

# Curriculum Vitae

## SHAIKHET Leonid

### Professor, Doctor of Physics and Mathematics

Date and Place of Birth: February 17, 1948, Donetsk, Ukraine.

Head of Department of Higher Mathematics (since 1992),  
Donetsk State University of Management

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#### Professional levels:

Donetsk State University of Management, 1995, Professor  
Kiev State University, 1991, Dr. Phys.-Math. Sc.  
Kiev Institute of Mathematics, 1981, Cand. Phys.-Math. Sc.  
Donetsk State University, Faculty of Mathematics, 1966-1971, MSc

#### Areas of expertise:

Stability of stochastic functional-differential equations and stochastic Volterra difference equations, method of Lyapunov functionals construction for stability investigation, numerical analysis, optimal control theory for stochastic hereditary systems.

#### Abroad visits for science work:

- 1) Italy, 1995  
Urbino University, Institute of Biomathematics.
- 2) UK, 1996.  
University of Strathclyde, Glasgow, Department of Statistics & Modelling Science.
- 3) UK, 1997.  
University of Chester, Department of Mathematics.
- 4) Germany, 1998.  
Technical University, Berlin, Department of Mathematics.
- 5) Italy, 1998.  
Salerno University, Department of Informatics and Applications.
- 6) Italy, 2000.  
Salerno University, Department of Informatics and Applications.
- 7) France, 2001.  
Lille l'Ecole Centrale.
- 8) Italy, 2002.  
Salerno University, Department of Informatics and Applications.
- 9) UK, 2003.  
University of Strathclyde, Glasgow, Department of Statistics & Modelling Science.
- 10) UK, 2003.  
University of Chester, Department of Mathematics.
- 11) Spain, 2006.  
Sevilla University, Department of Differential Equations and Numerical Analysis
- 12) Italy, 2006.  
Salerno University, Department of Mathematics and Informatics.

- 13) Italy, 2007.  
Salerno University, Department of Mathematics and Informatics.
- 14) UK, 2008.  
University of Chester, Department of Mathematics.
- 15) UK, 2009.  
University of Chester, Department of Mathematics.
- 16) Spain, 2012.  
Sevilla University, Department of Differential Equations and Numerical Analysis.

**Abroad visits for participation in International conferences:**

- 1) USA, Atlanta, 1993,  
The First International Conference on Dynamic Systems & Applications.
- 2) Germany, Hamburg, 1995,  
The Third International Congress on Industrial and Applied Mathematics.
- 3) Germany, Berlin, 1997,  
15-th World Congress on Scientific Computation, Modelling and Applied Mathematics (IMACS97).
- 4) Germany, Berlin, 1998,  
International Congress of Mathematicians (ICM98).
- 5) Switzerland, Lausanne, 2000,  
16-th World Congress on Scientific Computation, Modelling and Applied Mathematics (IMACS2000). The organizer of the special session.
- 6) Germany, Wittenberg, 2004,  
Workshop on Stochastic Systems with Delay and Memory.
- 7) UK, Chester, 2008,  
International Conference “Numerical and analytical solution of stochastic delay differential equations”. Leverhulme International Network.

**Dissertations:**

1. Some problems of stability and optimal control of stochastic hereditary systems, Cand. Sc., 1981.
2. Optimal control and estimate of hereditary stochastic systems, Dr. Sc., 1991.

**Books:**

1. Andreyeva E.A., Kolmanovskii V.B., Shaikhet L.E. Control of hereditary systems.  
Moscow, Nauka, 1992. 334 p. (in Russian).
2. Kolmanovskii V.B., Shaikhet L.E. Control of systems with aftereffect.  
Translations of mathematical monographs, vol. 157.  
American Mathematical Society, Providence, RI, 1996. 336 p.
3. Shaikhet L. Lyapunov Functionals and Stability of Stochastic Difference Equations.  
Springer, London, Dordrecht, Heidelberg, New York, 2011. 370p.
4. Shaikhet L. Lyapunov Functionals and Stability of Stochastic Functional Differential Equations.  
Springer, Dordrecht, Heidelberg, New York, London, 2013. 346p.
5. Shaikhet L. Optimal control of stochastic difference Volterra equations. An Introduction.  
Springer, Cham, Heidelberg, New York, Dordrecht, London. 2015. 220p.

**Research publications: more than 200.**

**List of some publications during 2005-2014 years:**

1. Shaikhet L. General method of Lyapunov functionals construction in stability investigations of nonlinear stochastic difference equations with continuous time. Special Issue "Stochastic Dynamics with Delay and Memory". Stochastics and Dynamics, 2005, V.5, N.2, p.175-188.
2. Shaikhet L. Stability of difference analogue of linear mathematical inverted pendulum. Discrete Dynamics in Nature and Society. 2005. V.2005, N.3, p.215-226.
3. Shaikhet L., Roberts J. Reliability of difference analogues to preserve stability properties of stochastic Volterra integro-differential equations. Advances in Difference Equations. 2006. V.2006, Article ID 73897, 22 pages.
4. Shaikhet L. Some new aspect of Lyapunov type theorems for stochastic difference equations with continuous time. Asian Journal of Control, 2006, Vol.8, N.1, p.76-81.
5. Shaikhet L. A new view on one problem of asymptotic behavior of solutions of delay difference equations. Discrete Dynamics in Nature and Society. 2006. V.2006, Article ID 74043, 16 pages.
6. Shaikhet L. About stability of a difference analogue of a nonlinear integro-differential equation of convolution type. Applied Mathematics Letters, 2006. V.19, N.11, p.1216-1221.
7. Paternoster B., Shaikhet L. Mean square summability of solution of stochastic difference second-kind Volterra equation with small nonlinearity, Advances in Difference Equations. 2007. V.2007, Article ID 65012, 13 pages.
8. Caraballo T., Real J., Shaikhet L. Method of Lyapunov functionals construction in stability of delay evolution equations. Journal of Mathematical Analysis and Applications. 2007. V.334, N.2, p.1130-1145.
9. Bradul N., Shaikhet L. Stability of the positive point of equilibrium of Nicholson's blowflies equation with stochastic perturbations: numerical analysis. Discrete Dynamics in Nature and Society. 2007. V.2007, Article ID 92959, 25 pages.
10. Luo J., Shaikhet L. Stability in Probability of Nonlinear Stochastic Volterra Difference Equations with Continuous Variable. Stochastic Analysis and Applications, Vol.25, No.6, Nov 19, 2007, p.1151-1165.
11. Shaikhet L. Stability of a positive point of equilibrium of one nonlinear system with aftereffect and stochastic perturbations. Dynamic Systems and Applications. 2008, Vol.17, p.235-253.
12. Rodkina A., Schurz H., Shaikhet L. Almost sure stability of some stochastic dynamical systems with memory. Discrete and Continuous Dynamical Systems, 2008. Vol.21, N.2, June 2008, p.571-593.

13. Paternoster B., Shaikhet L. Stability of equilibrium points of fractional difference equations with stochastic perturbations. *Advances in Difference Equations*. 2008. V.2008, Article ID 718408, 21 pages.
14. Shaikhet L. Improved condition for stabilization of controlled inverted pendulum under stochastic perturbations. *Discrete and Continuous Dynamical Systems*. 2009, V.24, N. 4, p. 1335-1343.
15. Shaikhet L. Some new aspects of Lyapunov type theorems for stochastic differential equations of neutral type. *SIAM Journal on Control and Optimization*. 2010. V.48, N.7, p. 4481-4499.
16. Shaikhet L. About an unsolved stability problem for a stochastic difference equation with continuous time. *Journal of Difference Equations and Applications*. 2011, V.17, N.3, p.441–444.
17. Shaikhet L., Roberts J. Asymptotic stability analysis of a stochastic Volterra integro-differential equation with fading memory. *Dynamics of Continuous, Discrete and Impulsive Systems; Series B: Applications & Algorithms*. 2011, V.18, p.749-770.
18. Shaikhet L. Two unsolved problems in the stability theory of stochastic differential equations with delay. *Applied Mathematics Letters*. 2012, V.25, N.3, p.636-637.
19. Santonja F-J., Shaikhet L. Analysing social epidemics by delayed stochastic models. *Discrete Dynamics in Nature and Society*, vol. 2012, Article ID 530472, 13 pages, 2012.
20. Shaikhet L. Stability of equilibrium points of differential equation with fractional nonlinearity and stochastic perturbations. *Dynamics of Continuous, Discrete and Impulsive Systems. Series B: Applications & Algorithms*. V.19, N.6, 2012, p.709-729.
21. Santonja F-J., Shaikhet L. Probabilistic stability analysis of social obesity epidemic by a delayed stochastic model. *Nonlinear Analysis: Real World Applications*. 2014, V.17, p.114-125.
22. Shaikhet L., Korobeinikov A. Stability of a stochastic model for HIV-1 dynamics within a host. CRM (Centre de Recerca Matemàtica) Preprint Series number 1191, May 2014, 13p.
23. Caraballo T., Shaikhet L. Stability of delay evolution equations with stochastic perturbations. *Communications on Pure and Applied Analysis*. September 2014. V.13, N.5, p.2095-2113.
24. Shaikhet L. Stability of a positive equilibrium state for a stochastically perturbed mathematical model of glassy-winged sharpshooter population. *Mathematical biosciences and engineering*. 2014. V.11, N.5, p.1167-1174.
25. Shaikhet L. Stability of equilibrium states for a stochastically perturbed Mosquito population equation. *Dynamics of Continuous, Discrete and Impulsive Systems. Series B: Applications & Algorithms*. 2014. V.21, N.2, p.185-196.