Curriculum Vitae

Notarization. I have read the following and certify that this *curriculum vitae* is a current and accurate statement of my professional record.

Signature _____ Date _____

I. Personal Information

I.A. UID, Last Name, First Name, Middle Name, Contact Information

Novikov Sergei Petrovich, tel 3017797472 (h), 3014054836 (o), e-mail novikov@umd.edu

I.B. Academic Appointments at UMD

Distinguished Professor since 1997,
Date of Appointment to current T/TT rank 8/17 1996

I.C. Administrative Appointments at UMD

I.D. Other Employment

Junior researcher in the Steklov Math Institute (Moscow) since December 1963, Senior researcher in the same Institute since December 1965 Head of Math Group at the Landau Institute for Theoretical Physics (Moscow) since January 1976 Principal researcher at the same institute since 1992 Head of Geometry/Topology group in the Steklov Math Institute since 1983 Professor at the Moscow State University since 1967 (After 1996 these affiliations are preserved as secondary for the periods of visiting Moscow)

Additional Employments: Visiting professor at the Ec. Normal Superior de Paris, Laboratory of Theoretical Physisc in February 1991–August 1991; Visiting Distinguished professor at the Korean Institute for advenced studies–KIAS, Seoul, June 200, June 2001, November 2002; Visiting professor at the Maryland University at College Park in the Years 1992, 1993, 1994, 1995, 1996, Spring Semesters, visiting Newton International Math Institute in Cambridge, UK, Spring 2009.

I.E. Educational Background

Moscow State University, Mech/Math Depertment 1955-1960, University diploma issued at 1960 (Soviet equivalent of Master degree)

Aspirantura (like graduate studentship) at the Steklov Math Institute 1960-1963, advisor professor M.M.Postnikov. Candidate of Phys/Math Sciences since 1964, Thesis defended in 1964 at the Steklov Institute (Soviet equivalent of PhD)

Doctor Thesis, defended at 1965, Doctor of Phys/Math Sciences since 1965 (Soviet scientific research equivalent of full professor)

Full Professor of Moscow State University, Differential Geometry Chair since 1967

I.F. Professional Certifications and Licenses

Moscow State University Diploma in Mathematics, 1960
Candidate of Phys/Math Sciences Diploma, 1964
Doctor of Phys/Math Sciences Diploma, 1965
Full Professor of Moscow State University Diploma, 1967

II. Research, Scholarly and Creative Activities

II.A. Books

II.A.1. Books Authored

1. V.E. Zakharov, S.V. Manakov, S.P. Novikov, L.P. Pitaevskii, Teoriia solitonov : Metod obratnoi zadachi; Pod red. S.P. Novikova, Moskva : Nauka, 1980. 319 p. : ill. ; 21 cm. Bibliography: p. [317]-319, no ISBN;

English version:

S. Novikov, S.V. Manakov, L.P. Pitaevskij, V.E. Zakharov, Theory of solitons. The inverse scattering methods. (Transl. from the Russian), Contemporary Soviet Mathematics. New York - London: Plenum Publishing Corporation. Consultants Bureau, 1984, xi+276 pp. ISBN 0-306-10977-8.

2. S.P. Novikov, Itogi nauki i tekniki, Sovremennye problemy matematiki, Fundamental'nye napravleniya v. 12, Topologiya, VINITI, Moscow, 1986, no ISBN;

English version:

S.P. Novikov, Topology. 1 : General survey, Berlin etc. : Springer, 1996. - 319 p. (Encyclopaedia of mathematical sciences). Revised and extended. ISBN 3-540-17007-3, ISBN-13: 978-3-540-17007-5,

II.A.2. Books Edited

1. S.P. Novikov, I.A. Taimanov (Eds.), Topological library. Part 1: Cobordisms and their applications, Hackensack, NJ: World Scientific. xiv, 369 pp. (2007). ISBN 978-981-270-559-4/hbk [Series on Knots and Everything 39].

2. S.P. Novikov, I.A. Taimanov (Eds.), Topological library. Part 2: Characteristic classes and smooth structures on manifolds, Hackensack, NJ: World Scientific. xiv, 261 pp. (2010). ISBN 978-981-283-686-1/hbk; ISBN 978-981-283-687-8/ebook [Series on Knot and Everything 44].

3. S.P. Novikov, I.A. Taimanov (Eds.), Topological library. Part 3. Spectral sequences in topology, World Scientific, Hackensack, NJ, 2012. x+576 pp. ISBN: 978-981-4401-30-2 [Series on Knots and Everything, 50].

4. S.P. Novikov, (Editor), Topology and Its Applications, Amer. Math. Soc. Transl. Ser. 2, Vol. 193, AMS, 1993, 250 pp. ISBN-10: 0-8218-3151-8, ISBN-13: 978-0-8218-3151-9.

5. S.P. Novikov, (Editor), Topics in Topology and Mathematical Physics, Amer. Math. Soc. Transl. Ser. 2, Vol. 170, AMS, 1995, 206 pp., Hardcover, ISBN-10: 0-8218-0455-3, ISBN-13: 978-0-8218-0455-1.

6. V.M. Buchstaber, S.P. Novikov, (Eds.), Solitons, Geometry, and Topology: On the Crossroad, Amer. Math. Soc. Transl. Ser. 2, Vol. 179, AMS, 1997, 189 pp., Hardcover, ISBN-10: 0-8218-0666-1, ISBN-13: 978-0-8218-0666-1.

7. S.P. Novikov, (Volume editor), Algebraic topology, convex polytopes, and related topics Collected papers. Dedicated to Victor Matveevich Buchstaber, Corresponding Member of the Russian Academy of Sciences, on the occasion of his 70th birthday, Proceedings of the Steklov Institute of Mathematics, Volume 286, 2014. ISSN: 0081-5438 (print version) ISSN: 1531-8605 (electronic version)

8. S.P. Novikov, (Volume editor), Classical and modern mathematics in the wake of Boris Nikolaevich Delone. Collected papers. In commemoration of the 120th anniversary of Boris Nikolaevich Delone's birth, Proceedings of the Steklov Institute of Mathematics, Volume 275, 2011. ISSN: 0081-5438 (print version) ISSN: 1531-8605 (electronic version)

9. S.P. Novikov, (Editor in Chief), Topology and its applications Proceedings of the International topology conference (Baku, October 3-8, 1987), Proceedings of the Steklov Institute of Mathematics, Volume 193, 1992, ISSN: 0081-5438 (print version) ISSN: 1531-8605 (electronic version)

10. S.P. Novikov, (Editor in Chief), Discrete geometry and topology. Dedicated to the 100th anniversary of the birth of Boris Nikolaevich Delone, Proceedings of the Steklov Institute of Mathematics, Volume 196, 1991. ISSN: 0081-5438 (print version) ISSN: 1531-8605 (electronic version)

II.A.3. Books Translated

II.A.4. Textbooks

1. B.A. Dubrovin, S.P. Novikov, A.T. Fomenko, Modern geometry. Methods and applications, Nauka, Moscow, 1979 (Russian), no ISBN;

English version:

B.A. Dubrovin, A.T. Fomenko, S.P. Novikov, Modern geometry-methods and applications. Part I. The geometry of surfaces, transformation groups, and fields, Springer-Verlag, New York, 1984. xv+464 pp. ISBN: 0-387-90872-2 [Graduate Texts in Mathematics, 93].

B.A. Dubrovin, A.T. Fomenko, S.P. Novikov, Modern geometry-methods and applications. Part II. The geometry and topology of manifolds, Springer-Verlag, New York, 1985. xv+430 pp. ISBN: 0-387-96162-3 [Graduate Texts in Mathematics, 104].

(These volumes we reprinted several times. Also translated to French, Italian, Spanish by Mir Publisher)

2. B.A. Dubrovin, S.P. Novikov, A.T. Fomenko, Modern geometry. Methods of homology theory, Nauka, Moscow 1984 (Russian), no ISBN;

English version:

B.A. Dubrovin, A.T. Fomenko, S.P. Novikov, Modern geometry-methods and applications. Part III. Introduction to homology theory, Springer-Verlag, New York, 1990. x+416 pp. ISBN: 0-387-97271-4 [Graduate Texts in Mathematics, 124].

(Also translated to French, Italian, Spanish by Mir Publisher)

3. S.P. Novikov, A.T. Fomenko, Elementy differentsial'noi geometrii i topologii, Nauka, Moscow, 1987 (Russian)

English version:

S.P. Novikov, A.T. Fomenko, Basic elements of differential geometry and topology, Kluwer Academic Publishers Group, Dordrecht, 1990. x+490 pp. ISBN: 0-7923-1009-8 [Mathematics and its Applications (Soviet Series), 60].

4. Novikov S. P., Taimanov I. A. Modern Geometric Structures and Fields [in Russian], MTsNMO, Moscow (2005); ISBN 5-94057-102-6

English version:

S.P. Novikov, I.A. Taimanov, Modern Geometric Structures and Fields, AMS, 2006, xx+633 pp., ISBN-10: 0-8218-3929-2, ISBN-13: 978-0-8218-3929-4 [Graduate Studies in Mathematics, Vol. 71].

II.A.5. Major Reference Works

II.A.6. Exhibition Catalogs

II.A.7. Other

II.B. Chapters

II.B.1. Books

1. S.P. Novikov, Four Lectures: Discretization and Integrability. Discrete Spectral Symmetries, Lect. Notes Phys., 767, 119-138 (2009), In: Integrability, ed A.V. Mikhailov, Springer, xiii, 339 pp., ISBN 978-3-540-88110-0.

2. S.P. Novikov, Four lectures on discrete systems, London Math. Soc. Lecture Note Ser., 381, 191-206, (2011), In: Levi, Decio (ed.) et al., Symmetries and integrability of difference equations. Based upon lectures delivered during the summer school, Montreal, Canada, June 8-21, 2008. Cambridge: Cambridge University Press. ISBN 978-0-521-13658-7.

II.B.2. Collections

II.B.3. Encyclopedia

1st edition: B. A. Dubrovin, I. M. Krichever, S. P. Novikov, "Integrable systems. I", pp 173-280, (1990), In: Arnol'd, V.I., Novikov, S.P. (Eds.), Encyclopaedia of Mathematical Sciences. Dynamical systems, Volume 4, Springer, Berlin, 1990, ISBN: 978-3-662-06795-6;

2nd edition: B. A. Dubrovin, I. M. Krichever, S. P. Novikov, "Integrable systems. I.", Revised and Extended, pp. 177-332, (2001) In: Arnol'd, V.I., Novikov, S.P. (Eds.), Encyclopaedia of Mathematical Sciences. Dynamical systems, Volume 4, Springer, Berlin, 2001, ISBN: 3-540-62635-2;

II.B.4. Series

II.B.5. Research Paper

II.B.6. Other

II.C. Articles in Refereed Journals

1. S.P. Novikov., Cohomology of the Steenrod algebra., Dokl. Akad. Nauk SSSR, 1959, v. 128, N 5, 893-895.

2. S.P. Novikov., Some problems in the topology of manifolds connected with the theory of Thom spaces., Dokl. Akad. Nauk SSSR, 1960, v. 132, N 5, 1031-1034., English version: Sov. Math., Dokl. **1**, 717-719 (1960)

3. S.P. Novikov., On embedding of simply-connected manifolds in Euclidean space., Dokl. Akad. Nauk SSSR, 1961, v. 138, N 4, 775-778. English version: Sov. Math., Dokl. **2**, 718-721 (1961).

4. S.P. Novikov., Diffeomorphisms of simply connected manifolds., Dokl. Akad.Nauk SSSR, April 1962, v. 143, N 5, 1046-1049 (presented for publication in December 1961 by academician P.S.Alexandrov)., English version: Sov. Math., Dokl. **3**, 540-543 (1962).

5. S.P. Novikov., Smooth manifolds of a general homotopy type., Intern. Congress Math., Stockholm, August 1962, section 4, 139.

6. S.P. Novikov., Homotopy properties of Thom complexes., Mat. Sb. 1962, v. 57, N 4, 406-442.

7. S.P. Novikov., Homotopy properties of the group of diffeomorphisms of the sphere., Dokl. Akad. Nauk SSSR, 1963, v. 148, N 1, 32-35. English version: Sov. Math., Dokl. **4**, 27-31 (1963).

8. S.P. Novikov., Some properties of manifolds of dimension 4k+2., Dokl. Akad. Nauk SSSR, 1963, v. 157, N 5, 1005-1008., English version: Soviet Math. Dokl. **3** (1962), 27-31.

9. S.P. Novikov., Differential topology, Itogi Nauka (Algebra and Topology), Inst. Nauchn. Informatsii Akad. Nauk SSSR, 1963, 134-160.

10. S.P. Novikov., Homotopically equivalent smooth manifolds, I. Izv. Akad. Nauk SSSR, 1964, v 28, N 2, 365-474., English transl. in Amer. Math. Soc. Transl. (2) **48** (1965), 271-396 .

11. S.P. Novikov., Foliations of codimension 1 on manifolds., Dokl. Akad. Nauk SSSR, 1964, v. 155, N 5, 1010-1013., English version: Soviet Math. Dokl. **5** (1964), 540-544.

12. S.P. Novikov., Foliations of codimension 1, Dokl. Akad. Nauk SSSR, 1964, v. 157, N 4, 788-790., English version: Soviet Math. Dokl. **5** (1964), 1023-1025.

13. S.P. Novikov., Smooth foliations on three-dimensional manifolds., Uspekhi Mat. Nauk, 1964, v. 19, N 6, 89-91., English version: Russian Mathematical Surveys, 1964, **19**:6, 79-81.

14. S.P. Novikov, I.I. Pyatetskii-Shapiro, I.R. Shafarevich., Main trends of algebraic topology and algebraic geometry., Uspekhi Mat. Nauk, 1964, v. 19, N 6, 75-82., English version: Russian Mathematical Surveys, 1964, **19**:6, 67-73.

15. M.I. Vishik, S.P. Novikov, M.M. Postnikov., Gorki mathematical seminar on homotopic topology (Iune 1964), Uspekhi Mat. Nauk, 1964, v. 19, N 6, 237-238.

16. S.P. Novikov., The Topology Summer Institute, Seattle, 1963, Uspekhi Mat. Nauk, 1965, v. 20, N 1, 147-170., English version: Russian Mathematical Surveys, 1965, **20**:1, 145-167.

17. S.P. Novikov., New ideas in algebraic topology (K-theory and its applications), Uspekhi Mat. Nauk, 1965, v. 20, N 3, 41-66., English version: Russian Mathematical Surveys, 1965, **20**:3, 37-62.

18. S.P. Novikov., Homotopic and topological invariance of certain rational classes of Pontryagin., Dokl. Akad. Nauk SSSR, 1965, v. 162, N 6, 1248-1251., English version: Soviet Math. Dokl. **6** (1965), 854-857.

19. S.P. Novikov., Topological invariance of rational Pontryagin classes., Dokl. Akad. Nauk SSSR, 1965, v. 163, N 2, 298-300., English version: Soviet Math. Dokl. **6** (1965), 921-923.

20. S.P. Novikov., Differentiable sphere bundles., Izv. Akad. Nauk SSSR, 1965, v. 29, N 1, 71-96., English version: Am. Math. Soc., Transl., II. Ser. 63, 217-244 (1967).

21. S.P. Novikov., Rational Pontryagin classes, Homeomorphism and homotopy type of closed manifolds., I. Izv. Akad. Nauk SSSR, 1965, v. 29, N 6, 1373-1388. English version: Am. Math. Soc., Transl., II. Ser. 66, 214-230 (1968).

22. S.P. Novikov., The topology of foliations., Trudy Moskov. Mat. Obshch, 1965, v. 14, 248-278.

23. S.P. Novikov., On manifolds with free Abelian fundamental group and their application., Izv. Akad. Nauk SSSR, 1966, v. 30, N 1, 207-246. English version: Am. Math. Soc., Transl., II. Ser. 71, 1-42 (1968).

24. S.P. Novikov, B.Yu. Sternin., Traces of elliptic operators on submanifolds and K-theory., Dokl. Akad. Nauk SSSR, 1966, v. 170, N 6, 1265-1268., English version: Sov. Math., Dokl. **7**, 1373-1376 (1966) (1965).

25. S.P. Novikov, B.Yu. Sternin., Elliptic operators and submanifolds., Dokl. Akad. Nauk SSSR, 1966, v. 171, N 3, 525- 528., English version: Sov. Math., Dokl. **7**, 1508-1512 (1966)

26. S.P. Novikov., The Cartan-Serre theorem and intrinsic homology., Uspekhi Mat. Nauk, 1966, v. 21, N 5, 217-232. English version: Russ. Math. Surv., **21** (5), 209-224 (1966).

27. A.A. Kirillow, S.P. Novikov., D.B. Fuks., I.R. Shafarevich., Second topology summer school (Druskininkai, Lithuanian SSR, 17-29 June 1965)., Uspekhi Mat. Nauk, 1966, v. 21, N 2, 257-258.

28. S.P. Novikov., Operation rings and spectral sequences of Adams type in extraordinary cohomology theories, U-cobordisms and K-theory., Dokl. Akad. Nauk SSSR, 1967, v. 172, N 1, 33-36. English version: Soviet Math. Dokl. **8** (1967), 27-31.

29. S.P. Novikov., Methods of algebraic topology from the point of view of cobordism theory., Izv. Akad. Nauk SSSR, 1967, v. 31, N 4, 885-951. English version: Math. USSR-Izv., **1** (4), 827-913 (1967).

30. S.P. Novikov., Adams operators and fixed points., Izv. Akad. Nauk SSSR, 1968, v. 32, N 6, 1245-1263., English version: Math. USSR-Izv., **2** (6), 1193-1211 (1968).

31. A.M. Vinogradov, S.P. Novikov., Homotopic and differential topology history of mathematics in the Fatherland., Naukova Dumka, Kiev, 1968, v. 3, 511-529.

32. S.P. Novikov., Pontryagin classes, the fundamental group and some problems of stable algebra, in Essays on Topology and Related Topics. (Memoires dedies a Georges de Rham), Springer, New

York, 1970, 147-155.

33. S.P. Novikov., Algebraic construction and properties of Hermitian analogues of K-theory over ring with involution from the viewpoint of Hamiltonian formalism. Applications to differential topology and the theory of characteristic classes. I., Izv. Akad. Nauk SSSR, 1970, v. 34, N 2, 253-288., English transl. in Math. USSR - Izv. **4** (1970), 257-292.

34. S.P. Novikov., Algebraic construction and properties of Hermitian analogues of K-theory over rings with involution from the viewpoint of Hamiltonian formalism. Applications to differential topology and the theory of characteristic classes. II, Izv. Akad. Nauk SSSR, 1970, v. 34, N 3, 475-500., English transl. in Math. USSR - Izv. **4** (1970), 257-292.

35. S.P. Novikov., Analogues hermitiens de la K-theorie, Actes Congr. Intern. Math (Nice 1970), Gauthier-Villars, Paris, 1971, vol. 2, 39-45.

36. V.M. Bukhshtaber, S.P. Novikov., Formal groups, power systems, and Adams operators., Mat. Sb. 1971, v. 84, N 1, 81-118. English transl. in Math. USSR - Sb. **13** (1971).

37. V.M. Bukhshtaber, A.S. Mishchenko, S.P. Novikov., Formal groups and their role in the apparatus of algebraic topology., Uspekhi Mat. Nauk, 1971, v. 26, N 2, 131-154.. English version: Russian Mathematical Surveys, 1971, **26**:2, 63-90.

38. S.P. Novikov., On some characteristics of cosmological models, Zh. Eksper. Teoret. Fiz., 1972, v. 62, N 6, 1977-1990. English version: Soviet Physics JETP **35** (1972), 1031-1037.

39. S.P. Novikov., A necessary reconstruction of mathematical education., Priroda, 1973, N 2, 57.

40. O.I. Bogoyavlenskii, S.P. Novikov., Singularities of the cosmological model of the Bianchi IX type according to the qualitative theory of differential equations., Zh. Eksper.Teoret. Fiz., 1973, v. 64, N 5, 1475-1494., English version: Soviet Physics JETP **37**:5 (1973), 747-755.

41. S.P. Novikov., A periodic problem for the Korteweg-de Vries equations. I, Funktsional Anal. i Prilozhen., 1974, v. 8, N 3, 54-66., English version: Functional Analysis and Its Applications, 1974, **8**:3, 236-246.

42. B.A. Dubrovin, S.P. Novikov., Periodic and conditionally periodic analogues of the many soliton solutions of the Korteweg-de Vries equations., Zh. Eksper. Teoret. Fiz., 1974, v. 67, N 12, 2131-2143., English version: Soviet Physics JETP, Vol.40, No. 6 (1975), 1058-1063.

43. B.A. Dubrovin, S.P. Novikov., A periodic problem for the Korteweg-de Vries and Sturm-Liouville equations. Their connection with algebraic geometry., Dokl. Akad. Nauk SSSR, 1974, v. 219, N 3, 531-534., English version: Sov. Math., Dokl. **15**(6), 1597-1601 (1974).

44. O.I. Bogoyavlenskii, S.P. Novikov., Qualitative theory of homogeneous cosmological models., Trudy Sem. Petrovsk., 1975, v. 1, 7-43. English transl. in Selecta Math. Sovietica **2** (1982).

45. O.I. Bogoyavlenskii, S.P. Novikov., The connection between the Hamiltonian formalisms of stationary and nonstationary problems, Functional Anal. Appl., 1976, v. 10, N 1, 9-13., English version: Funct. Anal. Appl., **10**(1), 8-11 (1976).

46. B.A. Dubrovin, V.B. Matveev, S.P. Novikov., Non-linear equations of Korteweg-de Vries type, finite zone linear operators, and Abelian varieties, Uspekhi Mat. Nauk, 1976, v. 31, N 1, 55-136., English version: Russ. Math. Surv., **31**(1), 59-146 (1976).

47. B.A. Dubrovin, I.M. Krichever., S.P. Novikov., The Schrödinger equation in a periodic field and Riemann surfaces., Dokl. Akad. Nauk SSSR, 1976, v. 229, N 1, 15-18., English transl. in Soviet Math. Dokl. **17** (1976).

48. O.I. Bogoyavlenskii, S.P. Novikov., Homogeneous models in general relativity theory and gas dynamics., Uspekhi Mat. Nauk, 1976, v. 31, N 5, 33-48., English version: Russian Math. Surveys 31:5 (1976), 31-48.

49. V.G. Drinfel'd, I.M. Krichever, Yu.I. Manin, S.P. Novikov., Methods of algebraic geometry in contemporary mathematical physics, Soviet. Sci. Rev. Sect C: Math. Phys. Reviews, Vol. 1, Harwood Academic Publ., Chur, 1980, pp. 1-54

50. A.S. Mishchenko, S.P. Novikov, Yu.P. Solov'ev, A.T. Fomenko., Problems in geometry, Moscow State University, M. 1978.

51. I.M. Krichever, S.P. Novikov., Holomorphic vector bundles over Riemann surfaces and the Kadomtsev-Petviashvili (KP) equation. I, Funktsional Anal. i Prilozhen, 1978, v. 12, N 4, 41-52., English version: Functional Analysis and Its Applications Volume 12, Issue 4 (1978), pp. 276-286.

52. S.P. Novikov., A method of solving the periodic problem for the Korteweg-de Vries equation and a generalization of it., Proc. All-Union Conf. on partialdifferential equations, dedicated to I. G. Petrovskii on his seventy-fifth birthday, Moscow State University, M. 1978, 184-185.

53. I.M. Krichever, S.P. Novikov., Holomorphic fiberings and non-linear equations. Finite zone solutions of rank 2., Dokl. Akad. Nauk SSSR, 1979, v. 247, N 1, 33-37., English version: Sov. Math., Dokl. **20** (4) (1979), 650-654.

54. V.L. Golo, M.I. Monastyrskii, S.P. Novikov., Solutions to the Ginzburg-Landau equations for planar textures in superfluid ^{3}He., Comm. Math. Phys., 1979, v. 69, 237-246.

55. O.I. Bogoyavlenskii, S.P. Novikov., Methods of qualitative theory of dynamics systems in general relativity theory., Non-linear waves, Nauka, Moscow, 1979, 164-176.

56. I.M. Krichever, S.P. Novikov., Holomorphic bundles over algebraic curves and nonlinear equations., Uspekhi Mat. Nauk, 1980, v. 35, N 6, 47-68., English version: Russian Math. Surveys, **35**:6 (1980), 53-79.

57. B.A. Dubrovin, S.P. Novikov., Ground states of a two-dimensional electron in a periodic magnetic field., Zh. Eksper. Teoret. Fiz., 1980, v. 79, N 3, 1006-1016., English version: Soviet Physics JETP **52**:3 (1980), 511-516.

58. B.A. Dubrovin, S.P. Novikov., Ground states in a periodic field. Magnetic Bloch functions and vector bundles. Dokl. Akad. Nauk SSSR, 1980, v. 253, N 6, 1293-1297 English version: Sov. Math., Dokl. **22** (1980), 240-244.

59. S.P. Novikov., A method of solving the periodic problem for the KdV equations and its generalization, in Solitons, ed R. K. Bullough and P. J. Caudrey, Topics in Current Physics 17, Springer, Berlin-New York, 1980, 325-338.

60. S.P. Novikov., Multivalued functions and functionals. An analogue of the Morse theory., Dokl. Akad. Nauk SSSR, 1981, v. 260, N 1, 31-35., English version: Sov. Math., Dokl. **24** (2) (1981), 222-226.

61. S.P. Novikov, I. Shmel'tser., Periodic solutions of the Kirchhoff equations for the free motion of a rigid body in a fluid and the extended Lyusternik-Shnirel'man-Morse theory. I, Funktsional Anal. i Prilozhen., 1981, v. 15, N 3, 54-66. English version: Funct. Anal. Appl. **15** (3) (1981), 197-207.

62. S.P. Novikov., Variational methods and periodic solutions of equations of Kirchhoff type. II, Funktsional Anal. i Prilozhen., 1981, v. 15, N 4, 37-52., English version: Funct. Anal. Appl. **15** (4) (1981), 263-274.

63. S.P. Novikov., Bloch functions in a magnetic field and vector bundles. Typical dispersion relations and their quantum numbers., Dokl. Akad. Nauk SSSR, 1981, v. 257, N 3, 538-543., English version: Sov. Math., Dokl. **23** (2) (1981), 298-303.

64. S.P. Novikov., Kirchhoff type equations and many-valued functions and functionals. Analogue of the Morse-Lyusternik-Shnirel'man theory and periodic orbits in a magnetic field., Report to the I. G. Petrovskii seminar, Uspekhi Mat. Nauk, 1981, v. 36, N 5, 217-219. English version: Lect. Notes

Phys. **153**, 238-240 (1982).

65. I.M. Krichever, S.P. Novikov., Algebraic geometry and mathematical physics, in Proc. US-USSR Conf. ed. V.E. Zakharov and S.V. Manakov, North-Holland, Amsterdam 1981.

66. S.P. Novikov., The Hamiltonian formalism and a many-valued analogue of Morse theory., Uspekhi Mat. Nauk, 1982, v. 37, N 5, 3-49., English version: Russian Math. Surv., **37** (5) (1982), 1-56.

67. A.P. Veselov, S.P. Novikov., On Poisson brackets compatible with algebraic geometry and the Korteweg-de Vries dynamics on the set of finite-zone potentials., Dokl. Akad. Nauk SSSR, 1982, v. 266, N 3, 533-537. English version: Sov. Math., Dokl. **26** (2) (1982), 357-362.

68. B.A. Dubrovin, S.P. Novikov., Algebro-geometric Poisson brackets for real finite-zone solutions of the sine-Gordon equation and the non-linear Schrödinger equations., Dokl. Akad. Nauk SSSR, 1982, v. 267, N 6, 1295-1300., English version: Sov. Math., Dokl. **26** (3) (1982), 760-765.

69. S.P. Novikov., Commuting operators of rank $e > 1$ with periodic coefficients., Dokl. Akad. Nauk SSSR, 1982, v. 263, N 6, 1311-1314., English version: Sov. Math., Dokl. **25** (2) (1982), 535-538.

70. S.P. Novikov, P.G. Grinevich., On the spectral theory of commuting operators of rank 2 with periodic coefficients., Funktional Anal. i Prilozhen., 1982, v. 16, N 1, 25-26., English transl. in Functional Anal. Appl. **16**:1 (1982), 19-20.

71. B.A. Dubrovin, I.M. Krichever, S.P. Novikov., Topological and algebraic-geometrical methods in contemporary mathematical physics., Soviet Scientific Reviews, Section C: Mathematical Physics Revivews., 1982, v. 3, 1-156.,

72. B.A. Dubrovin, S.P. Novikov., Hamiltonian formalism of one-dimensional systems of hydrodynamic type and the Bogolyubov-Whitham averaging method., Dokl. Akad. Nauk SSSR, 1983, v. 270, N 4, 781-785. English version: Soviet Math. Dokl. Vol. 27, (1983) No. 3, 665-669.

73. S.P. Novikov., Two-dimensional Schrödinger operators in periodic fields. Current Problem in Mathematics, VINITI, 1983, v. 23, 3-22. English version: J. Sov. Math., **28** (1) (1985), 1-20.

74. S.P. Novikov., Multivalued functionals in modern mathematical physics., Atti Accad. Sci. Torino Cl. Sci. Fis. Mat. Natur, 1983, v. 117, suppl. 2, 635-644.

75. S.P. Novikov., The analytic generalized Hopf invariant. Many-valued functionals., Uspekhi Math. Nauk, 1984, v. 39, N 5, 97-106., English version: Russ. Math. Surv. **39**:5 (1984), 113-124.

76. S.P. Novikov., Critical points and level surfaces of many-valued functions, Trudy Mat. Inst. Steklov, 1984, v. 166, 201-209., Proc. Steklov Inst. Math., **166** (1986), 27-50.

77. A.P. Veselov, S.P. Novikov., Poisson brackets and complex tori., Trudy MIAN SSSR 1984, v. 165, 49-61., English version: Proceedings of the Steklov Institute of Mathematics, **165** (1985), 53-65.

78. S.P. Novikov, I.A. Taimanov., Periodic extremals of many-valued or not everywhere positive functionals., Dokl. Akad. Nauk SSSR, 1984, v. 274, N 1, 26-28., English version: Sov. Math., Dokl. **29** (1984), 18-20.

79. B.A. Dubrovin, S.P. Novikov., On Poisson brackets of hydrodynamic type., Dokl. Akad. Nauk SSSR, 1984, v. 279, N 2, 294-297., English version: Sov. Math., Dokl. **30** (1984), 651-654.

80. Discussion with Academician S. P. Novikov, Kvant, 1984, N 10, 2-5.

81. A.P. Veselov, S.P. Novikov., Finite-zone two-dimensional potential Schrödinger operators. Explicit formulas and evolution equations, Dokl. Akad. Nauk SSSR, 1984, v. 279, N 1, 20-24., English version: Sov. Math., Dokl. **30** (1984), 588-591.

82. A.P. Veselov, S.P. Novikov., Finite-zone two-dimensional Schrödinger operators. Potential operators., Dokl. Akad. Nauk SSSR, 1984, v. 279, N 4, 784-788. English version: Sov. Math., Dokl. **30** (1984), 705-708.

83. S.P. Novikov., Algebro-topological approach to reality problems Real action variables in the theory of finite-gap solutions of the sine-Gordon equation. Zap. Nauchn. Sem. LOMI, 1984, v. 133, 177-196., English version: J. Sov. Math., **31** (6) (1985), 3373-3387.

84. S.P. Novikov., An averaging method for one-dimensional systems, in Non-linear and Turbulent Process in Physics, vol 3, Harwood Academic Publ. Chur. 1984, 1529-1540.

85. S.P. Novikov., The geometry of conservative systems of hydrodynamic type. The method of averaging for field-theoretical systems., Uspekhi Mat. Nauk, 1985, v. 40, N 4, 78-89., English version: Russian Math. Surveys **40** : 4 (1985), 85-98.

86. A.A. Balinski, S.P. Novikov., Poisson brackets of hydrodynamic type, Frobenius algebras and Lie algebras., Dokl. Akad. Nauk SSSR, 1985, v. 283, N 5, 1036-1039., English version: Sov. Math., Dokl. **32** (1985), 228-231.

87. S.P. Novikov., Algebraic topology at the Steklov Mathematical Institute of the Academy of Sciences of the USSR., Trudy Mat. Inst., Steklov, 1985, v. 169, 27-49., English version: Proc. Steklov Inst. Math. **169** (1986), 27-50.

88. S.P. Novikov., Analytical homotopy theory. Rigidity of homotopic integrals., Dokl. Akad. Nauk SSSR, 1985, v. 283, N 5, 1088-1091., English version: Sov. Math., Dokl. **32** (1985), 285-288.

89. B.A. Dubrovin, I.M. Krichever, S.P. Novikov., Integrable systems, I. Current problem in mathematics., Fundamental directions. VINITI, 1985, v. 4, 179-284., English version: Encycl. Math. Sci. **4** (1990), 173-280.

90. A.P. Veselov, I.M. Krichever, S.P. Novikov., Two-dimensional periodic Schrödinger operators and Prym's θ-functions, in Geometry Today, Internat. Conf. Rome, June 1984, Boston, 1985, 106-118.

92. S.P. Novikov., Bloch homology. Critical points of functions and closed I-forms., Dokl. Akad. Nauk SSSR, 1986, v. 287, N 6, 1321-1324., English version: Sov. Math., Dokl. **33** (1986), 551-555.

93. S.P. Novikov, M.A. Shubin., Morse inequalities and von Neumann 1-factors., Dokl. Akad. Nauk SSSR, 1986, v. 289, N 2, 289-292., English version: Sov. Math., Dokl. **34** (1987), 79-82.

94. S.P. Novikov., Topology I. Current problem in mathematics. Fundamental directions, VINITI, 1986, v. 12, 5-251.

95. S.P. Novikov, A.P. Veselov., Two-dimensional Schrödinger operators: Inverse scattering transform and evolutional equations., Physica D **18** (1-3), 267-273 (1986).

96. V.I. Arnol'd, A.M. Vershik, O.Ya. Viro, A.N. Kolmogorov, S.P. Novikov, Ya.G. Sinai, D.B. Fuks., Vladimir Abramovich Rokhlin (obituary), Uspekhi Mat. Nauk, 1986, v. 41, N 3, 159-163., English version: Russ. Math. Surv., **41** (3), 189-195 (1986).

97. V.V. Avilov, S.P. Novikov., Evolution of the Whitham zone in the Korteweg-de Vries theory., Dokl. Akad. Nauk SSSR (ser Phys), 1987, v. 294, N 2, 325-329., English version: Sov. Phys. Dokl. **32** (5), 366-368 (1987).

98. V.V. Avilov, I.M. Krichever, S.P. Novikov., Evolution of the Whitham zone in the Korteweg-de Vries theory., Dokl. Akad. Nauk SSSR (ser Phys), 1987, v. 295, N 2, 345-349., English version: Sov. Phys. Dokl. **32** (7), 564-566 (1987).

99. I.M. Krichever, S.P. Novikov., Algebras of Virasoro type, Riemann surfaces and structures in the theory of solitons., Funktsional. Anal. i Prilozhen., 1987, v. 21, N 2, 46-63., English version: Funct. Anal. Appl. **21** (2), 126-142 (1987).

100. I.M. Krichever, S.P. Novikov., Algebras of Virasoro type, Riemann surfaces, and strings in Minkowski space., Funktsional. Anal. i Prilozhen., 1987, v. 21, N 4, 47-61., English version: Funct. Anal. Appl. **21** (4), 294-307 (1987).

101. S.P. Novikov., Two-dimensional Schrödinger operator and solitons: 3-dimensional integrable

systems VIII Internat. Congr. on Math. Physics, Marseille 1986, World Scientific Publ. 1987, 226-241.

102. P.G. Grinevich, S.P. Novikov., The two-dimensional "inverse scattering problem" for negative energy and generalized analytic functions, I. Energy below the basis state., Funktsional. Anal. i Prilozhen., 1988, v. 22, N 1, 23-33., English version: Funct. Anal. Appl. **22** (1), 19-27 (1988).

103. S.P. Novikov., Analytical theory of homotopy groups, in Topology and Geometry, Rochlin Seminar, Lecture Notes in Math., 1988, vol. 1346, 99-112, Springer-Verlag.

104. I.M. Krichever, S.P. Novikov., Virasoro-type algebras, pseudo-tensor of energy-momentum and operator expansions on the Riemann surfaces., Funktsional. Anal. i Prilozhen. 1989, v. 23, N 1, 24-40., English version: Funct. Anal. Appl. **23** (1), 19-33 (1989).

105. B.A. Dubrovin, S.P. Novikov., Hydrodynamics of weakly deformed soliton lattices. Differential geometry and Hamiltonian theory., Uspekhi Math. Nauk, 1989, v.44, N 6, 29-98., English version: Russian Math. Surveys **44** : 6 (1989), 35-124.

106. I.M. Krichever, S.P. Novikov., Riemann surfaces, operator fields, strings. Analogues of the Fourier-Laurent bases, in Memorial Volume for Vadim Knizhnik, "Physics and Mathematics of Strings", eds. L. Brink, D. Friedan, A. M. Polyakov, World Scientific, Singapore, 1989, 356-388.

107. S.P. Novikov., On the quantization of finite-zoned potentials in connection with string theory., Funktsional. Anal. i Prilozhen., 1990, v. 24, N 4, 43-53., English version: Funct. Anal. Appl. **24** (4), 296-306 (1990).

108. S.P. Novikov., On the equation $[L, A] = \epsilon 1$, Progress of Theor Physics, Suppliment n 102, 1990, Kyoto, Japan, pp. 287-292.

109. S.P. Novikov., Riemann Surfaces, Operator Fields, Strings . Analogues of the Fourier-Laurent bases. Progress of Theor Physics, Supplement n 102, 1990, Kyoto, Japan, pp. 293-300.

110. S.P. Novikov., Hydrodynamics of the Soliton Lattices and Differential Geometry. (Collection of the survey articles. Potsdam. 1992, edited by A. Fokas.)

111. S.P. Novikov., Various doubles of the Hopf algebras. Operator algebras on the quantum groups and Complex Cobordisms., Uspekhi Math. Mauk, 1992, v. 47 N 5, pp. 189-190., English version: Russ. Math. Surv. **47** (5), 198-199 (1992)

112. S.P. Novikov., Action-angle Variables and Algebraic Geometry, in the volume La "Mechanique Analitique" de Lagrange et son heritage-II, Accademia delle Scienze di Torino Suppl, n 2 vol 126 (1992), pp. 139-150.

113. S.P. Novikov., Integrability in Mathematics and Theoretical Physics: Solitons. The Mathematical Intelligencer, 1992, Vol. 14, N 4, Springer-Verlag, New York.

114. S.P. Novikov., Role of Integrable Models in the development of Mathematics., (Mathematical Research today and tomorrow: Viewpoints of seven Fields Medallists) LNM, 1992, v 1525, Springer.

115. S.P. Novikov, A.Ya. Maltsev., On the Liouville form of the averaged Poisson brackets., Uspekhi Math. Nauk **48**:1 (289), 155-156 (1993)., English version: Russ. Math. Surv. **48** (1), 155-157 (1993).

116. B.A. Dubrovin, S.P. Novikov., Hydrodynamics of Soliton Lattices. Mathematical Physics Reviews, ed by B.Dubrovin and S.Novikov, Soviet Scientific Reviews ser C, v 9 part 4, 1993, pp 58-106.

117. P.G. Grinevich, S.P. Novikov., String Equation-2. Physical Solution, Algebra and Analysis, 1994, v. 6 n 3, pp. 118-140., English version: St. Petersburg Math. J., 6(3), 553-574 (1995)

118. S.P. Novikov., Solitons and Geometry. Fermi lectures 1992. Scuola Norm. Sup. di Pisa, Cambridge Univ. Press, 1994.

119. S.P. Novikov., The Semiclassical Electron in A Magnetic Field and Lattice. Some Problems of the Low Dimensional "Periodic" Topology., Geometric and Functional Analysis, v. 5, N 2 (1995), 434-444.

120. P.G. Grinevich, S.P. Novikov., Non-self-intersecting magnetic orbits on the plane. Proof of Principle of the Overthrowing of the Cycles., Topics in Topology and Mathematical Physics, 1995, AMS Translations (2), v. 170, pp. 59-82.

121. A.P. Veselov, S.P. Novikov., Exactly solvable periodic 2-d Schr"dinger operators., Uspekhi Mat. Nauk **50**:6 (306), 171-172 (1995)., English version: Russ. Math. Surv. **50** (6), 1316-1317 (1995), doi:10.1070/RM1995v050n06ABEH002689.

122. S.P. Novikov, A.Ya. Maltsev., Topological quantum characteristics observed in the investigation of conductivity in normal metals., Pisma v ZhETF **63** (10), 809-813 (1996)., English version: JETP Lett. **63** (10), 855-860 (1996), doi:10.1134/1.567102.

123. S.P. Novikov., Algebraic properties of 2D difference operators., Uspekhi Mat. Nauk **52**:1 (313), 225-226 (1997), doi:10.4213/rm809. English version: Russ. Math. Surv. **52** (1), 226-227 (1997), doi:10.1070/RM1997v052n01ABEH001756.

124. S.P. Novikov, I.A. Dynnikov., Spectral Symmetries of the Low-dimensional Schrodinger Operators and Laplace Transformations., Uspekhi Mat. Nauk **52**:5 (317), 175-234 (1997), doi:10.4213/rm889, English version: Russ. Math. Surv. **52** (5), 1057-1116 (1997), doi:10.1070/RM1997v052n05ABEH002105.

125. I.A. Dynnikov, S.P. Novikov., Laplace Transformations and Simplicial Connections., Uspekhi Mat. Nauk **52**:6 (318), 157-158 (1997), doi:10.4213/rm900. English version: Russ. Math. Surv. **52** (6), 1294-1295 (1997), doi:10.1070/RM1997v052n06ABEH002163.

126. S.P. Novikov., Schrodinger Operators on Graphs and Topology., Uspekhi Mat. Nauk **52**:6 (318), 177-178 (1997), doi:10.4213/rm910. English version: Russ. Math. Surv. **52** (6), 1320-1321 (1997), doi:10.1070/RM1997v052n06ABEH002181.

127. S.P. Novikov, A.P. Veselov., Exactly solvable two-dimensional Schrodinger operators and Laplace transformations., Amer. Math. Soc. Transl. Ser. 2, Vol. 179(33), 109-132 (1997) [Solitons, geometry, and topology: on the crossroad. Ed. by V. M. Buchstaber, S. P. Novikov. AMS, 1997, 189 pp. ISBN-10: 0-8218-0666-1, ISBN-13: 978-0-8218-0666-1;

Appendix I (S.P. Novikov): Difference Analogs of the Laplace Transformations.

Appendix II (S.P. Novikov, I.A. Taimanov): Difference analogs of the harmonic oscillator.

128. S. Novikov., Role of Integrable Models in the development of Mathematics (Corrected and improved version), published in the volume "Fields Medallist Lectures, ed by M. Atiyah and D. Iagolnizer. World Scientific, Singapore.

129. S.P. Novikov, A.Ya. Maltsev., Topological Phenomena in Normal Metals., Uspekhi Phys. Nauk **168** (3), 249-258 (1998), doi:10.3367/UFNr.0168.199803a.0249. English version: Physics-Uspekhi **41** (3), 231-239 (1998), doi: 10.1070/PU1998v041n03ABEH000373.

130. S.P. Novikov., Schrodinger operators on graphs and symplectic geometry, Fields Inst. Commun., 24, 397-413 (1999) [The Arnoldfest: Proc. Conf. in Honour of V. I. Arnold for his sixtieth birthday held in Toronto, ON, June 15-21, 1997. Ed. by E. Bierstone, B. Khesin, A. Khovanskii and J.E. Marsden. AMS, Providence, RI, 1999. xviii+555 pp. ISBN: 0-8218-0945-8].

131. S. Novikov., Discrete Schrodinger operators and topology. Mikio Sato: a great Japanese mathematician of the twentieth century, Asian J. Math. **2** (4), 921-933 (1998).

132. S.P. Novikov, A.S. Shvarts., Discrete Lagrangian Systems on Graphs. Symplecto-Topological properties., Uspekhi Mat. Nauk **54**:1 (325), 257-258 (1999), doi:10.4213/rm126. English version: Russ. Math. Surv. **54** (1), 258-259 (1999), doi:10.1070/RM1999v054n01ABEH000126.

133. S.P. Novikov., Discrete Schrodinger Operator. Published in the volume "Trudy-Proceedings

of Steklov Math Institute", 1999, vol 224, 275-290 (dedicated to the 90th birthday of L.Pontryagin), English version: Proc. Steklov Inst. Math. **224**, 250-265 (1999).

134. S.P. Novikov., The Levels of Quasiperiodic functions on the Plane. Hamiltonian Systems and Topology., Uspekhi Mat. Nauk **54**:5 (329), 147-148 (1999), doi:10.4213/rm212. English version: Russ. Math. Surv. **54** (5), 1031-1032 (1999), doi:10.1070/RM1999v054n05ABEH000212.

135. I.M. Krichever, S.P. Novikov., Trivalent graphs and solitons., Uspekhi Mat. Nauk **54**:6 (330), 149-150 (1999), doi:10.4213/rm239, English version: Russ. Math. Surv. **54** (6), 1248-1249 (1999), doi:10.1070/RM1999v054n06ABEH000239.

136. I.M. Krichever, S.P. Novikov., Periodic and almost periodic potentials in inverse problems., Inverse Problems, 1999, v 15 pp R117-R141, IOP Publishing Ltd, doi:10.1088/0266-5611/15/6/201.

137. I.M. Krichever, S.P. Novikov., Holomorphic bundles and scalar difference operators., One-point constructions., Uspekhi Mat. Nauk **55**:1 (331), 187-188 (2000), doi:10.4213/rm258. English version: Russ. Math. Surv., **55** (1), 180-181 (2000), doi:10.1070/RM2000v055n01ABEH000258.

138. I.M. Krichever, S.P. Novikov., Holomorphic bundles and difference operators. Two-point constructions., Uspekhi Mat. Nauk **55**:3 (333), 181-182 (2000), doi:10.4213/rm302. English version: Russ. Math. Surv. **55** (3), 586-588 (2000), doi:10.1070/RM2000v055n03ABEH000302.

139. B.I. Botvinnik, V.M. Buchstaber, S.P. Novikov, S.A. Yuzvinsky., The algebraic aspects of the multiplications in complex cobordism theory., Uspekhi Mat. Nauk **55**:4 (334), 5-24 (2000), doi:10.4213/rm312. English version: Russ. Math. Surv. **55** (4), 613-633 (2000), doi:10.1070/RM2000v055n04

140. S.P. Novikov., I.Classical and Modern Topology. II.Topological Phenomena in Real World Physics. published in the Special Volume-GAFA2000 (Visions in Mathematics-2000), Part 1, Birkhauser Verlag, Basel 2000, pp. 406-424.

141. A.Ya. Maltsev, S.P. Novikov., On the local systems Hamiltonian in the weakly nonlocal Poisson Brackets., Physica D 156 (2001) pp. 53-80, doi:10.1016/S0167-2789(01)00280-9.

142. P.G. Grinevich, S.P. Novikov., Real finite-gap solutions to the Sine-Gordon equation; formula for the topological charge., Uspekhi Mat. Nauk **56**:5 (341), 181-182 (2001), doi:10.4213/rm443, English version: Russ. Math. Surv. **56** (5), 980-981 (2001), doi:10.1070/RM2001v056n05ABEH000443.

143. P.G. Grinevich, S.P. Novikov., Topological Charge of the real finite-gap periodic Sine-Gordon solutions, Communication on Pure and Applied Mathematics, 2003, v LVI, dedicated to the memory of Juergen Moser, Wiley Periodicals Inc.,, n 7 pp. 956-978, doi:10.1002/cpa.10081.

144. I.A. Dynnikov, S.P. Novikov., Geometry of the Triangle Equation on Two-Manifolds., Moscow Math. J. **3** (2), 419-438 (2003) dedicated to the 65th birthday of Vladimir Arnold.

145. P.G. Grinevich, S.P. Novikov., Topological phenomena in the real periodic sine-Gordon theory., J. Math. Phys. **44** (8), 3174-3184 (2003), doi:10.1063/1.1588742.

146. A.Ya. Maltsev, S.P. Novikov., Quasiperiodic Functions and Dynamical Systems in Quantum Solid State Physics, Bull Braz. Math Soc, New Series **34** (1) pp. 171-210, 2003, doi:10.1007/s00574-003-0007-2.

147. I.M. Krichever, S.P. Novikov., 2-dimensional Toda lattice, commuting difference operators and holomorphic vector bundles., Uspekhi Mat. Nauk **58**:3 (351), 51-88 (2003), doi:10.4213/rm628. English version: Russ. Math. Surv. **58**(3), 473-510 (2003), doi:10.1070/RM2003v058n03ABEH000628.

148. S.P. Novikov., Discrete Connections and Difference Linear Equations, arXiv math-ph/0303035, Proceedings (Trudy) of the Steklov Math Institute, 2004, volume 247, pp 186-201 (in Russian), in honor of 100th anniversary of Liudmila Keldysh, Moscow, Nauka, MAIK NAUKA "INTERPERIODICA".

149. A.Ya. Maltsev, S.P. Novikov., Dynamical systems, topology, and conductivity in normal metals., J. Stat. Phys. **115** (1-2), 31-46 (2004), doi:10.1023/B:JOSS.0000019835.01125.92.

150. B.A. Dubrovin, I.M. Krichever, S.P. Novikov., Integrable Systems. I. Encyclopedia Mathematical Sciences, Dynamical Systems, vol 4 (edited by V. Arnold and S. Novikov), second, expanded and revised edition, pp. 177-332, Springer-2001, doi:10.1007/978-3-662-06791-8_3.

151. S.P. Novikov., Algebraic Topology. Modern Problems of Mathematics, Steklov Math Institute Series (founded in 2003), pp 1-46, (in Russian). Revised version of this article: Topology in the XXth Century: A view from inside., Uspekhi Mat. Nauk **59**:5 (359), 3-28 (2004), doi:10.4213/rm770. English version: Russ. Math. Surv., **59** (5), 803-829 (2004), doi:10.1070/RM2004v059n05ABEH000770.

152. S.P. Novikov., On the metric independent exotic homology., Proc. Steklov Inst. Math. **251**, 206-212 (2005).

153. I.A. Dynnikov, S.P. Novikov., Topology of the Quasi-periodic Functions on the Plane and Dynamical Systems., Uspekhi Mat. Nauk **60**:1 (361), 3-28 (2005), doi:10.4213/rm1386. English version: Russ. Math. Surv. **60** (1), 1-26 (2005), doi:10.1070/RM2005v060n01ABEH000806.

154. S.P. Novikov., Topology of Generic Hamiltonian Foliations on Riemann Surfaces., Moscow Math. J. **5** (3), 633-667 (2005) (in honor of 70th birthday of Ya.G.Sinai).

155. S.P. Novikov., Dynamical Systems and Differential Forms. Low dimensional Hamiltonian Systems., published in Contemporary Mathematics(2008), vol. 469, (AMS), pp. 271-287, Probabilistic and Geometric Methods in Dynamical Systems (K.Burns, D.Dolgopyat, Ya.Pesin, editors.), in honor of M.Brin (2008).

156. P.G. Grinevich, S.P. Novikov., Singular finite-gap operators and indefinite metrics., Uspekhi Mat. Nauk **64**:4 (388), 45-72 (2009), doi:10.4213/rm9307. English version: Russ. Math. Surv. **64**(4), 625-650 (2009), doi:10.1070/RM2009v064n04ABEH004629; arXiv:0903.3976.

157. P.G. Grinevich, A.E. Mironov, S.P. Novikov., Zero level of a purely magnetic two-dimensional nonrelativistic Pauli operator for SPIN-1/2 particles., TMF **164**(3), 333-353 (2010), doi:10.4213/tmf6543. English version: Theor. Math. Phys. **164** (3), 1110-1127 (2010), doi:10.1007/s11232-010-0089-0.

158. P.G. Grinevich, A.E. Mironov, S.P. Novikov., 2D-Schrodinger Operator, (2+1) evolution systems and new reductions, 2D-Burgers hierarchy and inverse problem data., Uspekhi Mat. Nauk **65**:3 (393), 195-196 (2010), doi:10.4213/rm9363. English version: Russ. Math. Surv. **65**(3), 580-582 (2010), doi:10.1070/RM2010v065n03ABEH004685.

159. P.G. Grinevich, A.E. Mironov, S.P. Novikov., "Erratum"– Teoreticheskaia i matematicheskaia fizika, 2011, v. 166, No 2, p. 320 (in Russian), doi:10.4213/tmf6613; English version: Theoretical and Mathematical Physics, 2011, v. 166, No 2, p. 278; doi:10.1007/s11232-011-0022-1.

160. P.G. Grinevich, S.P. Novikov., Singular Solitons and Indefinite Metrics., Dokl. Akad. Nauk. **436**(3), 302-305 (2011)., English version: Dokl. Math. **83**(1), 56-58 (2011), doi:10.1134/S1064562411010170e.

161. P.G. Grinevich, A.E. Mironov, S.P. Novikov., Two-dimensional Pauli Operator in magnetic field., Fizika Nizkikh Temperatur **37** (9-10), 1040-1045 (2011)., English version: Low Temp. Phys. **37** (9-10), 829-833 (2011), doi:10.1063/1.3670025.

162. P.G. Grinevich, S.P. Novikov., Singular Soliton Operators and Indefinite Metric., Bulletin of the Brazilian Math Society, New Series **44** (4) pp. 1-32, special issue dedicated to the 60th Anniversary of IMPA (2013), doi:10.1007/s00574-013-0035-5.

163. P.G. Grinevich, S.P. Novikov., Discrete SL_n-connections and self-adjoint difference operators on 2-dimensional manifolds., Uspekhi Mat. Nauk **68**:5 (413), 81-110 (2013), doi:10.4213/rm9553, dedicated to the 100th anniversary of I.M.Gelfand., English version: Russ. Math. Surv., 68(5), 861-887 (2013), doi:10.1070/RM2013v068n05ABEH004859.

164. P.G. Grinevich, S.P. Novikov., Spectral Meromorphic Operators and Nonlinear Systems., Uspekhi Mat. Nauk **69**:5 (419), 163-164 (2014), doi:10.4213/rm9621, English version: Russ. Math. Surv. **69** (5) (2014)] doi:10.1070/RM2014v069n05ABEH004922; arXiv:1409.6349 .

II.D. Published Conference Proceedings

II.D.1. Refereed Conference Proceedings

II.D.2. Non-Refereed Conference Proceedings

II.D.3. Historical Conference Proceedings (10 + years ago)

II.D.4. Other

II.E. Conferences, Workshops, and Talks

II.E.1. Keynotes
Plenary Speaker of the International Math Congress, Helsinki, August 1978
Invited Section Speaker at the International Math Congress, Section of Topology, Moscow, 1966
Invite Section Speaker at the International Math Congress, Section of Topology, Nice 1970
Plenary Speaker of the International Congresses in Mathematical Physics (Rome, 1977, W.Berlin,1981, Marseille, 1986, Swansea, 1988)
Leonardo Da Vinci Lecture at the University of Milan,1993
Fermi Lectures at the Scuola Norm Superiore de Pisa, June 1992
Pollack Distinguished Lecture Series at Israel, Haifa, Technion, 1999
Keynote talk "Singular Solitons" at the Beigin Conference in the Nonlinear Waves, University of Beigin, June 2010

II.E.2. Invited Talks
Made a number of invited talks in various conferences

II.E.3. Refereed Presentations

II.E.4. Refereed Abstracts

II.E.5. Refereed Posters

II.E.6. Refereed Panels

II.E.7. Non-Refereed Presentations

II.E.8. Non-Refereed Abstracts

II.E.9. Non-Refereed Posters

II.E.10. Non-Refereed Panels

II.E.11. Symposia

II.E.12. Workshops

II.E.13. Colloquia

II.E.14. Historical Conferences, Workshops, Talks (10 + years ago)

II.E.15. Other

II.F. Professional Publications

II.F.1. Reports and Non-Refereed Monographs

II.F.2. Pre-Print/Working Paper (Not Work in Progress)

II.F.3. Legal Briefs

II.F.4. Policy Briefs

II.F.5. Other

II.G. Book Reviews, Notes, and Other Contributions

II.G.1. Book Reviews

II.G.2. Essays

II.G.3. Notes

II.G.4. Manuals

II.G.5. Other

II.H. Completed Creative Works

II.H.1. Digital Media (e.g., CDs, DVDs)

II.H.2. Datasets

II.H.3. Constructed Projects

II.H.4. Demonstrations

II.H.5. Inventions

II.H.6. Original Plans and Designs

II.H.7. Photography

II.H.8. Software and Applications

II.H.9. Websites

II.H.10. Exhibitions and Installations

II.H.11. Curatorial Practice

II.H.12. Performance or Interpretation - Performing Arts

II.H.13. Direction - Performing Arts

II.H.14. Production - Performing Arts

II.H.15. Costume, Stage, Multimedia, and Theatrical Design

II.H.16. Artistic and Grafic Design

II.H.17. Dramaturgy

II.H.18. Artwork

II.H.19. Choreography

II.H.20. Playwriting, Screenwriting, and Musical Compositions

II.H.21. Work of Creative Writing

II.H.22. Performance or Interpretation - Film, Video, and Multimedia

II.H.23. Direction - Film, Video, and Multimedia

II.H.24. Production - Film, Video, and Multimedia

II.H.25. Citations and Reviews

II.H.26. Historical Completed Creative Works (10 + years ago)

II.H.27. Other

II.I. Significant Works in Public Media

II.I.1. Explanatory, Investigative, or Long-Form Journalism

II.I.2. Other Significant Journalism

II.I.3. Commentary/Analysis

II.I.4. Interactive Online Database

II.I.5. Other

II.J. Sponsored Research

II.J.1. Grants

NSF Grants for the period 1997–2003:

NSF Grant in Geometric Analysis 1997-2003, research grant for one PI (myself) supporting my research, inviting visitors, organizing Saturday seminars, supporting students, no salary to PI was paid from that grant (money less than 60,000)

NSF Grant in Geometric Analysis 2000-2003, research grant for one PI (myself), for supporting my research, inviting visitors, organizing Saturday Seminars, supporting students No salary was paid to PI from that grant (money less than 60,000)

II.J.2. Contracts

II.J.3. Other

II.K. Fellowships, Gifts and Other Funded Research

II.K.1. Fellowships

II.K.2. Gifts

II.K.3.

II.L. Submissions and Works in Progress

II.L.1. Current Grant Applications

II.L.2. Manuscripts in Preparation

II.L.3. Manuscripts under Review (indicate status: submitted or revising to resubmit)

II.L.4. Working Papers in Preparation

II.L.5. Designs in Preparation

II.L.6. Other

II.M. Centers for Research, Scholarship, and Creative Activities

II.M.1. Centers Established

II.M.2. Centers Directed

II.M.3. Simposia Organized (through center)

II.M.4. Other

II.N. Patents

II.N.1. Device

II.N.2. Other

II.O. Other Research/Scholarship/Creative Activities

III. Teaching, Mentoring and Advising.

III.A. Courses Taught

Year 2009: Sabbatical, No courses

Year 2010: Spring Semester, graduate course MATH742, Differential Topology, 3 credits, 15 students enrolled

Fall Semester,graduate course MATH730, Algebraic Topology-1, 3 credits, 10 students enrolled

Year 2011: Spring Semester, graduate course MATH742, Differential Topology, 3 credits, 4 students enrolled

Year 2012: Spring Semester, graduate course MATH742, Differential Topology, 3 credits, 3 students enrolled

Year 2013: Spring Semester, graduate course MATH734, Algebraic Topology-2, 3 credits, 8 students enrolled

Year 2014: Spring Semester, new graduate course MATH740, Fundamental Concepts of Riemannian Geometry and Topology, 3 credits, 5 students enrolled

III.B. Teaching Innovations

III.B.1. Major Programs Established

III.B.2. Education Abroad Established

III.B.3. Software, Applications, Online Education, etc.

III.B.4. Instructional Workshops and Seminars Established

III.B.5. Course of Curriculum Development

III.B.6. Historical Innovations (10 + years ago)

III.B.7. Other

III.C. Advising: Research or Clinical

III.C.1. Undergraduate

III.C.2. Master's

III.C.3. Doctoral

Grad student Kaipa Krishna Vinod (Applied Math and Statistics) ssuccessfully completed his PhD in 2009 (Novikov–adviser)

Students Roberto Deleo and Andrea Jiacobbe successfully completed their PhD's in Mathematics with Novikov as an adviser at the University of Maryland, Math Depertment(2002)

There were over 30 students who successfully completed PhD in Moscow in the period 1964–1997 with S.Novikov as an adviser in Moscow State University, Steklov and Landau Institutes. Their list is presented in the official CV's presented in the previous years to the University of Maryland.

III.C.4. Post-doctoral

III.C.5. Other Research Directions (K-12 Interactions)

III.D. Mentorship

III.D.1. Junior Faculty

III.D.2. Other

III.E. Advising: Other than Research Direction

III.E.1. Undergraduate

III.E.2. Master's

III.E.3. Doctoral

III.E.4. Post-doctoral

III.E.5. Other Advising Activities

III.F. Professional and Extension Education

III.F.1. Professional Programs Established

III.F.2. Major Extension Programs

III.F.3. Workshops

III.F.4. Other

III.G. Other Teaching Activities

IV. Service and Outreach.

IV.A. Editorships, Editorial Boards, and Review Activities

IV.A.1. Editorships

Editor-in-Chief of the Joint Math Journal Russian Math Surveys==Uspekhi Math Nauk, Russian Academy of Sciences and London Math Society

IV.A.2. Editorial Boards

Member of the board of the journal Functional Analysis Applications since 1967, vice-editor-in-chief in 2006–2013 years

IV.A.3. Reviewing Activities for Journals and Presses

IV.A.4. Reviewing Activities for Agencies and Foundations

IV.A.5. Reviewing Activities for Conferences

IV.A.6. Historical Editorships, etc. (10 + years ago)

IV.A.7. Other

IV.B. Committees, Professional & Campus Service

IV.B.1. Campus Service - Department

Served as a Member of Hiring Committee in the 2011/12 and 2012/2013 academic years

IV.B.2. Campus Service - College

IV.B.3. Campus Service - University

IV.B.4. Campus Service - Special Administrative Assignment

IV.B.5. Campus Service - Other

IV.B.6. Offices and Committee Memberships

Served twice in the Fields Medal Committee of the International Math Union, 1984-86 and 2000–2002

Served 2 years in the Shaw Prize Committee, 2006–2008

Served 2 years in the Abel Prize Committee, 2oo8–2010

Served in the Lenin and State Prizes Committees in Soviet Union since 1985 and in Russia after 1992, Komsomol Prize Committee in USSR, 1967-1972, Member of Lobachevski Prize Committee (Chairman after 1992) since 1982

Served as a President of Moscow Math Society , 1985-1996

Served as a Vice-President of the International Association of Mathematical Physics, 1986-1988

IV.B.7. Leadership Roles in Meetings and Conferences

Served as a cochair (with P-L Lions) of Scientific Program Committee for the the European Conference in Applied Mathematiscs/Applications of Mathematics (AMAM), organized by the European Math Society, Nice, 2003

Served as a Member of Program Committee for the Berlin International Math Congress , 1997-98

Served as a Member of Program Committee for the European Math Congress in Budapest, 1994-96

Served as a member of Panel in Topology for the Nice International Math Congress, 1968-70

IV.B.8. Other Non-University Committees, Memberships, Panels, etc.

IV.B.9. Historical Committees, etc. (10 + years ago)

IV.B.10. Other

IV.C. External Service and Consulting

IV.C.1. Community Engagements, Local, State, National, International

IV.C.2.International Activities

Active scientific interaction with Moscow school in Mathematics and Theoretical/Mathematical Physics and University Education described in OPA

IV.C.3. Corporate and Other Board Memberships

IV.C.4. Enterpreneural Activities

IV.C.5. Consultancies (to local, state and federal agencies; companies; organizations)

IV.C.6. Historical External Service and Consulting (10 + years ago)

IV.C.7. Other

IV.D. Non-Research Presentations

IV.D.1. Outreach Presentations

IV.D.2. Other

IV.E. Media Contributions

IV.E.1. Internet

IV.E.2. TV

IV.E.3. Radio

IV.E.4. Digital Media

IV.E.5. Print Media

IV.E.6. Blogs

IV.E.7. Feeds

IV.E.8. Other

IV.F. Community & Other Service

V. Awards, Honors and Recognition

Elected Corresponding Member of the Academy of Sciences of USSR in 1966
Elected Full Member of the same Academy in 1981
Elected Foreign Member (Foreign associate) of the National Academy of Sciencse USA (1994), Academia dei Lincei-Italy (1991), Papal (Vatican) Academy (1996), Serbian Academy of Art and Sciences (1992), Montenegro Academy of Art and Sciences (2011), Academia Europea (1993), European Academy of Sciences in Brussels (2003))
Elected Honorary Member of London Math Society (1987) and Honorary President of Moscow Math Society (2010)
Doctor Honoris causa at the University of Athens (1988) and University of Tel Aviv (1999)

V.1. Research Fellowships, Prizes and Awards

Fields Medal of the International Math Union, 1970
Wolf Prize in Mathematics, 2005
Lenin Prized in Mathematics, 1967
Lobachevski International Prize of the Soviet Academy of Sciences, 1981
Bogoliubov Gold Medal of the Russian Academy of Sciences, 2009
Pogorelov Prize of the Ukrainian National Academy of Sciences (NANU), 2013
Euler Medal of the Russian Academy of Sciences, 2013
Moscow Math Society Award for young mathematicians, 1964

V.2. Teaching Awards

V.3. Service Awards and Honors

V.4. Recognition in Media

V.5. Other Special Recognition

VI. Other Information