

LIST of PUBLICATIONS

Svyatskov, Victor A

(i) Books

- [1] The equation of Euler – Lagrange in the Boundary Layer with Applications. Chuvash State Pedagogical University, Cheboksary, 2000, 162 pp. (monograph, in Russian) ISBN 5-88297-075-X.
- [2] The equation of Euler – Lagrange in the Boundary Layer with Applications. Cheboksary's Polytechnical Institute of the Moscow State Open University, Cheboksary, 2008, 135 pp., Second corr. edition. (monograph, in Russian) ISBN 978-5-902891-47-5.
- [3] Application of Puiseux series for modeling of mechanics problems. Mordovian State University, Saransk, 2000, 16 pp. (in Russian).

(ii) Invited book chapter

- [1] Hamilton-Jacobi equation of the extremal problem of an axisymmetrical body in hypersonic flow *Hydrodynamics and optimal design*, Gorky's Polytechnical Institute, Gorky, 1986 76-83 (in Russian).
- [2] Hamilton-Jacobi equations at the ill-posed extremal problem of an axisymmetrical body in hypersonic flow
Asymptotic methods. Problems of mechanics, Nauka, Novosibirsk, 1988 106-116 (in Russian).
- [3] Investigation sufficient conditions for an extremum in the problem of an axisymmetrical body in hypersonic flow of gas
Hydrodynamics and mathematical technology, Gorky's Polytechnical Institute, Gorky, 1988 59-66 (in Russian).
- [4] Ill-posed extremals in the problem of an axisymmetrical body in hypersonic flow of gas
Asymptotic methods in the theory of systems, Irkutsk Scientific Center of Siberian Branch of the Academy of Sciences of USSR, Irkutsk, 1989 244-254 (in Russian).
- [5] The solution of differential equations of necessary condition for an extremum in the case of weak extremal boundary layer
Applied problems of theory of oscillations, Nizhny Novgorod State University, Nizhny Novgorod, 1991 134-140 (in Russian).
- [6] A differential equation of a necessary condition for an extremum in the neighbourhood of a weak singular point
Partial differential equations, Russian State Pedagogical University, St. Petersburg, 1992 0,5 quires (in Russian).
- [7] Educational courses programme: Information Technology p.p.65-70, Numerical Analysis p.p.30-37.
Educational courses programme of the Faculty of Informatics and Computer Techniques, Chuvash State Pedagogical University, Cheboksary, 2002, 96 p.p. (in Russian).

(iii) Journal articles

- [1] Asymptotic investigation of the extremal problem of the body of revolution in hypersonic flow based on Hamilton-Jacobi equations
deposit manuscript in *VINITI* No 8064-V, 22.11.85 (1985), 0,75 quires (in Russian).
- [2] Investigation of the Jacobi equation for Lagrangians of special form
Izv. Vyssh. Uchebn. Zaved., Mathematics, 1996, 4(407), 81-83 (in Russian)
<http://www.springerlink.com/content/120691>; Zbl 0912.49023
- [3] Representation of the Euler-Lagrange equation in the boundary layer (in Russian)
Bulletin of Chuvash State Pedagogical University, Cheboksary, 1999, 7(12), 47-51.
- [4] Three special cases of the Euler-Lagrange equation in the boundary layer (in Russian)
Mathematical modelling, Institute for Mathematical Modelling, Russian Academy of Sciences, 2000, V.12, No 3, 0,06 quires.
- [5] Modeling of movement of the body with variable mass based on the Euler-Lagrange equation in the boundary layer (in Russian)

- Bulletin of Chuvash State Pedagogical University, Cheboksary, 2000, 1(14), 93-97.
- [6] Investigation of three special cases of the Euler-Lagrange equation in the boundary layer (in Russian)
 Proceedings of the Russian Academy of Natural Sciences. Differential Equations, Ryazansky State Pedagogical University, Ryazan, 2001, 4, 85-95.
- [7] About modeling of movement of an axisymmetrical body in hypersonic flow of gas (in Russian, with O.V.Volgina)
 Bulletin of Chuvash State Pedagogical University, Cheboksary, 2001, 2(21), 166-171.
- [8] Research of the Beltrami's identity in the boundary layer (in Russian, with E.V.Nikolaeva, N.P.Platonova)
 Bulletin of Chuvash State Pedagogical University, Cheboksary, 2001, 2(21), 83-88.
- [9] Application of Hamilton-Jacobi equation to research of one type extremal problems (in Russian)
 Proceedings of the Russian Academy of Natural Sciences. Differential Equations, Ryazansky State Pedagogical University, Ryazan, 2001, 5, 154-155.
- [10] Research of the Levy - Chevita equation in the boundary layer (in Russian, with G.V.Smirnov)
 Proceedings of Middle Volga Mathematical Society, Saransk, 2002, V.3-4, No 1, 287-290.
- [11] Application of similarity and dimension in the problem of modeling the movement of the variable mass material point (in Russian, with G.V.Smirnov)
 Bulletin of Chuvash State Pedagogical University, Cheboksary, 2002, 6(30), 92-96.
- [12] Application of spreadsheet to research of the quantitative history (in Russian, with N.V.Odolskaya)
 Mathematical models and its applications. Proceedings, Chuvash State University, Cheboksary, 2003, V, 163-172.
- [13] Application of Euler-Lagrange equation in the boundary layer to the research of perfectly rigid body movement about a fixed axis (in Russian, with G.V.Smirnov, A.V.Spiridonov)
 Bulletin of Tambov University. Series: Natural and technical sciences, Tambov State University, Tambov, 2003, V.8, No 3, 451-452.
- [14] Research of celestial mechanics problems based on the application of math software MATLAB Simulink (in Russian, with M.V.Nikolaev)
 Bulletin of Chuvash State Pedagogical University, Cheboksary, 2003, 2(36), 12-16.
- [15] Research of perfectly rigid body movement about a fixed axis based on the Euler-Lagrange equation in the boundary layer (in Russian, with G.V.Smirnov)
 Proceedings of Middle Volga Mathematical Society, Saransk, 2003, V.5, No 1, 212-214.
- [16] Research of an Euler-Lagrange equation in the boundary layer at the limit and down to the limit cases (in Russian)
 Bulletin of Cheboksary Branch of Moscow State Open Pedagogical University, Atoll, Cheboksary, 2004, 1, 165-169.
- [17] Modeling of equation of movement of the body with variable mass based on the Euler-Lagrange equation in the boundary layer at the limit and down to the limit cases (in Russian)
 Actual Problems of University Science and Industrial Production. Proceedings, Moscow State Open University, Moscow, 2004, 2, 172-177.
- [18] Application of Euler-Lagrange equations in the boundary layer to solving problems of environmental protection (in Russian)
 Advances in Current Natural Sciences, The Russian Academy of Natural History, Moscow, 2004, 9, 71-72.
- [19] About one inverse problem for calculus of variations and its applications
 Modern high technologies, The Russian Academy of Natural History, Moscow, 2005, 8, 31-32
- [20] The homomorphism of two models for the dynamics of the body with variable mass
 Proceedings of Middle Volga Mathematical Society, Saransk, 2005, V.7, No 1, 0,25 quires.
- [21] About homomorphism of mathematical models (in Russian)
 Modern Problems of Science and Education, The Russian Academy of Natural History, Moscow, 2006, 1, 91-92.
- [22] Application of computers in primary school (in Russian, with E.E.Svyatskova)
 Folk School, Chuvashia Republican Institute of Education, Cheboksary, 1995, 1, 56-59.

(iv) Publications in proceedings of conferences

[1] Investigation of the optimal form of axisymmetric body near a singular point on the conditions of the radiation heat transfer (in Russian, with N.R.Alekseeva)

In *International Scientific Conference «Mathematical models of nonlinear excitations, transport, dynamics, control in condensed systems and other mediums»*. Tver, 1996. July 2-5, Tver, 1997, p.p.12-19.

[2] Representation of the equations of extremals in the boundary layer (in Russian, with N.R.Alekseeva)

In *International Scientific Conference “Mathematics. Computer. Education” Pushchino, 1997, January 25-30*, Pushchino, 1997 0,25 quires

[3] The parametric solution of the Euler-Lagrange equation in the boundary layer in the case of a non-zero free term (in Russian, with N.R.Alekseeva)

In *III-d International Scientific Conference “Differential Equations and its Applications”*. Saransk, 1998, May 19-21, Mordovian State University, Saransk, 1998 0,13 quires

[4] One method of calculation for optimal shape of a body in hypersonic flow near a singular point

In *The International Summer Scientific School “High Speed Hydrodynamics”*, June 16-23 2002. Cheboksary, Russia, Cheboksary, Russia, /Washington, USA, 2002 383-388.

[5] The application of the Euler – Lagrange equation in the boundary layer to research of the main equation for movement of the body with variable mass

In *Abstracts of Second International Summer Scientific School “High Speed Hydrodynamics”*. (HSH-2004). June 27 – July 3, 2004, Cheboksary-Russia, Cheboksary’s Institute of the Moscow State Open University, Cheboksary, 2004, 139-143

[6] The development of programming languages in terms of stages of mathematical modeling (in Russian)

In *Problems mentality in the field of economics, advertising and information technology (materials science conference)*. Regional Institute of Psychology and Human Sciences. Cheboksary, April 13, 2005, Regional Institute of Psychology and Human Sciences, Cheboksary, 2005, 132-135.

[7] About a model of movement of the body with variable mass (in Russian)

In *XIX-th International Scientific Conference “Mathematical Methods in Engineering and Technologies. Proceedings*, Voronezh State Technological Academy, Voronezh, 2006, V.1, 131-135.

[8] From experience the application of LabVIEW in the course of informatics in Cheboksary Institute of the Moscow State Open University (in Russian)

In *V International Scientific and Practical Conference. Educational, scientific and engineering applications in the LabVIEW environment and National Instruments technologies*. Moscow, Russia, November 17-18. 2006, Peoples Friendship University of Russia, Moscow, 2006, 130-137.

[9] The structure of algebra of terms of Euler-Lagrange equation for the boundary layer (in Russian)

In *Innovations in education. Proceedings of the Interregional Scientific and Practical Conference*, Moscow State Open University, Moscow, 2007, 5, 193-194.

[10] New information technologies and the learning process: XXI Century (in Russian)

In *XX-th International Scientific Conference “Mathematical Methods in Engineering and Technologies. Proceedings*, Yaroslavl State Technical University, Yaroslavl, 2007, V.9, 103-107.

[11] Succession of disciplines «Modeling of Systems» and «Design Automation Systems and Control Tools» (in Russian, with O.M.Denisova)

In *V International Scientific and Practical Conference. Educational, scientific and engineering applications in the LabVIEW environment and National Instruments technologies. Section 5 - Laboratory workshops and educational booths*. Moscow, Russia, November 23-24. 2007, Peoples Friendship University of Russia, Moscow, 2007, 6 p.p.

[12] Some algebraic properties of the Euler-Lagrange equation in the boundary layer

In *Proceeding of 9th Nordic Combinatorial Conference, 23-24, November, 2007, Bergen, Norway* (online at http://www.ii.uib.no/~riera/conference/Preliminary_Technical_Program_v4.pdf), 3 p.p.

[13] Group properties of Lagrangian of Euler-Lagrange equation for the boundary layer (in Russian)

In *Innovations in education. Proceedings of the Interregional Scientific and Practical Conference*, Cheboksary’s Polytechnic Institute of the Moscow State Open University, Cheboksary, 2008, 6, 22-23.

[14] Group analysis of Lagrangians Euler-Lagrange equation for the boundary layer(in Russian)

In *Proceedings of X International Scientific School «High Speed Hydrodynamics» and the International Conference «Hydrodynamics. Mechanics. Power plants»(to the 145-th anniversary of Academician A.N. Krylov).*10-14 September,2008, Cheboksary, Cheboksary's Polytechnic Institute of the Moscow State Open University, Cheboksary, 2008, 491-494.

(v) Books edited

Problems mentality in the field of economics, advertising and information technology (materials science conference). Regional Institute of Psychology and Human Sciences. Cheboksary, April 13, 2005, Regional Institute of Psychology and Human Sciences, Cheboksary, 2005, 159 p.p. (in Russian).

(vi) Manuals

[1] Practical Work on Numerical Analysis, Chuvash State Pedagogical University, Cheboksary, 54p.p. (in Russian).

[2] Lectures on Numerical Analysis, Chuvash State Pedagogical University, Cheboksary, 167p.p. (in Russian).

[3] Methods of Mathematical Programming. Training Complex, Cheboksary's Institute of the Moscow State Open University, Cheboksary, 2006, 36p.p. (in Russian, with T.V.Kirij).

[4] Design Automation Systems and Control Tools. Training Complex, Cheboksary's Institute of the Moscow State Open University, Cheboksary, 2006, 16p.p. (in Russian, with A.G.Ivanov).

[5] Modeling of Systems. Training Complex, Cheboksary's Institute of the Moscow State Open University, Cheboksary, 2006, 44p.p. (in Russian).

(vii) Abstracts

[1] The Hamilton-Jacobi equation at the extremal problem of an axisymmetrical body in hypersonic flow with integral constraints

In *Abstracts of the republican scientific-practical conference of young scientists and specialists of the Chuvash Republic.* Cheboksary, 1985, 0,13 quires (in Russian).

[2] Singular solutions at the extremal problem of an axisymmetrical body in hypersonic flow of gas

In *Abstracts of scientific conference of young scientists the Volga-Vyatka region.* Gorky, 1987, 0,06 quires (in Russian)

[3] Optimization of axisymmetric bodies in hypersonic flow based on Hamilton-Jacobi equations

In *Problems of theoretical cybernetics. Abstracts VIII All-Union Conference (July, 1988).* Gorky, 1988, 0,06 quires (in Russian).

[4] The Hamilton-Jacobi equations at the ill-posed extremal problem of an axisymmetrical body in hypersonic flow of gas

In *Recent developments in fluid mechanics and gas. Abstracts of scientific school conference,* Irkutsk, 1988, 0,13 quires (in Russian).

[5] Equation of a necessary condition for extremum of the ill-posed extremal problem with disturbed strengthened Legendre condition in the case of a weak singular point

In *Abstracts All-Union Conference «Asymptotic methods of the theory of singularly perturbed equations, and the ill-posed problems. Bishkek, 10-12 Sept. 1991 »,* Ilim, Bishkek, 1991 95 (in Russian).

[6] The actuality of the using of computers in primary school

In *Materials II Republican scientific-practical conference «Problems of Informatization in the Chuvash Republic», 9-10 November 1994* Cheboksary, Cheboksary, 1994, 0,13 quires (in Russian, with E.E.Svyatskova).

[7] Integrated application of methods of computational mathematics to the construction of solutions of singularly perturbed problems

In *Abstracts for the 1st interuniversity student conference « Informatics and Computer Techniques in higher education»,* Chuvash State Pedagogical Institute, Cheboksary, 1996, 0,13 quires (in Russian, with T.G. Mihajlova)

[8] The mathematical model of a nonlinear mechanical system with Lagrangian in the case of singular point (in Russian, with N.R.Alekseeva)

In *International Scientific Conference «Mathematical models of nonlinear excitations, transport, dynamics, control in condensed systems and other mediums»*. Abstracts. Tver, 1996. July 2-5, Tver, 1996, 0,06 quires

[9] The importance of series in the mathematical training for future teachers of informatics (with N.R.Alekseeva)

In *«Chernozem-97» III All-Russian Scientific and Practical Conference. New information technologies. Voronezh. 7-11 April. 1997*, Voronezh State Pedagogical University, Voronezh, 1997 23-24 (in Russian)

[10] The differential equation of some flat curves in the return point neighborhood (in Russian, with N.R.Alekseeva)

In *V-th International Scientific Conference of Women-Mathematicians “Mathematics. Economics”*. Rostov-na-Donu. 25-30 May. 1997, Rostov-na-Donu, 1997, 0,06 quires.

[11] The solution of Euler equation with the singular point (in Russian, with N.R.Alekseeva)

In *International Scientific Conference “Differential equations. Integral equations. Mathematical functions”*. Abstracts. 27-30 May. 1997, Samara, 1997 74.

[12] Modeling of extremal problems of mechanics with singular points (in Russian, with N.R.Alekseeva, N.V.Babushkina, O.V.Volgina)

In *Abstracts VI-th International Scientific Conference of Women-Mathematicians “Mathematics. Education. Economics”*. Cheboksary. 25-30 May. 1998, Cheboksary, 1998, 0,13 quires.

[13] Parametric solution of Beltrami’s identity with singular point (in Russian, with N.R.Alekseeva)
In *Actual problems of mathematics: International Scientific Conference. Part 3*, Institute of Mathematics, Ukrainian Academy of Sciences, Kiev, 1998, 0,19 quires.

[14] Beltrami’s identity in boundary layer (in Russian, with N.P.Platonova)

In *Abstracts IX-th International Scientific Conference “Mathematics. Education. Economics. Ecology”*. Cheboksary. 28 May – 2 June. 2001, Cheboksary, 2001, 0,06 quires.

[15] Mathematical models for the movement of the body with variable mass based on the Euler–Lagrange equation in the boundary layer

In *Basic Researches*, The Russian Academy of Natural History, Moscow, 2005, 3, 33

[16] Nonlinear problems for the dynamics of the body with variable mass (in Russian)

In *Non-linear world. Tenth Interdisciplinary Research Conference. Abstracts. Nizhny Novgorod, 27 June – 2 July. 2005*, Nizhny Novgorod State University, Nizhny Novgorod, 2005, 121.