathematics; stochastic equations; statistical hydromechanics, acoustics and radiophysics.

Professional Memberships:

Editorial Board of *Waves in Random Media Journal* – 1988 –1992;

Editorial Board of *Izvestiya, Atmospheric and oceanic physics* – 1997 **–** present.

Awards: 1990 USSR State Prize for *research on propagation of waves in turbulent atmosphere* (1964–1980).

Main publications:
The monographs :

1. *Nonlinear Systems of Hydrodynamic Types* (Moscow, Nauka, 1974, in Russian, co–author);
2. *Statistical Description of Dynamical Systems with Fluctuated Parameters*, Seriya *Modern Problems in Physics* (Moscow, Nauka, 1975, in Russian);
3. *Stochastic Equations and Wave Propagation in Random Media* (Moscow, Nauka, 1980, in Russian);
4. *Ondes et Équations Stochastiques dans les Milieux Aléatoirement non Homogènes* (Besançon Cedex, Les Éditions de Physique, 1985, in French);
5. *Imbedding Method in Wave Propagation Theory*, Seriya *Modern Problems in Physics* (Moscow, Nauka, 1986, in Russian);
6. *Stochastic Equations through the Eye of the Physicist* (*Basic Concepts, Exact Results, and Asymptotic Approximations*) (Moscow, Fizmatlit, 2001, in Russian);
7. *Dynamics of Stochastic Systems* (Course of Lectures) (Moscow, Fizmatlit, 2002, in Russian);
8. *Diffusion and Clustering of Passive Tracers in Random Hydrodynamic Flows* (Moscow, Fizmatlit, 2005, in Russian);
9. *Dynamics of Stochastic Systems* (Amsterdam, Elsevier, 2005);
10. *Stochastic Equations through the Eye of the Physicist* (*Basic Concepts, Exact Results, and Asymptotic Approximations*) (Amsterdam, Elsevier, 2005);
11. *Stochastic equations* (*Theory and Applications in Acoustics, Hydrodynamics, and Radiophysics*), Vol. 1, *Basic Concepts, Exact Results, and AsymptoticApproximations* (Moscow, Fizmatlit, 2008, in Russian);
12. *Stochastic equations* (*Theory and Applications in Acoustics, Hydrodynamics, and Radiophysics*), Vol. 2, *Coherent Phenomena in Stochastic Dynamic Systems* (Moscow, Fizmatlit, 2008, in Russian);
13. *Lectures on Dynamics of Stochastic Systems* (Amsterdam, Elsevier, 2005);
14. *Studies on Dynamics of Stochastic Systems* (Moscow, URSS, 2012, in Russian).

Recent survey papers:

1. **V. I. Klyatskin**, Statistical theory of radiation transport in stratified random media, *Izvestiya AN SSSR, Fiz. Atm. i okeana* **27**(1), 45 – 66, 1991 [*Izvestiya, Atmospheric and Oceanic Physics* **27**(1), 31 – 44, 1991].
2. **V. I. Klyatskin**, A statistical theory of radiative transfer in layered random media, in: *Mathematical and Numerical Aspects of Wave Propagation Phenomena*, eds. G. Cohen, L. Halpern, P. Joly, 595 – 608, 1991, SIAM, Philadelphia.
3. **V. I. Klyatskin**, Approximations by delta–correlated random processes and diffusive approximation in stochastic problem, in : *Mathematics of Random Media*, eds. W. Kohler, B.S. White, *Lectures in Appl. Math.* **27**, 447 – 476, 1991, AMS, Providence RI.
4. **V. I. Klyatskin**, A. I. Saichev, Statistical and dynamical localization of plane waves in randomly layered media, *Uspekhi Fiz. Nauk* **162**(3), 161 – 194, 1992 [*Soviet Physics Usp.* **35**(3), 231 – 247, 1992].
5. **V. I. Klyatskin**, The imbedding method in statistical boundary–value wave problems, in: *Wave Propagation in Random Media (Scintillation)*, 442–462, 1993, eds. V.I. Tatarskii, A. Ishimaru, V.U. Zavorotny, SPIE, Bellingham, WA.
6. **V. I. Klyatskin**, The imbedding method in statistical boundary–value wave problems, in: *Progress in Optics* **XXXIII**, 1994, 1 – 128, North–Holland, Amsterdam.
7. **V. I. Klyatskin**, Statistical description of the diffusion of a passive tracer in a random velocity field, *Uspekhi Fiz. Nauk* **37**(5), 531 – 544, 1994 [*Physics – Uspekhi* **37**(5), 501 – 513, 1994].
8. **V. I. Klyatskin**, W. A. Woyczynski, Dynamical and statistical characteristics of geophysical fields and waves and related boundary–value problems, in: *Stochastic Models in Geosystems*, IMA Volumes **85**, 1996, 171 – 208, Springer–Verlag, New York.
9. **V. I. Klyatskin**, D. Gurarie, Random topography in geophysical models, in: *Stochastic Models in Geosystems*, IMA Volumes **85**, 1996, 149 – 170, Springer–Verlag, New York.
10. **V. I. Klyatskin**, W. A. Woyczynski, D. Gurarie, Short–time correlation approximation for diffusing tracers in random velocity fields: a functional approach, in: *Stochastic Modelling in Oceanography*, *Progress in Probability*, **39**, 1996, 121 – 169, Birkhäuser, Boston.
11. **V. I. Klyatskin**, W. A. Woyczynski, D. Gurarie, Diffusing passive tracers in random incompressible velocity flows: Statistical topography aspects, *J. Stat. Phys.* **84**(3/4), 797 – 836, 1996.
12. D. Gurarie, **V. I. Klyatskin**, Turbulent transport of passive tracers and the onset of diffusivity, in: *Two–dimensional Turbulence in Fluids and Plasma*, ed. R. L. Dewar, R. W. Griffith, 213 – 234, 1998, AIP, New York.
13. **V. I. Klyatskin**, D. Gurarie, Coherent phenomena in stochastic dynamical systems, *Uspekhi Fiz. Nauk* **169**(2), 171 – 207, 1999 [*Physics–Uspekhi*, **42**(2), 165 – 198, 1999].

14 **V. I. Klyatskin**, Stochastic transport of passive trasers in random flows, *Izvestiya AN, Fiz. Atm. i okeana*, **36**(2), 177 – 201, 2000 [*Atmospheric and Oceanic Physics*, **36**(2), 177 – 201].
15. **V. I. Klyatskin**, K. V. Koshel', Simple example of the development of cluster structure of a passive tracer field in random flows, *Uspekhi Fiz. Nauk* **170**(7), 771 – 778, 2000 [*Physics–Uspekhi*, **43**(7), 717 – 723, 2000].
16. **V. I. Klyatskin**, Clustering and diffusion of particles and tracer density in random hydrodynamic flows, *Uspekhi Fiz. Nauk* **173**(7), 689 – 710, 2003 [*Physics–Uspekhi*, **46**(7), 667 – 688, 2003].
17. **V. I. Klyatskin**, Propagation of electromagnetic waves in randomly inhomogeneous media as a problem of statistical mathematical physics, *Uspekhi Fiz. Nauk* **174**(2), 177 – 195, 2004 [*Physics–Uspekhi*, **47**(2), 169 – 186, 2004].
18. **V. I. Klyatskin**, Statistics and reality in stochastic dynamic systems, In: *Nonlinear Waves 2004*, Nignii Novgorod, IPF RAN, 2005 (in Russian).
19. **V. I. Klyatskin**, Dynamic stochastic systems, typical realization curve, and Lyapunov's exponents, *Izvestiya AN, Fiz. Atm. i okeana*, **44**(1), 21 – 35, 2008 [*Atmospheric and Oceanic Physics*, **44**(1), 18 – 32, 2008].
20. **V. I. Klyatskin**, Statistical topography and Lyapunov's exponents in dynamic stochastic systems, *Uspekhi Fiz. Nauk* **178**(4), 419 – 431, 2008 [*Physics–Uspekhi*, **51**(4), 395 – 407, 2008].
21. **V. I. Klyatskin**, Modern methods for the statistical description of dynamical stochastic systems, *Uspekhi Fiz. Nauk* **179**(5), 547 – 553, 2009 [*Physics–Uspekhi*, **52**(5), 514 – 519, 2009].
22. **V. I. Klyatskin**, Integral characteristics: a key to understanding structure formation in stochastic dynamical systems, *Uspekhi Fiz. Nauk* **181**(5), 457 – 482, 2011 [*Physics–Uspekhi*, **54**(5), 441 – 464, 2011].
23. **V. I. Klyatskin**, Stochastic dynamo: statistical-topography aspects, In: *Nonlinear Waves 2010*, 68 – 86, Nignii Novgorod, IPF RAN, 2011 (in Russian).

Some other papers from 1997:

1. N. V. Gryanik, **V. I. Klyatskin**, Contribution to the statistical theory of wave localization in a two–layer medium, *Zh. Eksp. Teor. Fiz.* **111**(6), 2030 – 2043, 1997, [*JETP*, **84**(6), 1106 – 1113, 1997].
2. N. V. Gryanik, **V. I. Klyatskin**, Localization of Rossby waves under the action of a cylindrical bottom topography (two–layer model), *Izvestiya RAN, Fiz. Atm. i okeana* **33**(6), 723 – 732, 1997, [*Izvestiya, Atmospheric and Oceanic Physics* **33**(6), 669 – 678, 1997].
3. **V. I. Klyatskin**, O. G. Nalbandyan, Diffusion of passive settling inclusions in an isotropic field of random flows, *Izvestiya RAN, Fiz. Atm. i okeana* **32**(3), 291 – 297, 1997 [*Atmospheric and Oceanic Physics* **32**(3), 1997].
4. **V. I. Klyatskin**, A. I. Saichev, To statistical theory of diffusion of floating tracers in random velocity field, *Zh. Eksp. Teor. Fiz.* **111**(4), 1297 – 1313, 1997 [*JETP* **84**(4), 716 –724, 1997].
5. **V. I. Klyatskin**, I. G. Yakushkin, Statistical theory of the propagation of optical radiation in turbulent media, *Zh. Eksp. Teor. Fiz.* **111**(6), 2044 – 2059, 1997 [*JETP* **84**(6), 1114 – 1121, 1997].
6. **V. I. Klyatskin**, N. V. Gryanik, D. Gurarie, Localization of Rossby waves under the influence of random topography (two–layer model), *Wave Motion*, **28**(4), 333 – 352, 1998.
7. **V. I. Klyatskin**, I. G. Yakushkin, Stochastic transport in random wave fields, *Zh. Eksp. Teor. Fiz.* **118**(4), 849 – 862, 2000 [*JETP* **91**(4), 736 – 747, 2000].
8. **V. I. Klyatskin**, T. Elperin, Clustering of the Low–Inertial Particle Number Density Field in Random Divergence–Free Hydrodynamic Flows, *Zh. Eksp. Teor. Fiz.* **122**(2), 327 – 340, 2002 [*JETP*, **95**(2), 328 – 340, 2002].
9. **V. I. Klyatskin**, T. Elperin, Diffusion of Low–Inertia Particles in a Field of Random Forces and the Kramers Problem, *Izvestiya AN, Fiz. Atm. i okeana* **38**(6), 817 – 823, 2002 [*Atmospheric and Oceanic Physics* **38**(6), 725 – 731, 2002].
10. **V. I. Klyatskin**, Diffusion and Clustering of Sedimental Tracers in Random Hydrodynamic Flows, *Zh. Eksp. Teor. Fiz.* **126** (5), 1153 – 1166, 2004 [*JETP*, **99**(5), 1005 – 1017, 2004].
11. **V. I. Klyatskin**, O. G. Chkhetiani, On the Diffusion and Clustering of a Magnetic Field in Random Velocity Fields, *Zh. Eksp. Teor. Fiz.* **136**(2), 400 – 412, 2009 [*JETP*, **109**(2), 345 – 356, 2009].
12. **V. I. Klyatskin**, Integral One–Point Characteristics of Vector fields in Stochastic Magnetohydrodynamic Flow, *Zh. Eksp. Teor. Fiz.* **136**(6), 1194 – 1208, 2009 [*JETP*, **109**(6), 1032 – 1044, 2009].
13. **V. I. Klyatskin**, Stochastic dynamo in critical situation, *Teor. i Mat. Fiz.*, **172**(3), 415 – 436, 2012 [*TMPh*, **172**(3), 1243 – 1262, 2012].
14. **V. I. Klyatskin**, Spatial structures can form in stochastic dynamics systems due to near-zero-probability events: (comment on "21st century: what is life from the perspective of physics?", *Phys. Usp.* **53** (11), 327 – 356, 2010, by G. R. Ivanitskii), *Uspekhi Fiz. Nauk* **182**(11), 1235 – 1237, 2012 [*Physics–Uspekhi*, **55**(11), 1152 – 1154, 2012].