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Chief Researcher at the Institute of Applied Mathematics, Faculty of Mathematics and Informatics, Vilnius University, Naugarduko Str., 24, Vilnius, 03225 Lithuania,
Editor-in-Chief of Applicable Analysis and
Emeritus Distinguished Professor (classe exceptionnelle PREX2),
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Date of birth: 12/03/1954

SCIENTIFIC GRADES :
Doctor of Sciences Physics and Mathematics (Docteur d'Etat) 30 09 1989 Moscow State University,
PH.D: 10 10 1979 Moscow State University,

EDUCATION :
Moscow State University, Dept.of Numerical Analysis and Informatics, 1971- 1976.

AWARDS, HONORS :
Medal and Grand Prix of the USSR Academy of Sciences: 1986
Prime d'encadrement doctoral et de recherche fellow: 1994-1998, 1998-2001,2001-2005,2005-2009,
Prime d'excellence scientifique fellow: 2009-2013, 2013-2017

PROFESSIONAL EXPERIENCE :
Professor class exceptionnelle (full professor), ICJ, UMR CNRS 5208, Director of the Research Federative Structure MODMAD FED 4169 of the University Jean Monnet and the Ecole des Mines (National Engineering School of Mines) of Saint-Etienne 2011-2023 and Chief Researcher at the Institute of Applied Mathematics, Faculty of Mathematics and Informatics, Vilnius University since 2018
PR1, 2004-2011.
Professor, Head of the Laboratory of Mathematics of the University of Saint-Etienne LAMUSE EA 3989 : PR1, 2004-2011.
Professor, Saint Etienne University Jean Monnet, Equipe d'Analyse Numerique: 1993-2004.
Professor of Moscow State University Lomonosov, Dept. of Mathematics and Mechanics: 1993-1994.
Senior researcher of the Institute of Nuclear Electric Power Stations Safety of the USSR Academy of Sciences: 1990-1991.
Associate Professor of Moscow State University Lomonosov, Dept. of Mathematics and Mechanics: 1986-1992.
Assistant Professor of Moscow State University Lomonosov, Dept. of Mathematics and Mechanics: 1982-1986.
Assistant Professor of Moscow State University M.V.Lomonosov, Dept.of Numerical Analysis and Informatics: 1979-1982

LONG MISSIONS
Affiliated to CMM UMI CNRS 2807 University of Chile, Beauchef, 851, Santiago, Chile (from 01.09.2016 till 28.02.2017 and from 01.09.2017 till 28.02.2018) and to Interdisciplinary Research Center J.-V.Poncelet UMI CNRS 2615 (Moscow) (since 2014).

SCIENTIFIC ADVISING :
20 PH.D thesis defended + the supervising of four postdoctoral positions; actually 1 Ph.D. supervision

RESEARCH ACTIVITY :
3 monographs, 158 articles, 150 papers in proceedings, an invention, a textbook.

The central research direction is concerned with homogenization of partial derivatives equations and mathematical modelling of heterogeneous media. From mathematical point of view it is an asymptotic

study of PDEs with rapidly oscillating coefficients or boundaries; from mechanical point of view this asymptotic analysis is applied to the mathematical modelling of composite materials, lattice structures, industrial installations, frames, heterogeneous plates and rods, porous media, flows in thin tubular structures, in particular, blood circulation. The main result during some last years is the invention and justification of the method of partial asymptotic decomposition of the domain (MAPDD) and its applications to the multi-scale modelling in biology and medicine, in particular, the construction of the complete asymptotic expansion of the solution and MAPDD for the steady and non-steady Navier-Stokes equations in thin tube structures.

NATIONAL GRANTS AND INDUSTRIAL COOPERATION :

GDR 2021 MORPHEA « Morphologie et phénomènes d'agrégation »(2018-2022)

The Principal Investigator of the Regional Rhone-Alpes grants:
2004-2006 "Multi-scale Modelling for nano-structures",
2001-2003: "Mathematical simulation of extrusion" with CERAP company and
"Mathematical simulation of composite materials: from technological formation procedure to final properties" with HEXCEL Fabrics company,
1998-2000: "Mathematical analysis and numerical simulation of thermoplastic elastomer materials" with the enterprise MULTIBASE.

INTERNATIONAL COOPERATION

Coordination of international projects

Head of the project “Multiscale Mathematical and Computer Modeling for Flows in Networks: Application to Treatment of Cardiovascular Diseases (MatModNet)” 09.3.3-LMT-K-712-17-003 of the EU structural funds with Vilnius University, 2020-2023, (financial support 1 000000 euros)
Head of the project: PICS CNRS 6583 «Multi-scale mathematical models in biology » MATBIO 2015-2017 with the Center for Theoretical Problems in Physical-Chemical Pharmacology of Russian Academy of Sciences.
One year mission to the laboratory CMM UMI CNRS 2807, Santiago Chile, thematic year on miltiscale modeling, 2016-2018
One year mission to the laboratory J.-V.Poncelet UMI CNRS 2615 (Moscow) on the multiscale modeling in biology and medicine 2014-2015.
Head of the French-German project PROCOPE EGIDE/DAAD 28481WB "Homogenization based optimization for elasticity on the network of beams" 2013-2014
The Principal investigator of the grant “Multi-scale models in physics, biology and technologies: asymptotic and numerical methods” in the frame of the Federal Special Program “Research and scientific-educational staff of innovated Russia” 2009-2013 (Action 1.5, state contract № 02.740.11.5091), 2009-2010
The Principal investigator of the grant “Multi-scale problems: analysis and methods” in the frame of the same Federal Special Program (Action 1.5, state contract № 14.740.11.0875), 2011-2012
The Principal investigator of the grant “Construction, analysis and application of the methodes of solution of multi-scale boundary value and initial-boundary value problems” 14.B37.21.0864 in the frame of the same Federal Special Program (Action 1.5, state contract № 14.B37.21.0864), 2012-2013

Participation in the international projects

Project of European Social Fund according to the activity ‘Improvement of researchers’ qualification by implementing world-class R and D projects’ No. 09.3.3-LMT-K-712-01-0012 (2018-2021), Multiscale Modeling for Viscous Flows in Domains with Complex Geometry (MuSCoGeo), principal invited investigator
PRC France-Russia “In silico analysis of mechanisms regulating microvascular thrombus formation”, 2019-2021.

Project of the Russian National Science Foundation 14-11-00306 on the non-standard boundary conditions (2014-2018), principal investigator
PICS CNRS grant with the National Haematology Centre and with Moscow State University Lomonosov (2004-2006 et 2010-2012) « Modelling of Blood Diseases ».
PICS CNRS with the Academy of Sciences of Romania (2005-2007)
European Research Group "Regular and Chaotic Hydrodynamics"(2006-2008)
French –Italian grant between the universities of Saint-Etienne, Clérmont-Férrand, Ecole normale de Cachan and universities of Naples, Cassino, Benevento (2003-2009).
INTAS with Institute of Mathematical Modelling of Russian Academy of Sciences(1997-1999),
TEMPRA with the University of Saint-Petersburg (1996 – 1998)
Russian-French Lyapunov Institute project with Moscow State University M.V.Lomonosov, (2002 – 2004);
EURROMMAT with the Academy of Sciences of Romania (2002-2004)
Cooperation with the Rogaland Research Institute (Stavanger, Norway),
Moscow Power Engineering Institute, Pennsylvania State University, University of Cantabria (Spain).

EDITORIAL BOARD MEMBERSHIP
Editor-in-Chief of Applicable Analysis
Member of the editorial board of
-International Journal of Computational Civil and Structural Engineering : 1998-present.
-International Journal for Multi-scale Computational Engineering : 2002-present
-Complex Variables and Elliptic Equations Journal : 2010-present.
- Mathematical Modeling and Computational Methods : 2014-present.
-Composites: Mechanics, Computations, Applications, an International Journal: 2016-present
-Vestnik MEI: 2017-present
-Mathematical Modeling and Analysis: 2020-present
-Mathematics: 2021-present

ADMINISTRATIVE FUNCTIONS
Director of the Research Federative Structure
MODMAD FED 4169 of the University Jean Monnet and of the Ecole des Mines (National Engineering School of Mines) of Saint-Etienne: 2011- 2023
Member of the Coordination Committee of GDR 2021 MORPHEA (« Morphologie et phénomènes d'agrégation ») (2018- present)
Member of the bureau of the Research Federation on Mathematics of Rhône-Alpes-Auvergne (FR CNRS 3490). This federation relates l'Ecole centrale de Lyon, l'Institut Polytechnique de Grenoble, l'INSA de Lyon, l'ENS Lyon and 5 universities (Savoie, Clermont-Ferrand 2, Lyon 1, UJM, Grenoble 1 et Pierre Mendes France) 2013-2014.
Head of the Laboratory "Equipe d'Analyse Numérique" of Saint-Etienne University EA 3058: 2002-2004
Head of the Laboratory of Mathematics of the University of Saint Etienne LaMUSE EA3989, 2005-2011.
Head of the research project PPF ALLIANA in cooperation with Ecole des Mines de Saint Etienne, 2007-2010.
Head of the undergraduate program (Master) "Mathematical Modeling and Applications" (StEtienne University) 2003-2019

TEACHING EXPERIENCE (since 1979)
Moscow State University M.V.Lomonosov (1979-1993), University Jean Monnet, St-Etienne,France (1993-present)
Courses on Mathematical Modelling for Ph.D. students, PDEs, Numerical Analysis for undergraduates, Functional Analysis for the fourth year students, Numerical Analysis for the third year students, Algebra, Analysis for the first and second years, special courses on Homogenization, Mathematical theory of elasticity, Asymptotic methods for the undergraduate students.

During the thematical year 2014-2015: mini-course for the master students of the SkolTech "Advanced Composite Materials" and course on multiscale modelling in biology for the master students of the Moscow Power Energy Institute. During the thematical years 2016-2017 and 2017-2018: Multiscale Mathematical Modeling in Engineering and Biology at the University of Chile; invited courses (21 h) on Multiscale Mathematical Modeling in Engineering and Biology at Politecnico di Torino (2018), University of Sannio (2021), University of Campania (2023).

Beginning of the professional activity: Moscow State University M.V.Lomonosov (1976-1993) continued at the University Jean Monnet, Saint-Etienne, France (since 1993).
Invited stays (2000-)

1. Norway (Rogaland Research Institut, Stavanger) 2000 (two weeks), 2002 (two weeks), (High Technical School of Narvik) 2006 (two weeks), 2007 (two weeks), 2010 (two weeks), 2011 (two weeks), 2012 (two weeks)

2. Romania, Bucarest (Institute of Mathematics of the Romanian Academy of Sciences) 2002 (1 month), 2004 (two weeks)

3. USA, Pennsylvania, (PennState University) 2003 (one week), 2004 (1 month), (Worcester Polytechnical Institute), 2013 (1 month), 2016 (1 month), 2017 (1 month), 2018 (1 week), 2019 (2 weeks)

4. Spain (University of Cantabria, Santander) 2003 (one week), 2005 (one week), 2018 (1 week).

5. Italy (Universities of Cassino, of Naples) 2003 (two weeks), 2004 (two weeks), 2005 (two weeks), 2006 (two weeks), 2007 (two weeks), 2008 (two weeks), 2009 (two weeks), 2010 (two weeks), 2013 (one week), Torino Politecnico 2017 (1 week), 2019 (1 week), University of Naples, 2018 (2weeks), 2019 (1 week), 2023 (1 month)

6. Russia, Moscow Power Energy Institute, 2004 (1 month), 2005 (two weeks), 2007 (two weeks), 2009 (two months), 2010 (three months), 2011 (two months), 2012 (two months), 2013 (two months), Thematical year 2014-2015 « Mathematical multiscale modeling in biology and medicine» at the UMI CNRS 2615 J.-V. Poncelet (Moscow), UMI CNRS 2615 J.-V. Poncelet 2017 (4 months), 2018 (2 months), 2019 (2 months)

7. Check Republic , Doppler Institute 2007 (one week)

8. Lithuania, Institute of Mathematics and Informatics, Vilnius, 2008 (1 week), 2012 (1 month), 2016 (1 week), 2017 (1week), 2018 (1 week), 2020 (3 months), 2021 (4 months)

9. Germany, Fraunhofer Institute for Applied Mathematics, Kaiserslautern 2013(1 month), 2014 (1 month)

10. Chile, Thematical year 2016-2018 CMM UMI CNRS 2807 "Multiscale modeling in biology" (12 months)

Organization of workshops :

-Minisymposium "Homogenization Methods and their Applications in Mechanics of Composite Materials and Lattice Structures" au Third International Congress on Industrial and Applied Mathematics a Hamburg (Allemagne), 1995 (co-organizers: N.Bakhvalov et U.Hornung)

-Minisymposium "Homogenization and Applications" at
Congrès National d'Analyse Numérique , 1997, Domaine d'Imbours,

- French-Russian Workshop on the mathematical modeling of heterogeneous media, October 1998 (co-organizers: A.Bourgeat et C.Carasso).

-Minisymposium "Nonlinear geometrical acoustics of inhomogeneous media and the problem of sonic boom propagation through the real atmosphere" at Fourth International Conference on Theoretical and Computational Acoustics May10-14 1999, Trieste, Italy (co-organizer: O.Rudenko).

- International Workshop "Asymptotic and Numerical Analysis of Structures and of Heterogeneous Media" (ANASTHEM) June 26-30, 2000 , Saint-Petersburg, Russia. (Head of the organizing committee).

- International Workshop « Modelling of Blood Deseases », November 2007, Lyon, France (member of the organizing committee)

- The 2nd and the 3rd International Workshop « Mathematical Modeling in Biology and Medicine » June 2010 and January 2011, Moscow, Institute of Numerical Mathematics of Russian Academy of Sciences (member of the organizing committee)

- Workshop on Differential and Integral Equations and Applications, October 2010, Moscow, Moscow State Technical University Baumann (member of the organizing committee)

-International Conference « Multiscale Methods and Qualitative Properties for Differential Operators " May 2011, Naples (member of the organizing committee)

-1st International Workshop "Multiscale Methods and Modelling" October 2011, Saint-Etienne (organizer)

-2nd International Workshop « Multiscale Methods and Modelling" October 2012, Saint-Etienne (organizer)

-3rd International Workshop « Multiscale Methods and Modelling" October 2013, Saint-Etienne (organizer)

-4th International Workshop « Multiscale Methods and Modelling (in Biology and Medicine)" October 2014, Moscow
(organizer)

- Minisymposium "Asymptotic and Numerical Methods for Viscous and Elastic Media" within the International Conference "Asymptotic Problems, Elliptic and Parabolic Issues" June 2015, Vilnius, Lithuania (organizer)

- International Summer School Modelling and Control of Complex Systems, July 4-8 2014, Suzdal, Russia (organizer)

-Thematical year 2014-2015 « Modélisation mathématique multi-échelle en biologie et médecine » at UMI CNRS 2615 J.-V. Poncelet (Moscow)

-Fifth International Conference "Multiscale Modeling and Methods: Up-scaling in Engineering and Medicine" June 25-27, 2015, Moscow (organizer).

- International Summer School Modelling and Control of Complex Systems, July 2-7 2015, Suzdal, Russia (member of the program committee)

-International conference AMADE-2015, Minsk, September 2015 (member of the scientific committee)

-7th Russian Workshop on Mathematical Models and Numerical Methods in Biomathematics and Special Session on Numerical Methods for Viscous and Elastic Media and Applications to Biomathematics, Moscow, October, 2015 (member of the organizing committee)

- Sixth International Conference Multiscale Modeling and Methods, Saint-Etienne, November 9,10, 2015 (co-organizer with S.Avril).

-International Conference on Differential Equations and Dynamical Systems, July 8-12 2016, Suzdal, Russia (member of the scientific committee)

- Seventh International Conference Multiscale Modeling and Methods and Summer School on Cardiovascular Modeling, Santiago de Chile, January 16-20, 2017 http://eventos.cmm.uchile.cl/multiscale2017/ (co-organizer with C.Conca and C.Bertoglio)

- Minisymposium "Multiscale Analysis of Problems of Mechanics and Biology" within Days on Diffraction (International Conference), June 19-23 2017, St.Petersburg (organizer).

- Eighth International Conference Multiscale Modeling and Methods: Applications in Engineering, Biology and Medicine and Summer School on Cardiovascular Modeling, Santiago de Chile, January 8-11, 2018 http://eventos.cmm.uchile.cl/multiscale2018/ (co-organizer with C.Conca and C.Bertoglio)

- International Workshop Mathematical Modeling in Hemodynamics, November 19,20, 2018, Saint-Etienne https://www.univ-st-etienne.fr/fr/mod-mad/agenda-actualites/actualites-2018-2019/workshop-mathematical-modeling.html (co-organizer with S.Avril)

- Nineth International Conference Multiscale Modeling and Methods, June 4 2019, Saint-Etienne https://www.univ-st-etienne.fr/fr/mod-mad/agenda-actualites/actualites-2018-2019/nineth-international-workshop.html (organizer)

-International Conference on Multiscale Modeling in Fluid Mechanics and Fluid-Structure Interaction, 7- 11 October, 2019, Vilnius, Lithuania https://www.muscogeo.mif.vu.lt/conference (co-organizer with K.Pileckas)

-Tenth international workshop Multiscale Modeling and Methods: Application in Engineering, Biology and Medicine, 22-23 June 2021, Portoroz, Slovenia,
Minisymposium in the frame of the 8th European Congress of Mathematics (co-organizer with K.Pileckas)

-Eleventh international workshop Multiscale Modeling and Methods: Application in Engineering, Biology and Medicine, 24-26 October 2022, Vilnius, Lithuania
-International Workshop Mathematical Modeling in Hemodynamics, December 5,2022, Saint-Etienne (co-organizer with S.Avril)
-International workshop Numerical Modeling in Hemodynamics May 18-20 2023, Trakai, Lithuania (co-organizer with K.Pileckas)
-International minisymposium Asymptotic Analysis : Applications in Mechanics and Biology, in the frame of the 26th International Conference on Mathematical Modelling and Analysis, May 30 –June 2, 2023, Jurmala, Latvia (co-organizer with K.Pileckas)
-Organizer of the seminar of the SFR MODMAD (since 2011)

Participation in expertizes: NSF (USA), Israel Science Foundation (ISF), FONDACYT (Chile), Croatian Science Foundation (HRZZ), Shota Rustaveli National Science Foundation (SRNSF), Georgia, Foundation Dynastia, Grantova Agentura Ceske Republik (Czech Science Foundation), Norvegian Ministry of Research and Higher Education,), Prix du Conseil Départemental du Val-de-Marne (2017, 2018, 2019,2020).

LIST OF PAPERS

BOOKS

1. Bakhvalov N.S., Panasenko G.P. "Homogenization: Averaging processes in periodic media." Nauka, Moscow, 1984, 352pp. (in Russian); English transl., Kluwer, Dordrecht/Boston/London,1989, 366 pp.
2. Panasenko G.P. "Multi-Scale Modelling for Structures and Composites", Springer, Dordrecht, 2005, 398 pp.
3. Panasenko G., Introduction to Multiscale Mathematical Modeling, World Scientific, New Jersey/London/Singapore/Beijing/Shanghai/Hong Kong/Taipei/Chennai/Tokio, 2022

ARTICLES in the international scientific journals

4. Landis E.M., Panasenko G.P."Theorem of asymptotics of solutions to elliptic equations with coefficients which are periodic with respect to all variables except one". Doklady Akademii Nauk SSSR,1977, 235, 6 (in Russian); English transl. in Soviet Math. Dokl.,1977,18,4,1140-1143.
5. Panasenko G.P. "High order asymptotics of solutions to equations with rapidly oscillating coefficients. Doklady Akademii Nauk SSSR,1978,240,6,1293-1296(in Russian); English transl. in Soviet Math.Doklady,1979.
6. Panasenko G.P. "High order asymptotics of solutions of problems on the contact of periodic structures." Mathematics of the USSR- Sborhik,1979,110 (152), 4,505-538(in Russian); English transl. in Math. USSR Sb., 1981, 38, 4, 465-494.
7. Karabutov A.A., Lapshin E.A., Panasenko G.P., Rudenko O.V., "The generating of powerfull pulses of the lazer heating of a surface. ", Numerical Methods and Software, 31,1979, 174-183 (in Russian).
8. Karabutov A.A., Lapshin E.A., Panasenko G.P., Rudenko O.V., Vasiljeva O.A. "On the evolution of the intensive pulses for finite Reunold's number", Moscow University Vestnik , ser.3, 1979, 3, 77-81 (in Russian).
9. Landis E.M., Panasenko G.P." On a variant of a theorem of the Phragmen-Lindeloff type for elliptic equations with coefficients that are periodic in all variables except one. "Trudy seminara I.G.Petrovskogo, Moscow, Moscow University Publ.,1979,105-136(Russian).
10. Panasenko G.P. "Asymptotics of solutions and eigenvalues of elliptic equations with strongly variable coefficients", Doklady Akademii Nauk SSSR.,1980,252,6,1320-1325(in Russian).English transl. in Soviet Math. Dokl., 1980.
11. Panasenko G.P. "Averaging periodic structures with well-conducting inhomogeneities", Moscow University Vestnik, ser.15,1980,3,4-11(in Russian).
12. Panasenko G.P. "The principle of average operator decomposition for a set of non-linear system of equations in periodic and random skeletal constructions". Doklady Akademii Nauk SSSR,1982, 263, 1 (in Russian); Soviet Math. Doklady,1982, 25, 2,290-295 (English translation).
13. Iosif'jan G.A., Oleinik O.A., Panasenko G.P. "Asymptotic expansion of solution for a system of the elasticity theory equations with periodic, fast oscillating coefficients. "Doklady Akademii Nauk SSSR 1982,226, No 1, 18-22 (in Russian). English transl. Soviet Math. Dokl., 1982, 26, No 2, 290-294.

14. Iosif'jan G.A., Oleinik O.A., Panasenko G.P. "Asymptotic expansion of solutions of the system of elasticity theory in perforated domains. "Mathematics of the USSR- Sbornik, 1982, 120, No1, 22-41 (in Russian). English transl. in Math. USSR Sbornik, 1983.
15. Panasenko G.P. "Averaging processes in frame constructions with random properties." USSR Computational Mathematics and Mathematical Physics (Zh.Vych.Mat.Mat.Fiz.), 1983, 23, No 5,1098-1109 (in Russian). English transl. in USSR Comput. Maths. Math. Phys., 1983, 23, No 5, 48-55.
16. Panasenko G.P. "Averaging processes in framework structures. "Mathematics of the USSR-Sbornik, 1983, 122, 2, 220-231(in Russian). English translation in Math.USSR Sbornik 1985, 50, 1, 213-225.
17. Panasenko G.P. "Homogenization of fields in composite materials with high modulus reinforcement." Vestnik Moscow University, ser.15, 1983, No 2, 20-27 (in Russian).
18. Oleinik O.A., Panasenko G.P., Yosifian G.A. "Homogenization and asymptotic expansions for solutions of the elasticity system with rapidly oscillating periodic coefficients." Applicable Analysis, 1983, 15, 1-4, 15-32.
19. Panasenko G.P. "Strength of spatially reinforced composite materials." Vestnik Moscow University, ser. 15, 1983, No 2, 20-27 (in Russian).
20. Panasenko G.P. "Asymptotics of eigenvalues of elliptic equations with strongly variable coefficients", Trudy seminara Petrovskogo, Moscow, Moscow University Publ., 1987, 202-217(Russian).
21. Panasenko G.P., Reztsov M.V. "Averaging the 3-D elasticity problem in non homogeneous plates. "Doklady Akademii Nauk SSSR, 1987, 294, 5, 1061-1065 (in Russian); English transl. in Soviet Math. Dokl., 1987, 35, 3, 630-636 .
22. Panasenko G.P. "Numerical solution of cell problems in averaging theory." USSR Computational Mathematics and Mathematical Physics (Zh.Vyc.Mat.i Mat.Fis.),1988, 28, 281-286 (in Russian) English transl. USSR Comput. Maths. And Math. Phys., 1988, 28, No1, 183-186.
23. Bakhvalov N.S., Eglit M.E., Panasenko G.P., Shtaras A.L. "Numerical-asymptotic methods" in "Asymptotic Methods in Mathematical Physics", Kiev, Naukova Dumka, 1988,18-28 (in Russian).
24. Bakhvalov N.S., Panasenko G.P., Shtaras A.L. "Method of homogenization of partial derivatives equations" in "Modern Problems of Mathematics", 34,1988 (in Russian), English transl. in Encyclopedia of Mathematics, 34, Partial Differential equations V. Asymptotic Methods for Partial Differential Equations. M.V.Fedoryuk (Ed.) Springer-Verlag , 1998, pp 211-238.
25. Panasenko G.P. "Averaging of processes in strongly inhomogeneous media", Doklady Akademii Nauk SSSR,1988, 298, 1, 76-79 (in Russian). English transl. in Dokl.,Math. 1988, 33, 1, 20-22.
26. Panasenko G.P. "Multicomponent homogenization of processes in essentially non-homogeneous structures." Mathematics USSRSbornik, 1990, 181,1,134-142(in Russian); English transl. in Math. USSR Sbornik, 1991, 69, 1, 143-153.
27. Panasenko G.P. "Numerical-asymptotic multicomponent averaging method for equations with contrasting coefficients". USSR Computational Mathematics and Mathematical Physics (Zh.Vyc. Mat. i Mat. Fiz.),1990, 30, No 2,134-142 (in Russian). English transl. by PLENUM USSR Comput. Math . Math. Phys.
28. Kozlova M.V., Panasenko G.P."Averaging of the 3-dimensional problem of elasticity theory for an inhomogeneous rod."USSR Computational Mathematics and Mathematical Physics (Zh. Vyc. Mat. Mat. Fiz.),1991, 10, 1592-1596 (in Russian). English transl. by PLENUM in Journal of Computing Math. and Math. Physics USSR.
29. Panasenko G.P. "Asymptotic solutions of the elasticity theory system of equations for lattice and skeletal structures". Math. Sb.,1 992, 183, 1, 89-113 (in Russian). English transl. by AMS in Russian Acad. Sci. Sbornik Math. 75 (1993), no 1, 85-110.

30. Panasenko G.P. "Averaged system of equations of the theory of elasticity in a medium with weakly compressible inclusions". Math. Zametki, 1992, 51, 1, 126-133 (in Russian), English transl. by PLENUM pp.81-86.
31. Panasenko G.P., Saint Jean Paulin J. "An asymptotic analysis of junctions of elastic non-homogeneous rods: Boundary layers and asymptotic expansions". Journal of Computational Math. and Math. Physics (Zh. V.M. i M.F.) USSR, 1993, 33, n. 11, pp. 1693-1721.
32. Panasenko G.P. "Asymptotic analysis of bar systems. I", Russian Journal of Math. Physics, v.2, No 3, 1994 , pp. 325-352.
33. Panasenko G.P. "Averaging of the system of equations of motion of a viscous fluid in a porous medium", PMM J. Applied Maths and Mechs., vol. 59, No 2, 1995, pp.321-324.
34. Panasenko G.P."L-convergence and optimal design of rod structures" C.R. Acad. Sci. Paris, t.320, Série I, 1995, pp. 1283-1288.
35. Gnélécoumbaga S., Panasenko G.P."On the problem of contact of highly conductive and perforated domains " C.R. Acad. Sci.Paris, t. 321, Série I, 1995, pp. 809-815.
36. Panasenko G.P. "Multicomponent homogenization of the vibration problem for incompressible media with heavy and rigid inclusions" C.R. Acad. Sci. Paris, t. 321, Série I, 1995, pp. 1109-1114.
37. Panasenko G.P. "Asymptotic analysis of bar systems.II", Russian Journal of Math. Physics, v.4, No 1, 1996, pp. 87-116.
38. Lapshin A.E., Panasenko G.P. "Asymptotic analysis of the solution of Dirichlet's problem for Poisson's equation posed in periodic lattice-like domain", Vestnik Moscow University, ser. Math. Mech., N 5, 1995, pp.43-50. English version in Publ. de l'Equipe d'Analyse Numérique Lyon - Saint Etienne, No 192, 1995, 10 pp.
39. Lapshin A.E., Panasenko G.P. "Asymptotic expansion of the solution of Dirichlet's problem for Poisson's equation posed in non-periodic lattice-like domain", Trudy seminara I.G.Petrovskogo, vol. 19, 1996, 99-108. English version in Publ. de l'Equipe d'Analyse Numerique Lyon - Saint Etienne, No 195, 1995, 10 pp.
40. Bakhvalov N.S., Panasenko G.P., Eglit M.E. "Effective properties of constructions and composites with inclusions in the form of walls and bars" . Computing Math. and Math. Physics (Zh. Vychisl. Mat. Fiz.), 1996, Vol 36, No 12, pp. 73-79.
41. Lapshin E.A., Panasenko G.P. "Homogenization of the equations of high frequency nonlinear acoustics", C.R. Acad. Sci. Paris, t. 325, Série I, 1997, pp. 931-936.
42. Panasenko G.P. "Homogenization of lattice-like domains: L-convergence". Nonlinear Partial Differential Equations and their Applications College de France Seminar. Ed. D.Cioranescu and J.L.Lions, v.XIII, 1998, Longman (Pitman Research Notes in Mathematics Series, 391), pp. 259-280.
43. Panasenko G.P. "Method of asymptotic partial decomposition of domain", Mathematical Models and Methods in Applied Sciences, v. 8, No 1, 1998, 139-156.
44. Chiheb R., Cioranescu D., El Janati A., Panasenko G.P. "Structures réticulées renforcées en élasticité", C .R. Acad. Sci. Paris, t. 326, Série I, 1998, pp. 897-902.
45. Chiheb R., Panasenko G.P. "Optimization of finite rod structures and L-convergence", Journal of Dynamical and Control Systems, v.4, No.2, 1998, pp.273-304.
46. Panasenko G.P. "Asymptotic expansion of the solution of Navier-Stokes equation in a tube structure ", C.R. Acad. Sci. Paris, t. 326, Série IIb, 1998, pp. 867-872.
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263. Panasenko G., High order homogenization and dimension reduction for elastic and viscoelastic rods and plates. International Conference on Differential Equations and Dynamical Systems, July 4-9, 2014, Suzdal, Russia, Book of Abstracts, p.225, **plenary talk.**
264. Panasenko G., Multiscale models: junction of models of different dimension and applications to hemodynamics. International Summer School Modelling and Control of Complex Systems, July 4-8 2014, Suzdal, Russia,Book of Abstracts, p. 5, **invited lecture.**

265. Panasenko G., Asymptotic expansion of the solution of the Kelvin-Voigt viscoelasticity equation for a thin strip**.** 13th International conference on Integral Methods in Science and Engineering, July, 2014, Karlsruhe, Germany**,** Book of Abstracts, p. 5, **invited lecture.**

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279. Panasenko G., Asymptotic partial decomposition for multistructures. 7th Russian Workshop on Mathematical Models and Numerical Methods in Biomathematics and Special Session on Numerical Methods for Viscous and Elastic Media and Applications to Biomathematics, Moscow, October, 2015. **Co-organizer.**

280. Panasenko G., Models with hybrid dimension for the blood flow, Sixth International Conference Multiscale Modeling and Methods, Saint-Etienne, November 9,10, 2015. **Organizer**.

281. Panasenko G., Pileckas K., Asymptotic analysis of the non-steady Navier-Stokes equations in thin structures, Days on Diffraction (International Conference), June 27-July 1 2016, St.Petersburg, Book of abstracts, pp. 97-98, invited talk on minisymposium "Mathematical Modeling in Biology and Medicine".

282. Panasenko G., Asymptotic partial decomposition for multistructures, International Conference on Differential Equations and Dynamical Systems, July 8-12 2016, Suzdal, Book of abstracts, pp.271-272, **plenary talk**

283. Panasenko G., Asymptotic reduction and numerical strategy for the flows in thin tube structures, 7 European Mathematical Congress, July 17-22 2016, Berlin, invited talk on minisymposium "Multiscale and Homogenization Methods.

284. Bertoglio C., Conca C., Panasenko G., Pileckas K., Junction of models of different dimension for flows in tube structures: interface conditions involving pressure, Seventh International Conference Multiscale Modeling and Methods, Santiago de Chile, January 16-20, 2017. **Organizer**. Book of Abstracts, p.5.

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289. Panasenko G., Hybrid dimension multiscale models for the flows in domains containing thin tube structures, International Conference Multiscale Methods and Large-scale Scientific Computing, July 31- August 3 2017, Yakutsk, Russia, Book of abstracts, pp. 14-15, **plenary talk**

290. Panasenko G. Method of asymptotic partial decomposition for multistructures: the steady Stokes equations, The 8th International Conference on Differential and Functional Differential Equations, August 13-20 2017, Moscow. Book of abstracts, p. 132

291. Panasenko G., Multiscale methods: applications in hemodynamics and material science, Chilean National Encounter of Mathematical Engineering, October 16-20 2017, Santiago, Chile, **plenary talk** http://eventos.cmm.uchile.cl/enim2017/programa/

292. Panasenko G. Homogenization in nonlinear elasticity, International Conference EEQUADD MathAmsud, Santiago, Chile, December 4-7 2017, Book of Abstracts, p.7, **plenary talk** http://eventos.cmm.uchile.cl/eequadd2017/

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294. Canon E., Chardard F., Panasenko G., Stikonene O., A numerical method for fluids in a network of thin tubes in the fast time regime, Eighth International Conference Multiscale Modeling and Methods, Santiago de Chile, January 8-11, 2018. **Organizer**. Book of Abstracts, p.4.

295. Panasenko G., Multicontinuum homogenization of the wave equation in a stratified rod, Eighth International Conference Multiscale Modeling and Methods, Santiago de Chile, January 8-11, 2018. **Organizer**. Book of Abstracts, p.11.

296. Panasenko G., Asymptotic coupling of models of different dimensions: MAPDD, Harold J.Gay lecture at Worcester Polytechnic Institute, April 6, 2018

297. Panasenko G. Couplage de modèles de différentes dimensions appliqué à la mécanique des structures et aux écoulements dans des réseaux de tubes, Journées Scientifiques GDR MORPHEA, 23-24.05.2018, **invited talk**.

298. Panasenko G., Homogenization and biomathematics, International Conference on Differential Equations and Dynamical Systems, July 6-11 2018, Suzdal, Book of abstracts, pp.255-256, **invited talk**.

299. Panasenko G., Homogenization in biological problems, International Conference Multiscale and High-Performance Computing for Multiphysical Problems, August 8-10, 2018, Yakutsk, Russia, Book of abstracts, p. 14, **plenary talk.**

300. Panasenko G., Hybrid dimension multiscale models for the flows in domains containingthin tube structures, II International Conference Multiscale Methods and Large-scale Scientific Computing, August 15-17, 2018, Moscow, Russia, Book of abstracts, p. 19, **plenary talk .**

301. Panasenko G., Equations on a graph for the flows in thin tube structures. Conf. Random graphs and its applications for networks, October 3-5, 2018, Saint-Etinne, France, p.8, **invited talk**.

302. Panasenko G.,Towards Poiseuille-type flow for axisymmetric flow with thin stiff elastic wall, 10th Workshop on Mathematical Models and Numerical Methods in Biomathematics November 6-8, 2018, Moscow, Russia, **invited talk.**

303. Panasenko G., Coupling of models of different dimension for flows in thin tube networks BIOKIBERNETIKA 2018, 3d Russian-German Conference on MultiScale BioMathematics: Coherent Modeling on Human Body System, November 7-9, 2018, Moscow, Russia , **plenary talk.**

304. Panasenko G., Coupling of models for viscous flows of different dimension, International Workshop on Mathematical Modeling in Hemodynamics, November 19-20, 2018, Saint-Etienne, France **(organizer),** Book of Abstracts, p. 11.

305. Panasenko G., Homogenization and multicontinuum models for composites with contrasting properties of components. 1st International Conference on the Advances in Composite Science and Technologies, December 5-8, 2018, Moscow, Russia, **plenary talk.**

306. Panasenko G., Reconstruction of the pressure in the method of asymptotic partial decomposition for the flows in thin domains, International Conference Operators, Operator Families, and Asymptotics II, January 14-17, 2019, Bath, UK, **invited talk.** Book of Abstracts, p.7.
307. Panasenko G. Multicontinuum for the wave propagation in a high contrast laminated beam. Int. Workshop Metamaterials and Composites, April 10-13 2019, Krakow, Poland, **plenary talk.**
308. Panasenko G., Reconstruction of the pressure in method of asymptotic partial decomposition for the flows in thin domains, The First International Conference on Mathematical Physics, Dynamical Systems, Infinite-Dimensional Analysis, 17-21 June 2019, Dolgoprudny, Russia, **plenary talk,** Book of Abstracts, p.66.
309. Panasenko G., High order homogenized models, IV International Conference on Supercomputer Technologies of Mathematical Modelling, 19-21 June 2019, Moscow, Russia, **invited talk.**
310. Panasenko G., Stavre R., Junction of 3D-1D models of a vessel with elastic wall, International Conference on Mathematical Modelling in Biomedicine, September 30 – October 4 2019, Moscow, Russia, **invited talk.** Book of Abstracts, p.75.
311. Canon E., Chardard F., Panasenko G., Pileckas K., Štikonienė O., Asymptotic analysis and hybrid dimension models for the flows in thin tube structure, International Conference on Multiscale Modeling in Fluid Mechanics and Fluid-Structure Interaction, 7- 11 October, 2019, Vilnius, Lithuania, **invited talk.** Book of Abstracts, p.5.
312. Chardard F., Canon E., Panasenko G., Štikonienė O. Numerical solution of the viscous flows in a network of thin tubes: equations on the graph. International Conference on Multiscale Modeling in Fluid Mechanics and Fluid-Structure Interaction, 7- 11 October, 2019, Vilnius, Lithuania, **invited talk.** Book of Abstracts, p.7.
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314. Viallon M.C., Panasenko G., Method of asymptotic partial decomposition with discontinuous junctions. Finite volume implementation. International Conference on Multiscale Modeling in Fluid Mechanics and Fluid-Structure Interaction, 7- 11 October, 2019, Vilnius, Lithuania, **invited talk.** Book of Abstracts, p.22.
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317. Panasenko G., Pileckas K., Vernescu B., Steady state non-Newtonian flow with strain rate dependent viscosity in thin tube structure with no slip boundary condition, 8th European Congress of Mathematics, 20-26 June 2021, Portoroz, Slovenia.
318. Panasenko G., Pileckas K., Vernescu B., Steady state non-Newtonian flow with strain rate dependent viscosity in thin tube structure, International Conference "Mathematical Physics, Dynamical Systems and Infinite-Dimensional Analysis, 30 June – 7 July 2021, Moscow, **plenary talk** .
319. Borodinas S., Kaulakytė K., Kozulinas N., Panasenko G., Pileckas K., Mathematical modeling of hemodynamics in the left atrium during atrial fibrillation. International Conference "Systems Biology and Systems Physiology: Regulation of Biological Networks", 25-27 August, 2021, Moscow, **plenary talk.**

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321. Ait Mahiout L., Panasenko G., Volpert V., Diffusion equation with Dirac-like potential: model of a periodic set of small cells in a nutrient. Workshop Mathematical Modelling in Biomedicine, 25-27 October, 2021, Moscow, **plenary talk.**

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324. Panasenko G. P., Non-Newtonian flows in thin tube structures, Int. Conf. O.A.Ladyzhenskaya centennial conference on PDE's, St-Petersburg, July 16- July 22, 2022, Book of abstracts, p. 37. **invited talk.**

325. Panasenko G., Asymptotic and analysis and numerical simulations in the heart and vessels, Int. Conf. Multiscale Modeling and Methods, Vilnius, Lithuania, October 24-26 2022, Book of abstracts, p. 3. **Organizer.**

326. Ardatov S., Borodinas S., Kaulakytė K., Kozulinas N., Panasenko G., Pileckas K., Simulation of the blood flow in the left atrium appendage, Int. Workshop Biomathematics and mechanics in cardiovascular medicine, October 7, 2022, Saint-Etienne, France, Book of abstracts, p. 7. **Organizer.**

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PH.D. STUDENTS

Currently:

Kozulinas Nikolajus, PH.D Thesis of Vilnius University, "Asymptotic and numerical analysis of viscous flows in networks", Stipendium of Vilnius University, (Co-advisor: K.Pileckas), planned year of defense: 2024

Defended theses:
1. Juodagalvyté Rita, PH.D Thesis of the Saint Etienne University Jean Monnet and Vilnius University, 25.10.2022, "Asymptotic analysis of viscous flows with complex geometry: applications to hemodynamics", Stipendium LABEX MILYON and Vilnius University, (Co-advisor: K.Pileckas),
2. Malakhova Irina, PH.D Thesis of the Saint Etienne University Jean Monnet 12.02.2015 « Asymptotic and numerical methods for fluid-structure interaction problems and applications in engineering», Stipendium of the ministry of higher education and research, (Co-adviser A.Gusarov)
3. Nachit Abdessalome, PH.D Thesis of the Saint Etienne University Jean Monnet 10.12. 2011 «Asymptotic and numerical modeling of the flows in thin domains » Canadian stipendium (Co-adviser A.M.Zine) currently: assistant professor at ESISA, Fès, Maroc
4. Fares Roula, PH.D Thesis of the Saint Etienne University Jean Monnet 21.11.2011 " Asymptotic and numerical study of flows in thin tube structures " Stipendium of the ministry of higher education and research. (Co-adviser L.Carraro) currently: Assistant Professor, Balamand University, Mathematics Department, Lebanon, Koura
5. Kurbatova Pauline, Thesis of the University Lyon 1 24.11.2011 « Hybrid modeling of erythropoiesis and blood diseases. » stipendium of the Région Rhône-Alpes . (Co-adviser V.Volpert) currently: researcher at UMR CNRS 5558
6. Picheny Victor, University of Florida and of the Mining School of Saint-Etienne 15.10.2009 "Improving and compensating for uncertanity in surrogate modeling" Stipendium of ministry of industry. (Co-advisers A.Vautrin Ecole des Mines de St-Etienne, R.Haftka, University of Florida) currently: researcher at INRA, unity of informatics and applied mathematics, Castanet Tolosan
7. Betoué Etoughe Marthe, PH.D Thesis of the Saint Etienne University Jean 04.12.08 "Homogenization of semi-discrete models", stipendium of Gabon, currently: Professor at Ecole Normale de Libreville (Gabon)
8. Pshenitsyna Natalia, PH.D Thesis of the Saint Etienne University Jean Monnet 29.11.07 "Mathematical modeling in nonlinear acoustics" (co-adviser E.Lapshin, Moscow State University) bourse Eiffel. currently: Professeur Sheridan College (USA)
9. Abdessamad Zouhair, PH.D Thesis of the Saint Etienne University Jean Monnet 13.06.07 "Asymptotic and numerical study of a model of thermo-visco-elasticity in formation of a composite

material ". (Co-adviser I.Kostin). currently: Assistant Professor, l'Ecole Nationale d' Ingénieurs de Monastir (Tunisie)
10. Franck Fontvieille, PH.D Thesis of INSA Lyon, 09.06.04, "Asymptotic decomposition and finite elements" Stipendium of the ministry of higher education and research, (Co-adviser J.Pousin), currently: teacher at the college.
11. Dupuy Delphine, PH.D Thesis of the Saint Etienne University Jean Monnet, 11.01.2004, "Simulation of double screw extrusion" (Co-adviser: A.Ainser) Stipendium of the ministry of higher education and research.
12. Meliani Salha,PH.D Thesis of the Saint Etienne University Jean Monnet, 12.12.2003, "Asymptotic and numerical analysis of a thermo-chemical process of formation of composite materials." Algerian stipendium. (co-adviser L.Paoli)
13.Kamal Abderrahim, PH.D Thesis of the Saint Etienne University Jean Monnet 03.10.2000 "Asymptotic and numerical modeling of catalytic converter" Stipendium of Maroc.(Co-adviser C.Carasso)
14.Majd Abderrazzak,PH.D Thesis of the Saint Etienne University Jean Monnet 23.06.1998 "Asymptotic expansion of the solution of the problem of elasticity for a heterogeneous rod reinforced by other stiff rods. "Stipendium of Maroc,
15.Blanc Francoise, PH.D Thesis of the Saint Etienne University Jean Monnet 29.01.1998 "Homogenization of problems stated in domains with a singular boundary", Stipendium of the ministry of higher education and research. Currently: Associate Professor at the ENISE Engineering School, Saint-Etienne.
16.Chiheb Raddouane, PH.D Thesis of the Saint Etienne University Jean Monnet 29.01.1998 "Asymptotic analysis and optimal design of lattice structures". Stipendium of Maroc, Currently: Professor at l'Ecole d'ingénieurs ENSIAS, Rabat (Maroc).
17. Gnélécoumbaga Souleyman, PH.D Thesis of the Saint Etienne University Jean Monnet 20.05.1996 "Asymptotic analysis and boundary layers for the contact problems » Stipendium of the ministry of higher education and research. Currently: SCHLUMBERGER SYSTEMS and SERVICE
18. Taimurazova Larissa, PH.D Thesis of Moscow State University Lomonosov 22.02.1994 "Boundary layer effects in stiff problems for composite materials " State stipendium (Russia)
19. Kozlova Maria, PH.D Thesis of Moscow State University Lomonosov 24.12.1993 "Asymptotic expansion of 3-D elasticity PDE system in non-homogeneous rod " State stipendium (Russia)
20. Ivanova Olga, PH.D Thesis of Moscow State University Lomonosov 24.12.1993 "Asymptotic solutions of PDE's posed in domains with singularities" State stipendium (Russia)

Post-doctorants

1. Sista Sivaji-Ganesh (Post-doc CNRS), "Multiscale analysis and homogenization for biological structures" (November 2005 - November 2006)
2. Militaru Romulus, "Modelling of flows in thin domains", 6 months 2000, 6 months 2005.
3. Elbert Alexandre "Asymptotic analysis of nonlinear differential equations " Post-doc UJM (january 2010 - january 2011)
4. Richard Guillaume « Origins of the tectonic plates: multiscale approach» Post-doc UJM co-supervisor J.F.Moyen (January 2013-April 2013)
5. Elbert Alexandre « Origins of the tectonic plates: multiscale approach» Post-doc UJM co-supervisor J.F.Moyen (May 2013-December 2013)