

Mikhail A. MALAKHALTSEV

CURRENT ADDRESS: Department of Mathematics, Kazan University, Kremlevskaya, 18, 420008: Kazan, RUSSIA

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PLACE AND DATE OF BIRTH: Kazan, Russia, January 28, 1961

ACADEMIC DEGREES: Candidate of Physics and Mathematics. (Kazan State University, Soviet Union, 1988)

ACADEMIC POSITIONS HELD: Assistant of Geometry Chair, Kazan State University, (1/88-8/92)

Senior Lecturer of Geometry Chair of Kazan State University, Russia (9/92-present time)

Professor Silla Sanford, University "Los Andes", Bogota, Colombia (September-October, 2006)

PUBLICATIONS

1. *On intrinsic geometry of Neifeld connection*, Izv. vuzov. Matematika (Soviet Mathematics), No 2, 1986, 67-69.
2. *L-geodesic lines and Egiazarjan projection of connection*, DAN SSSR, Vol 288, No 3, 543-546.
3. *On tensors preserved by L-geodesic transformations and by Egiazarjan projection of connection*, Izv. vuzov. Matematika (Soviet Mathematics), No 7, 1986, 82-84.
4. *An analogue of the Dolbeault cohomology for manifolds over manifolds over algebra of dual numbers*, Izv. vuzov. Matematika (Soviet Mathematics), No 11, 1990, 82-84.
5. *On a class of manifolds over algebra of dual numbers*, Trudy geom. semin., Kazan, vyp. 21, 1991, 70-78.
6. *(X, G)-foliations*, Proceedings of the International Geometric Conference "Lobachevskii and Modern Geometry", Kazan, Vol.1, 1992, p.55.
7. *Structures of manifolds over dual numbers on torus*, Trudy geom. semin., Kazan, vyp. 22, 1994, 47-61.

8. *Foliation with tangential (X, G) structure*, Izvestia vuzov (Russian Mathematics) 1996, 7, 65–76.
9. 20) *On cohomology of sheaves over foliation with tangential (X, G) -structure* Topology and Applications, International Topological Conference dedicated to P.S.Alexandroff's 100th Birthday Moscow May 27–31, 1996, 193–194
10. *Godbillon and Vey classes of one-dimensional manifold over local algebra*, Proceedings of Geometrical Seminar, Issue 23, 1997, 65–76
11. *Special classes of foliations with tangential (X, G) -structure* International Conference dedicated to the 90th Anniversary of L.S.Pontryagin, Abstracts, August, 31 - September, 6, 1998, Moscow, 81-82
12. *The Lie derivative and cohomology of G -structures*. Lobachevskii Journal of Mathematics, 1999, Vol.3, pp.215-220;
13. *Cohomology of groupoid of foliation with leafwise (X, G) -structure* Invariant methods of investigation on the manifolds of structures of geometry, calculus and mathematical physics (International Conference dedicated to the 90th Anniversary of G.F.Laptev, Proceedings, October, 25-30, 1999, Moscow), p. 31
14. *Groupoid cohomology // Theory of functions and its applications* (Proceedings of scientific school devoted to 130th Anniversary of D.F.Egorov, Kazan, September, 13-18, 1999), pp. 147-148.
15. *Groupoid cohomology. II* Invariant methods of investigation on the manifolds of structures of geometry, calculus and mathematical physics (International Conference dedicated to the 90th Anniversary of G.F.Laptev, Proceedings, October, 25-30, 1999, Moscow), p. 157-161
16. *Spencer complex for symplectic structure*. Proceedings of Lobachevskii Mathematical Center, Urgent problems of Mathematics and Mechanics, Vol. 5, 2000, pp. 137-138.
17. *Spencer complex of regular poisson structure*, International Workshop "Topology, Analysis and Related Topics" dedicated to the 60th birthday of A.S. Mishchenko. - Moscow State University, August 29-31 2001 pp. 13-14

18. *Vaisman complex and hamiltonian vector fields*, Urgent problems of mathematics and its teaching, Penza, 2001, p. 55-58
19. *Foliations with leafwise structures* J. of Math. Sci.- vol. 108, N2.- 2002.- pp. 188-210.
20. *Integrable G-structures with singular points*, "Motions of generalized spaces", Penza, 2002, - pp.43-47.
21. On infinitesimal deformations of singular symplectic structures / Abstracts of International Conference "Kolmogorov and Modern Mathematics", (Moscow, June, 16-21, 2003), 2003, p. 823.
22. *Infinitesimal deformations of a symplectic structure with singularities*. Russ. Math. 47, No.11, 38-46 (2003)
23. Singular symplectic structures // Theses of reports on the international conference "Geometry in Odessa-2004. Differential Geometry and its Applications". - Odessa, 2004, May, 17 - May, 29. - pp.53-54.
24. *Sheaf of local hamiltonians of symplectic manifolds with Martinet singularities* Russ. Math. No.11, 45-52 (2004).
25. *Differential complex associated to closed differential forms of nonconstant rank*, Lobachevskii Journal of Mathematics, Vol.23, pp.183-192 (2006).
26. *De Rham cohomology* to be published in handbook "Global analysis", Elsevier.

PROFESSIONAL ACTIVITIES

A. National and International Conferences

1. **May 1987** All-Union School of Geometry, Chernovtsy, USSR, "L-geodesic lines and Egiazarjan projection of connection"
2. **June 1990** Global Differential Geometry and Global Analysis" TU Berlin, Germany, "Manifolds over algebra of dual numbers: cohomology of holomorphic sheaves and their applications"

3. **March 1991** Scientific Conference of Young Researches, University of Friendship of People, Moscow, "Manifolds over algebra of dual numbers and bundles"
4. **March 1991** Seminar talk, G.F.Laptev All-Union Geometrical Seminar Moscow, "Manifolds over algebra of dual numbers and foliations"
5. **August 1992** International Geometric Conference "Lobatchevskii and Modern Geometry" , Kazan, Russia, "(X,G)-foliations"
6. **October 1992** Lie-Lobachevsky Colloquium, Tartu, Estonia, "(X,G)-foliations and their characteristic classes"
7. **August 1994** International Geometric Conference "Classic and Quantum Geometry of Homogeneous Spaces" Moscow, Russia, "Connections associated with (X,G)-foliations"
8. **Jan 1995** International Geometric Seminar devoted to centenary of Petr Alekseevich Shirokov, Kazan, Russia, "Deformations of (X,G)-foliations"
9. **June 1995** International Geometric Conference "Foliations: Geometry and Dynamics", Warsaw, Poland, "Foliations with tangential (X,G)-structure and their deformations"
10. **May 1996** International Topological Conference dedicated to P.S.Alexandroff's 100th Birthday, Moscow, Russia, "On cohomology of a sheaf over foliation with tangential (X, G) -structure"
11. **January 1997** International Geometrical Lobachevskii Seminar "Modern Geometry and Field Theory", Kazan, Russia, "On the canonical foliation of one-dimensional manifold over algebra"
12. **September, 1998** International Seminar "Towards 100 years after Sophus Lie", Kazan, Russia, "The Lie derivative and cohomology theory"
13. **September, 1998** International Conference Dedicated to the 90th Anniversary of L.S.Pontryagin, 1998, Moscow, Russia, "Special classes of foliations with tangential (X,G)-structure"

14. **October, 1999** International Conference dedicated to the 90th Anniversary of G.F.Laptev, Moscow, Russia, "Cohomology of groupoid of foliation with leafwise (X, G) -structure"
15. **September, 1999** National conference devoted to 130th Anniversary of D.F.Egorov, Kazan, Russia, "Groupoid cohomology"
16. **August, 2001** International Conference "Topology, analysis and other problems of mathematics", Moscow, Russia, "Spencer complex of regular Poisson structure"
17. **October, 2002** International Conference "Geometry and Analysis", Penza, Russia, "Integrable G -structures with singular points"
18. **June, 2003** International Conference "Kolmogorov and Contemporary Mathematics". Moscow, Russia, "On infinitesimal deformations of singular symplectic structures"
19. **May, 2004** International Conference "Geometry in Odessa-2004. Differential Geometry and its Applications", Odessa, Ukraine, "Singular symplectic structures"
20. **April, 2006** Workshop "Formal theory of partial differential equations and their applications", Joensuu, Finland, "Infinitesimal deformations of G -structures with singularities"
21. **October, 2006** Taller III "Geometry and topology" University "Los Andes", Bogota, Colombia, "Differential complex associated to closed differential forms of nonconstant rank".

B. Conferences at Universities and Research Institutions

1. **January, 1986** Seminar talk, Kazan State University, Kazan, "One application of Van's theorem"
2. **April, 1987** Seminar talk, Moscow State University, Moscow, "L-geodesic lines"
3. **January, 1988** Seminar talk, Kazan State University, Kazan, "On topological properties of certain manifolds over algebras"

4. **January, 1989** Seminar talk, Kazan State University, Kazan, "Holomorphic vector fields sheaves on manifolds over algebra of dual numbers"
5. **January, 1990** Seminar talk, Kazan State University, Kazan, "Vector bundles over algebras"
6. **January, 1991** Seminar talk, Kazan State University, Kazan, "Lie algebras over commutative algebras"
7. **May, 1991** Seminar talk, MISIS, Moscow, "A construction of non-trivial manifolds over algebra of dual numbers"
8. **January, 1992** Seminar talk, Kazan State University, Kazan, "Some topological properties of manifolds over algebra of dual numbers"
9. **January, 1993** Seminar talk, Kazan State University, Kazan, "Invariants of (X, G) -foliations"
10. **June, 1993** Seminar talk, Kazan State University, Kazan, " Special classes of (X, G) -foliations"
11. **January, 1994** Seminar talk, Kazan State University, Kazan, "Characteristic classes of (X, G) -manifolds and their computation"
12. **February, 1995** Seminar talk, Kazan State University, Kazan, "Deformations of structures of (X, G) -foliations"
13. **February, 1997** Seminar talk, Kazan State University, Kazan, "On canonical foliation of one-dimensional manifold over local algebra"
14. **February, 1997** Seminar talk, Kazan State University, Kazan, "On canonical foliation of one-dimensional manifold over local algebra"
15. **August, 2000** Conference devoted to 40th anniversary of Mathematical Department of Kazan State University, Kazan State University, Kazan, "Spencer complex of symplectic structure"
16. **September, 2001** Conference "Geometrization of physics", Kazan State University, Kazan, "Lie derivative and Poisson Geometry"

17. **October, 2001** Conference devoted to 125th anniversary of Kazan State Pedagogical University, Kazan State Pedagogical University, Kazan, “Stratified integrable tensor structure”
18. **December, 2002** N.I.Lobachevskii International Seminar, “On Chern’s results”, “Spencer complex of nonregular Poisson structure”
19. **September, 2004** Conference “Urgent problems of mathematics and mechanics” devoted to 200th anniversary of Kazan State University, “Sheaf of local hamiltonians of symplectic manifolds with Martinet singularities”.

LECTURE COURSES

1. Differential Geometry and Topology
2. Lie Groups and Lie Algebras
3. Fiber bundles
4. Differential manifolds and Riemannian geometry
5. Theory of singularities
6. Representation Theory
7. Algebraic Topology
8. Mathematical Programs in Linux
9. Symplectic Geometry
10. Geometric Methods in Contemporary Theoretical Physics

ADDITIONAL INFORMATION

Secretary of Editorial Board of “Lobachevskii Journal of Mathematics”
(<http://ljm.ksu.ru>)
Reviewer of “Zentralblatt fuer Mathematik”