

Curriculum Vitae

Surname or Family Name: Perminov

First name: Valeriy

Birth date: October, 22 1958

Sex: male

Degrees:

1995 - Candidate of Science in Fluid mechanics Tomsk State University (this degree is equivalent to a doctorate degree - Ph.D in Fluid Mechanics). The theme of my Thesis: "Mathematical Modeling of Crown and Mass Forest Fires Initiation With the Allowance for the Radiative - Convective Heat and Mass Transfer and Two Temperatures of Medium".

1981 - Diploma as mathematics, Kemerovo State University.

Positions held:

1981 - An assistant of the department of High mathematics, Kemerovo Technological Institution.

1982-1983 - A probability student of physical mechanics department of Tomsk State University.

1984-1987 - A post-graduate student of physical mechanic department of Tomsk State University

1988-1995 - Senior research worker of physical mechanics department of Tomsk State University.

1995-1996 - Assistant Professor of physical mechanics department at the faculty of mechanics and mathematics of the Tomsk State University.

1997 - 2009 - Deputy Director and Lecture, Belovo Branch of Kemerovo State University.

2009 - up to now - Lecture, Belovo Branch of Kemerovo State University.

Membership

Membership in Council on combustion and explosion of Siberian Department of Russian Academy of Science

Professional Experience

1980-1982 - Theoretical investigations on ignition and solid propellant fuels and reactive gases.

1983- up to now - Mathematical and physical modeling of the application of theory of conjugate problems of heat and mass exchange in reactive media. The development of control volume method for numerical solution of the mathematical physics problems, allowing to obtain solutions of high precision. The investigation of the new conjugate problems of continuum reactive multiphase media mechanics. Mathematical modeling of environment pollution from the motor transport. Mathematical and physical modeling of forest fires. Investigation of the mechanism and limiting conditions of forest fire spread. Mathematical modeling and heat and mass transfer of gas dynamics at the natural and technogenic catastrophes. Mathematical prediction of the ecological consequences of the natural and technogenic catastrophes (initiation and spread of the mass forest fires, ignition of forest massifs by radiant energy as a result of nuclear bursts and Tunguska celestial body fall, the recurring radioactive contamination from

forest fires). Scientific interests are mainly connected with the application of the numerical methods to solution problems of mechanics of reacting media to the forest fire and environmental pollution.

My scientific interests are connected with the application of the methods of mechanics of reacting medium to the forest fires and ecological problems of environmental pollution. Mainly, it is a problem of creation of mathematical models for description of forest fires. Besides, I apply numerical methods for solution of partial differential equation systems, which are used in these models for description of forest fires. I've compiled some computer programs (I prepared my programs with the FORTRAN language-Compaq Visual FORTRAN) and using MATLAB:

- a) The transition of surface forest fire to crown forest fire.
- b) The ignition of huge tracts of forests by radiation flux.
- c) The propagation of forest fire in horizontal plane(x,y).
- d) The transfer of radioactive products of forest fire, when the forest fire is spreading in radioactive forest.
- e) The transition of surface forest fire to crown forest fire in three-dimensional setting.

Grants

I took part in Russian and international grants:

1990-1996 - Mathematical modeling of forest fires (Universities of Russia), Mathematical modeling of environment pollution by motor transport and etc.

1994-1995 - "A mechanics of reactive media and mathematical theory of forest fires". (Grant of International Science Foundation N J69100).

1999 – 2001 - "Mathematical modeling of ecological consequences of forest fires"(Grant of Russian Foundation for Basic Research N98-01-03013).

2006 - Grant of Russian Foundation for Basic Research N 06-01-10839).

2007 – 2008 "Mathematical modeling of initiation and development of mass forest fire" (Grant of Russian Foundation for Basic Research N 07-01-96047).

2009 - Grant of Russian Foundation for Basic Research N 09-01-08207).

Courses

I have about 14 years of experience in the field of university education. Firstly I worked as a lecture in Tomsk University. Now I give lectures to students at Belovo Branch of Kemerovo University. Besides I am deputy director on educational work.

Tomsk State University:

1. Programming (FORTRAN, PASCAL) - 1994-1996.
2. Numerical methods of mechanics of continuous media - 1995-1996.
3. Mechanics of reacting media and ecology - 1995 – 1996.
4. Forest Fire Physics - 1996.

Belovo Branch of Kemerovo State University:

1. Mechanics of continuous media - 1997- 2004
2. Differential Equations - 1997- 1999
3. Numerical methods - 1997- 2005.

4. Mathematics – 1996 – up to now.
5. Mathematical modeling - 2000-up to now
6. Mathematics and Informatics. – 1998- up to now.

Participation in the international conferences.

I took part in different all Russian and international conferences devoted to the problems of transfer processes, forest fires and ecology. It was held on the territory of Russia and various countries: Lithuania (Kaunas), Ukraine (Kiev), Byelorussia(Minsk), in different International conferences in Moscow, Krasnoyarsk and Tomsk(since 1987).

I took part in

- The 2-d International Conference on Advanced Computational Methods in Engineering, Liege (Belgium), 28-31 May, 2002,
- International Workshop on efficient techniques for numerical solutions of coupled PDE's and applications to reservoir simulation, Tehran (Iran, 2003),
- Conference on "PDE Methods in Applied Mathematics and Image Processing" September 7-10, 2005, Sunny Beach, Bulgaria.
- 6th International Symposium on Hazards, Prevention, and Mitigation of Industrial Explosions (Sessions 19-22), August 27-September 1, 2006, Dalhousie University, Halifax(Canada).
- 10th WSEAS International Conference on Mathematical methods, Computational Techniques and Intelligent Systems(MAMECTIS), Corfu, Greece, October 26-28, 2008(Plenary lecture).
- 1st International Conference on Computational Intelligence, Modelling and Simulation, 7-9 September 2009, Brno, Czech Republic.
- 12th Seminar "NUMDIFF" on Numerical Solution of Differential and Differential-Algebraic Equations, 14-18 September, 2009, Halle, Germany.

I have published over 100 papers in different editions (see below).

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Publication List

1. Grishin A.M., Perminov V.A. On the influence of radiation upon the ignition and burning of forest fuel materials. // Radiation heat exchange in technique and technology, Kaunas: IPTPE The Academy of Sciences of the Lithuanian SSR, 1987, P.145-146.
2. Grishin A.M., Perminov V.A. The influence of a complex radiation-convective heat exchange upon the transition of a lower forest fire to an upper one. In the book: Heat and mass exchange. International Forum, Minsk, ITMO Academy of Sciences BSSR, 1988,- P.47-49.
3. Grishin A.M., Perminov V.A. On the transition of a lower forest fire to an upper one./Chemical physics of the processes of burning and explosion. The materials of the IX All-union Symposium on burning and explosion, Chernogolovka, DICP, 1989,-P.104-107.
4. Perminov V.A., Shipulina O.V. On the numerical solution of some problems of the mathematical theory of forest fires // Physical gas dynamics of reacting media, Novosibirsk, Nauka, 1990,-P.158-169.

5. Perminov V.A. On the ignition of the curtain of forest from the hearth of a lower forest fire//Physical and mathematical modeling of heat and hydrodynamic processes, Tomsk, Publishing House TPI,1990,-P.98-104.
6. Grishin A.M., Perminov V.A. The transition of the surface forest fire to crown one//The Physics of burning and explosion, ("Combustion, Explosion and Shock Waves» in USA), 1990,V.26,N 6,-P.27-35.
7. Perminov V.A. On the stationary spreading of upper forest fires//Gas dynamics. Publishing House TSU,Tomsk,1991,-P.21-27.
8. Grishin A.M., Perminov V.A. Mathematical modeling of forest from Tunguska meteorite//Proceedings of SB of Russian Academy of Sciences, Siberian physics and technique journal,1992,6.-P.112-117.
9. Grishin A.M., Perminov V.A. Radiation and complex heat and mass exchange during beginning and propagation crown forest fire. In the book: Heat and mass exchange. International Forum, Minsk, ITMO Academy of Sciences Byelorussia, 1992,- P.83-88.
10. Grishin A.M., Perminov V.A. The influence of a complex radiation-convective heat exchange upon the transition of a lower 11.Grishin A.M., Perminov V.A. Application of modified algebraic turbulent model for numerical solution of some problem of forest fire//International workshop on selected problems of solid propellant combustion and chemical gas dynamics.- Novosibirsk,Tomsk:1992.-P.18-19.
11. Grishin A.M., Perminov V.A. The radiation and conjugation heat exchange and the upset and propagation crown forest fire.- Heat Transfer, v.25, N 5, 1993, P.679-684.
12. Grishin A.M., Perminov V.A. Mathematical modeling of forest phytocenoses state under the influence natural and anthropogenic catastrophes.- In the book: Mathematical modeling, Moscow, Publishing House Moscow State University, 1993.-P.167-185.
13. Grishin A.M., Perminov V.A. On ignition of forest massifs by the action of Tunguska meteorite explosion//The Physics of burning and explosion, ("Combustion, Explosion and Shock Waves» in USA), 1993, V.29, N 6.-P.8-14.
14. Grishin A.M., Perminov V.A. Mathematical model and mathematical modeling of aerosols spreading as a result of forest fires.-In the book: "Computational technologies,V.3, N 8,1994.- ICT, SB of Russian Academy of Sciences,-P.72-86.
15. Grishin A.M., Perminov V.A. An ignition of forest crown from the surface fire //Chemical physics, V.13, N 8-9, 1994.-P.202-210.
16. Goldin V.D., Perminov V.A. About forest fire initiation under the radiation from meteorite destructing in atmosphere // Space protection of the Earth – 94 (SPE-94), Snezhinsk, 1994, (<http://www.snezhinsk.ru/asteroids>).
17. Grishin A.M., Efimov K.N., Perminov V.A. Mathematical modeling of forest massifs ignition as a result of impact and technogenic catastrophes in quasi-one dimensional approximation.-In the book:" Computational technologies, V.4, N 13,1995.- ICT, SB of Russian Academy of Sciences,-P.156-176.
18. Grishin A.M., Efimov K.N., Perminov V.A. Mathematical model of initiation of mass forest fires//Forest fires: initiation, spread and ecological impacts. Proceedings of the International Conference (24-30 July, 1995), Tomsk, 1995,-P.36-37.
19. Grishin A.M., Kataeva L.Yu., Perminov V.A. Mathematical modeling of the of the recurring radioactive contamination from forest fire//Forest fires: initiation, spread and ecological impacts. Proceedings of the International Conference(24-30 July, 1995), Tomsk, 1995,-P.37-38.

20. Grishin A.M., Perminov V.A. Ignition of forest massifs by radiant energy as a result of nuclear burst//Forest fires: initiation, spread and ecological impacts. Proceedings of the International Conference (24-30 July, 1995), Tomsk, 1995,-P.41-43.
21. Grishin A.M., Perminov V.A. Mathematical modeling of crown forest fire initiation //Forest fires: initiation, spread and ecological impacts. Proceedings of the International Conference (24-30 July, 1995), Tomsk, 1995,-P.43-44.
22. Grishin A.M., Merzlyakov A.L., Perminov V.A. Mathematical modeling of radionuclide migration by the action of wind and forest fires//Forest fires: initiation, spread and ecological impacts. Proceedings of the International Conference(24-30 July, 1995), Tomsk,1995,-P.49.
23. Grishin A.M., Efimov K.N., Perminov V.A. The radiation-convective heat exchange as a result of impact and technogenic catastrophes//Heatmasstransfer-96. Proceedings of III International Forum, Minsk, ITMO Academy of Sciences Byelorussia, 1996,- P.116-120.
24. Grishin A.M., Perminov V.A. Peculiarities of mathematical modeling of conjugated heat- and mass exchange problems appearing in theory of forest fire//Proceedings of International Conference, Novosibirsk, 1996,P.229.
25. Grishin A.M., Perminov V.A. Mathematical modeling of radionuclide migration by the action of wind and forest //2-d Siberian Congress on Applied and Industrial mathematics (INPRIM-96), Novosibirsk,1996,P.294.
26. Grishin A.M., Perminov V.A. An ignition of forest massifs as a result of cosmic and technogenic catastrophes. //The Physics of burning and explosion, ("Combustion, Explosion and Shock Waves» in USA) 1996, V.32, N 2, P.18-30.
27. Grishin A.M., Perminov V.A. An ignition of forest massifs under the influence of high altitude radiant energy //The Physics of burning and explosion, ("Combustion, Explosion and Shock Waves» in USA) 1996, V.32, N 5, P.108-115.
28. Perminov V.A. Numerical simulation of heat and mass transfer at crown forest fire spread //13th International conference on fire and forest meteorology, Lorne, Australia, 27-30 October, 1996.
29. Perminov V.A., Grishin A.M. Heat and mass transfer in a forest fire // Journal of Engineering Thermophysics, N V.6, N 3, 1996.
30. A.M. Grishin, V.A. Perminov, Ignition of forest crowns from a ground-fire source, International Journal of Multiphase Flow 22 (1001) (1996) pp...
31. Grishin, A. M. Perminov, V. A. Mathematical Modeling of the State of Forest Phytocenoses Under Natural and Man-Made Disasters // Computational mathematics and modeling selected translations from sbornik trudov- fakul'tet vychislitel'noi matematiki i kibernetiki, 1996, Vol. 7; N 1, p. 12-26.
32. Perminov V.A. Mathematical modeling of heat and mass transfer processes at forest fire//CHT-97 International Symposium on advanced in computational heat transfer, Cesme, 1997.
33. Perminov V.A. Mathematical modeling of heat and mass transfer processes at crown forest fire spread//2 -nd International Wildland Fire Conference, Vancouver, 1997.
34. Perminov V.A. Numerical method in evaluating of heat- and mass transfer at the forest fire spread file // Mathematical and physical modeling of forest fire and their ecological consequences. Proceedings of International Conference, Irkutsk, 1997.-P.140-141.
35. Perminov V.A. Mathematical modeling of crown fire initiation taking into account the influence of wind// Proceedings of 3-d International Conference on Forest Fire Research, 16-20 November 1998, Luso-Coimbra, Portugal.- 1998.-P.419-431.

36. Grishin A.M., Perminov V.A. Mathematical modeling of forest crown ignition// The Physics of burning and explosion, ("Combustion, Explosion and Shock Waves" in USA), 1998, V.34, N 4,-P.13-22.
37. Perminov V. Numerical modeling forest fire spread initiation //9 –th Seminar on Numerical solution of differential and algebraic equations, Galle, Germany, 2000, P.105.-106.
38. Perminov V.A. Numerical calculation of repeated radioactive pollution // Proceedings of International conference «Conjugate problems of mechanics and ecology », Tomsk: Tomsk State University. 2000.- P.44-45.
39. Perminov V.A. Mathematical modeling forest fire spread initiation // Proceedings of the International Congress MODSIM –2001(Australia), Canberra, 2001. – P.977 – 982.
40. Grishin A.M., Perminov V.A., Shipulina O.V., Porterie B. A general mathematical model and some results of mathematical modeling // VIII All Russian Congress on Theoretical and Applied Mechanics, 23 – 29 August 2001, Perm (Russia).-P.211
41. Perminov V.A. Mathematical modeling of radionuclide pollution of environmental as a result of forest fire // «Modern methods of mathematical modeling of natural and technogenic catastrophes », VI International Conference, Krasnoyarsk, 2001.-p.95-97
42. Perminov V.A., Golovanov O.A. Visualization of plane crown forest fire spread // Information systems of Kuzbass. Proceedings of Conference, Part 2, Kemerovo State University, Kemerovo, 2001.-p.264 – 271.
43. Perminov V., Mathematical modeling of forest fire initiation //Proceedings of the 2-d International Conference on Advanced Computational Methods in Engineering, Liege (Belgium), 28-31 May, 2002.10p.
44. Perminov V. Numerical Solution of Reynolds equations for Forest Fire Spread //Lecture Notes in Computer Science, Vol. 2329, pp, 2002.- P.823-832.
45. Perminov V.A. Mathematical modeling of motor transport pollution // Proceedings V All Russian Symposium «Mathematical modeling and computer technologies», KIEL, Kislovodsk, 2002.-p.28 – 30.
46. Perminov V.A. mathematical modeling of motor transport environmental pollution //News of Kemerovo State University, Issue 2(10), Kemerovo, 2002.-p.159-167.
47. Perminov V. A numerical study of forest fire initiation//10th Seminar on Numerical Solution of Differential – Algebraic Equations, September 8-11 2003, Galle, 2003.-P.36-37.
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49. Perminov V. Mathematical modeling of crown forest fire initiation // Lecture Notes in Computer Science, Vol. 2667, 2003.-P.549-557.
50. Perminov V. Mathematical modeling of large forest fire initiation //5th Symposium on Fire and Forest Meteorology, 16 – 20 November, Colorado Spring Resort in Orlando (Florida, USA), 2003.
51. Perminov V.A. Mathematical modeling of motor transport pollution // Information systems of Kuzbass, Proceedings of conference, 28 – 30 January 2003, Kemerovo, 2003.-p.232-234.
52. Perminov V.A. Mathematical model of calculation of motor transport pollution of environment in urban // News of Russian Academy of Encyclopedias(Ural regional department), 2003, № 1 – 2 (7 - 8).-p.31-35.

53. Perminov V.A. Mathematical modeling of motor transport pollution in urban // Science and Education: Proceedings of V International scientific conference (26-27 February 2004): Part 4./ Kemerovo State University, Belovo Branch. – Belovo, 2004., p.562-564.
54. Perminov V. Mathematical modeling of environmental pollution by the action of motor transport. Advances in Scientific computing and Application, Science Press, Being/New York, 2004.-P.341-346.
55. Perminov V.A. A numerical study of forest fire initiation //European Congress on Computational Methods in Applied Sciences and Engineering ECCOMAS 2004 P. Neittaanmaki, T. Rossi, K. Majava, and O. Pironneau (eds.) V. Capasso and W. Ja'ger (assoc. eds.) – Jyvaskyla (Finland), 24- -28 July 2004.
56. Perminov V. Mathematical modeling of ignition of forest combustible materials as a result of action from surface forest fire // Eleventh International Congress on Computational and Applied Mathematics, Katholieke Universiteit Leuven (Belgium), July 26-30, 2004.
57. Perminov V.A. Mathematical modeling of large forest fire initiation // The International conference on computational mathematics(Abstracts), Novosibirsk (Academgorodok), June, 21-25, 2004.
58. Perminov V. Mathematical Model of Environmental Pollution by Motorcar in an Urban Area // Lecture Notes in Computer Science, 2005, Vol. 3516, p.139-142.
59. Perminov V.A. Mathematical modeling of forest fire initiation // Proceedings of the 4-th International Conference on Heat Transfer, Fluid Mechanics and Thermodynamics, Cairo (Egypt), 2005, 6 p.
60. Perminov V.A. A calculation procedure for study of forest fire initiation, Proceedings of The Third International Conference on Advanced Computational Methods in Engineering, Ghent (Belgium) 30 May-2 June 2005,9 p.
61. Perminov V.A., Haritonova S. Mathematical modeling of pollution transport in river //Science and Education, Proceeding of V Regional Conference, Belovo(Russia), 22.04.2005, p.347-352.
62. Perminov V. Mathematical Modeling of Large Forest Fire Initiation // Seventh IMACS International Symposium on Iterative Methods in Scientific Computing (Canada), 2005.
63. Perminov V. Numerical solution of averaged Reynolds system of equations for forest fire initiation and spread // Abstracts of 3d SciCADE05, Nagoya (Japan), 20-23 June 2005. (<http://www.math.human.nagoya.ac.jp/scicade05/>).
64. Perminov V.A. Mathematical modeling of forest fire initiation with the allowance for the radiative-convective heat and mass transfer and two temperature of medium // Multiphase flows. Simulation, experiment and application, 31 May-3 June 2005, Rooendorf (Germany).
65. Perminov V.A. A Numerical Solution of Reynolds System of Equations for Description of Forest Fire Initiation // Sixth Symposium on Fire and Forest Meteorology, 2005.
66. Perminov V.A. Methods of mathematical modeling of environmental pollution processes // In the book: New information technologies in university education, XI International scientific-methodical conference, Kemerovo (Russia), 1-3 February, 2006, P.294-296.
67. Perminov V.A. Mathematical modeling of pollution transfer in river // In the book: Nedra of Kuzbass, V All-Russian scientific conference, 29-31 January 2006, Kemerovo (Russia), P.147-150.
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69. Perminov V. A numerical solution of conjugate problem of forest fire initiation // Numerical treatment of differential equations, International Seminar NUMDIFF – Halle (Germany), September 4-8, 2006, P.46-47.
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71. Perminov V.A. Mathematical modeling of plane forest fire front spread // Computational Technologies, Vol.11, 2006, P.108-115.
72. Mathematical modeling of crown forest fire initiation // 31st International Symposium on Combustion, August 6-11 2006, University of Heidelberg, Germany, 2006, p.168.
73. Perminov V. A numerical study of forest fire initiation and spread // European Conference on Computational Fluid Dynamics ECCOMAS CFD 2006, V.Wesseling, E. Onate, J.Periaux (Eds), TU Delft, The Netherlands, 2006, p.268-277.
74. Perminov V.A. Mathematical modeling of three-dimensional crown forest fire initiation // Bulletin of Tomsk State University, 2006, N 19, P.105-109.
75. Perminov V. Mathematical modeling of forest fire initiation in three-dimensional setting / Abstracts of 2nd Behavior and fuels Conference, March 26-30, 2007, Destin(Florida, USA), 2007, P.62.
76. Valeriy Perminov, Mathematical Modeling of Forest Fire Initiation in Three Dimensional Setting // The fire environment-innovations, management, and policy, USDA Forest Service Proceedings RMRS-P-46CD, Rocky Mountain Research Station, Destin, Florida (USA), 2007, P.241-248.
77. Perminov V. Mathematical modeling of large forest fire initiation //The 6-th European Conference on Ecological Modelling, Conference proceedings, November 27-30, 2007, Trieste (Italy), 2007, P.409-410.
78. Perminov V.A. Mathematical modeling of crown forest ignition by surface fires // Computational Technologies, V. 13, N 5, 2008, P.99-105.
79. Valeriy Perminov, Mathematical modeling of crown forest fire initiation .- New Aspects of Engineering Mechanics: Proceedings of the 12th WSEAS International Conference on Engineering mechanics, structures, engineering geology, Heraclion (Greece), July 22-24, 2008. Mathematics and Computers in Science and Engineering, A series of reference Books and Textbooks, 2008.-P.259-264.
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- 82.Perminov V.A. Mathematical modeling of forest crown ignition as a result of action from surface forest fire in three-dimensional setting // Russian Physics Journal. – 2009.-N 2/2.-P.144-148.
- 83.Perminov V.A. Numerical solution of three-dimensional problem of crown forest fire initiation // Bulletin of Tomsk State University, 2009, 1(6), P.41-48.

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