

ELENA SHIRYAEVA

Assistant professor of Southern Federal University,

Institute for Mathematics, Mechanics, and Computer Science in the name of I.I. Vorovich,

8a, Milchakova, Rostov-on-Don, 344090, RUSSIA

Phone: +7 863 2975111, +7 863 2975114 (117)

E-mail: shir@math.sfedu.ru, evshiryaeva@gmail.com

Education:

Graduated Rostov University (Rostov-on-Don, Russia) — 1994.

Post-graduate, Rostov State University (Rostov-on-Don, Russia) — 1998–2001.

PhD (Taganrog, Russia) — 2010

Positions:

Rostov University, Southern Federal University (1985 — present).

Graduate (1987—1994);

Programmer (1994—1998);

Post graduate (1998— 2001),

Assistant (2001—2009).

Lecturer (2009—2011).

Assistant professor (2011—present).

Taught courses:

Computer science; Numerical methods; special courses.

Area of main specialization:

Numerical methods, hydrodynamic theory of stability, systems of hyperbolic quasi-linear equations, programming, applied mathematics, fluid dynamics, mathematical physics.

Grant support (2000—2016):

1. "Onset nonsymmetrical structure in thin layers of rotating fluid. Grant RFBR No. 00-01-00865; 2000-2002 (co-investigator).

2. "Rotational electrohydrodynamic flow in thin liquid films". RFBR grant 10-01-00452 (co-investigator).

3. "Investigation of nonlinear interactions of waves and flows in thin layers of liquid". Analytical department program "Development of scientific potential of higher school (2009-2011)". Registration number 1.1.11 (co-investigator).

4. "Fluid flows in stratified media". Grant of the Ministry of education and science of the Russian Federation, Contract № 02.740.11.5189, 2010 (co-investigator).

5. "Fundamental problems of nonlinear waves in a liquid multicomponent continuous media with complicated physical-chemical properties". Analytical department program "Development of scientific potential of higher school (2009-2013)". No. 1.5225.2011 and No. 14.A18.21.0873 (co-

investigator).

6. Problems of mathematical hydrodynamics: temporal, spatial structures and instabilities of flow in simple and complex liquid continuous media. Grant of the Ministry of education, project ID 1367, 213.01-11/2014-1 and project ID 1367, 2014-2016 (co-investigator).

Number of Publications – above 100.

List of representative publications

Elaeva M.S., Zhukov, M.Y., Shiryayeva E.V. Interaction of weak discontinuities and the hodograph method as applied to electric field fractionation of a two-component mixture. J. Comp. math. and math. phys. 2016. V.56. No 8. P. 1440-1453.

Dolgikh T.F., Zhukov M.Yu., Shiryayeva E.V. Stationary solutions of the Rayleigh-Benard-Karman convection problem. Izvestiya Vuzov. Sev.-Kav. region. Natural. science. 2015. No. 4. P. 44–48. (in Russia).

Zhukov M.Yu., Shiryayeva E.V., Polyakova N.M. Modeling of the evaporating liquid droplets. Rostov-na-Donu: Izd-vo SFEDU, 2015, 208 p. (in Russia)

Zhukov M.Yu., Shiryayeva E.V., Dolgikh T.F., The hodograph method for the solution of hyperbolic and elliptic quasilinear equations. Rostov-na-Donu: Izd-vo SFEDU, 2015, 126 p. (in Russia)

Zhukov M.Yu., Shiryayeva E.V., Tsyvenkova O.A. Hydrodynamics and behavior of the zone boundaries in isotachopheresis. Rostov-na-Donu: Izd-vo SFEDU, 2015, 94 p. (in Russia)

Sakharova, L.V., Shiryayeva, E.V., Zhukov M.Yu. Approximation of weak solution for the problem of a pH-gradient creation in isoelectrofocusing. Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences, Vol. 470, Issue 2171, 2014.

Zhukov M.Yu., Shiryayeva E.V. Microhydrodynamics, liquid films and electrophoresis. Rostov-na-Donu: Izd-vo SFEDU, 2014. 240 p. (in Russia)

Zhukov M.Yu., Shiryayeva E.V. Solution of the mathematical physics problems with the help of the finite element package FreeFem++. Rostov-na-Donu: Izd-vo SFEDU, 2014. 256 c. (in Russia)

Zhukov, M. Y., Morad M. A., Shiryayeva E. V. Study of the shallow water equations on the surface of the stationary cylinder. Izvestiya Vuzov. Sev.-Kav. region. Natural. science. 2014. No. 4. P. 32–36. (in Russia)

Zhukov M.Yu., Shiryayeva E.V. LATEX2 ϵ art layout of texts with formulas. Rostov-na-Donu: Izd-vo SFEDU, 2009. 192 p. (in Russia)

Shiryayeva E. V., Vladimirov V. A., Zhukov M. Yu. Theory of rotating electrohydrodynamic flows in a liquid film. Phys. Rev. E. 80, 041603 (2009).

Zhukov M. Yu., Shiryayeva E.V. Rotational EHD flow in a suspended liquid film. Izvestiya Vuzov. Sev.-Kav. region. Natural. science. 2009. No. 4. P. 44–47. (in Russia)

Shiryayeva E.V. Modeling electromigration and electroosmosis in planar microchannels. Izvestiya Vuzov. Sev.-Kav. region. Natural. science. 2009. P. 220–225. (in Russia)

Zhukov M.Yu., Shiryayeva E.V. Using the finite element package FreeFem++ for problems of hydrodynamics, electrophoresis, and biology. Rostov-na-Donu: Izd-vo SFEDU, 2009. 192 p. (in Russia)