

## MRC Publications in International refereed Journals

### 2009

1. **Shevtsova V., Melnikov D. E., and Nepomnyashchy A.**, New flow regimes generated by mode coupling in buoyant-thermocapillary convection, **Phys. Rev. Lett.** 102, 134503 (2009)
2. **Ryzhkov I. and Shevtsova V.**, Convective stability of multi-component fluids in the thermo-gravitational column, **Phys. Rev. E.**, Vol. 79, 026308 (2009).
3. **Grosfils P., Dubois F., Yourassowsky C., and A. De Wit**, "Hot spots revealed by simultaneous experimental measurement of the two-dimensional concentration and temperature fields of an exothermic chemical front during finger-pattern formation", **Phys. Rev. E** 79, 017301 (2009)
4. **Ryzhkov I.I., Shevtsova V.**, Long-wave instability of a multicomponent fluid layer with the Soret effect, **Physics of Fluids.**, V21,014102-14, (2009)
5. **Simanovskii I. B., Viviani A., Dubois F. and J.C.Legros**, Nonlinear regimes of anticonvection, thermocapillarity, and Rayleigh–Benard convection in two-layer systems", **Phys. Fluids** 21, 052106 (2009)
6. **Van Vaerenbergh S., Srinivasan S. and M. Z. Saghir**, Thermodiffusion in multicomponent hydrocarbon mixtures: Experimental investigations and computational analysis. **J. Chem. Physics**, 133, 114505(2009)
7. **Yu. Gaponenko, V Shevtsova**, Effects of vibrations on dynamics of miscible liquids, **Acta Astronautica**, 2009, doi:10.1016/j.actaastro.2009.05.019
8. **Shevtsova V, Gaponenko Yu., Melnikov D.E., Ryzhkov I.I., Mialdun A.**, Study of thermoconvective flows induced by vibrations in reduced gravity, **Acta Astronautica**, 2009, doi:10.1016/j.actaastro.2009.05.023
9. **Hennenberg M., Slavtchev S. and Weyssow B.**, Modelling of an oscillatory magnetic field action on a ferrofluid layer, **Microgravity Sci. and Technol.**, Vol. 21, Supplement 1, pp45-50, (2009)
10. **Hennenberg M., Slavtchev S. and Weyssow B.**, Thermal Marangoni instability and magnetic pressure for a thin ferrofluid layer, **Annals of the New York Academy of Sciences**, Vol. 116,1 pp361-378, (2009)
11. **D.E. Melnikov, V. Shevtsova**, Origin of axially running waves in liquid bridges, **Microgravity Sci. Technol.**, V21, 1-2, pp53-57, (2009)
12. **Mialdun A., Shevtsova V.**, Open questions on reliable measurements of soret coefficients, **Microgravity Sci. Technol.**,V21,1 pp 31-36, (2009)
13. **Ryzhkov I.I., V. Shevtsova**, On the cross--diffusion and soret effect in multicomponent mixtures, **Microgravity Sci. Technol.**, V21,1, pp37-40, (2009)

14. **Kabov O.A. and Zaitsev D.V.**, Effect of shear stress and gravity on rupture of a locally heated liquid film, **Multiphase Scien. and Techn.**, Vol. 21, Issue 3, pp. 249-266, 2009.
15. **Kawanami O., Ohta H., Kabov O., Sakata Y., Kotani Y., Asada Y., Nagayasu T., Shinmoto Y., Chikov S., Queeckers P. and Straub J.**, Heat Transfer and Bubble Behaviors in Microgravity Pool Boiling in ESA Parabolic Flight Experiment, **Microgravity Sci. Technol.**, Vol. 21, Suppl. 1, p. S3-S8, 2009.
16. **Goncharova O.N. and Kabov O.A.**, Numerical Modeling of the Tangential Stress Effects on Convective Fluid Flows in an Open Cavity, **Microgravity Sci. Technol.**, Vol. 21, Suppl. 1, p. S119-S127, 2009.
17. **Goncharova O.N. and Kabov O.A.**, Gas Flow and Thermocapillary Effects on Fluid Flow Dynamics in a Horizontal Layer, **Microgravity Sci. Technol.**, Vol. 21, Suppl. 1, p. S129-S137, 2009.
18. **Kabova Yu.O., Kuznetsov V.V. and Kabov O.A.**, The effect of gravity and shear stress on a liquid film driven in a horizontal minichannel at local heating, **Microgravity Sci. Technol.**, Vol. 21, Suppl. 1, p. S145-S152, 2009.
19. **Chinnov E.A., Guzanov V.V., Cheverda V., Markovich D.M and Kabov O.A.**, Regimes of Two-Phase Flow in Short Rectangular Channel, **Microgravity Sci. Technol.**, Vol. 21, Suppl. 1, p. S199-S205, 2009.
20. **Iorio C.S., Goncharova O.N. and Kabov O.A.**, Study of Evaporative Convection in an Open Cavity under Shear Stress Flow, **Microgravity Sci. Technol.**, Vol. 21, Suppl. 1, p. S313-S319, 2009.
21. **Goncharova O.N. and Kabov O.A.**, Gravitational-Thermocapillary Convection of Fluid in the Horizontal Layer in Co-Current Gas Flow, **Doklady Physics**, Vol. 54, No. 5, pp. 242-247, 2009.

## 2008

1. **Mialdun A., Ryzhkov I.I., D.E. Melnikov, V. Shevtsova**, Experimental evidence of thermal vibrational convection in a nonuniformly heated fluid in a reduced gravity environment, **Physical Review Letter**, Vol. 101, 084501 (2008)
2. **Melnikov D.E., Shevtsova V. and Legros J.C.** Impact of conditions at start-up on thermovibrational convective flow , **Phys. Rev. E.**, Vol.78, No.5, 056306, (2008).
3. **Mialdun A. and Shevtsova V.**, Development of optical digital interferometry technique for measurement of thermodiffusion coefficients, **Int. J. Heat and Mass Transfer**, pp 3164-3178, (2008)
4. **Callens N., Minetti C., Coupier G., Mader M.-A., Dubois F., Misbah C. and T. Podgorski**, Hydrodynamic lift of vesicles under shear flow in microgravity, **Europhysics Letters**, 83 (2), (2008)
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6. **Dubois F., Grosfils P.**, Dark field Digital holographic microscopy to investigate nano-sized objects or smaller than the optical resolution", **Opt. Lett.** **33**, 2605-2607 (2008)

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9. **Gaponenko Yu and Shevtsova V**, Mixing under vibrations in reduced gravity, **Microgravity Science and Techn.**, v. 20 (1), p. 307-311 (2008).
10. **Montanero J.M, Ferrera C., Shevtsova V. M.**, Experimental study of the free surface deformation due to thermal convection in liquid bridges, **Experiments in Fluids**, Vol. 45, pp. 1087-1101 (2008)
11. **Ferrera C., Montanero J.M, Mialdun A., Shevtsova V., Cabezas M. G.**, A new experimental technique for measuring the dynamical free surface deformation in liquid bridges due to thermal convection, **Meas. Sci. Technol.** 19 (2008) 015410
12. **Melnikov D.E., Ryzhkov I.I., Mialdun A., and Shevtsova V.**, Thermovibrational convection in microgravity: preparation of a parabolic flight experiment, **Microgravity Science and Techn.**, V. 20 (1), p. 29-39 (2008)
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15. **Hennenberg, M., Weyssow, B., Slavtchev, S. and Scheid, B.** coupling between stationary Marangoni and Cowsley-Rosensweig instabilities in a deformable ferrofluid layer, **Fluid Dynamics & Materials Processing Vol. 112, no 1**, pp 1-9 (2008)
16. **Gatapova E.Ya. and Kabov O.A.**, Shear-driven flows of locally heated liquid films, **Int. J. Heat and Mass Transfer**, Vol. 51, No. 19-20, p. 4797-4810, 2008.
17. **Celata G. P., Colin C., Colinet P., Di Marco P., Gambaryan-Roisman T., Kabov O., Kyriopoulos O., Stephan P., Tadrist L., Tropea C.**, Bubbles, drops, films: transferring heat in space, **Europhysics News**, Vol. 39, No. 4, p. 23-25, 2008.
18. **J. Blum, A.-C. Lévassieur-Regourd, O. Muñoz, R.J. Slobodrian and A. Vedernikov**, Dust in space **Europhysics News**, Vol. 39 No. 3, p. 27 (May-June 2008)
19. **Marchuk I.V. and Kabov O.A.**, Vapor Condensation on Curvilinear Disk-Shaped Fin at Microgravity, **Microgravity Sci. Technol.**, Vol. 20, 2008.
20. **Kabova Yu.O., Kuznetsov V.V., Kabov O.A.**, Gravity effect on the locally heated liquid film driven by gas flow in an inclined minichannel, **Microgravity Sci. Technol.**, Vol. 20, p. 187-192, 2008.

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1. **Shevtsova V., Melnikov D., J.C. Legros, Y. Yan, Z. Saghir, T. Lyubimova, G. Sedelnikov, B. Roux,** Influence of vibrations on thermodiffusion in binary mixture. Benchmark of numerical solutions. **Phys. Fluids**, Vol.19, 017111 (2007)
2. **Ryzhkov I. and Shevtsova V.,** On thermal diffusion and convection in multicomponent mixtures with the application to the thermogravitational column **Physics of Fluids**, 19, 027101, 2007
3. **Trevelyan P. M. J., Scheid B., Ruyer-Quil C. and Kalliadasis S.,** Heated falling films, **Journal of Fluid Mechanics**, Volume 592, (2007)
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2. **M. Hennenberg, B. Weysow, S. Slavtchev, Th. Desai, and B. Scheid**, Steady flows of a laterally heated ferrofluid layer: influence of inclined strong magnetic field and gravity level , **Phys. Fluids** 18, 093602 (2006)
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