CV of Dr. PETER M. AKHMETIEV

Personal Record

Born: 2 February 1963, Moscow, Russia
Nationality: Russian
Languages: English, French
Home Address: 142092 Moscow Region, Troitsk, IZMIRAN
Email: pmakhmet@mi.ras.ru pmakhmet@izmiran.ru

Education

1980–1985 Diploma in Mathematics (BS & MS), Moscow State University
1985–1989 PhD, Steklov Institute "Splittings of homotopy equivalences of smooth manifolds along one-sided submanifolds"
2000 Dr. in Sc. (Doktorskaja dissertazija), Steklov Institute "Embeddings of compacta, stable homotopy groups of spheres and singularities theory"

Career

1994–1998 Moscow International University
2001–2014 Moscow State University, Economic dpt., professor
2007–2013 Moscow Psychology-Pedagogical University, professor
1989– Institute of Terrestrial Magnetism, Ionosphere and Radio Wave Propagation, Russian Academy of Science, researcher.

Scientific interests

Algebraic topology, magneto- hydro- dynamics.

Selected relevant publications

1. (with Yu B Rudjak) „On the Bokshtein homomorphisms on an infinite CW-complex“ Vestnik MGU 1 (5) (1985), (3 pp).

2. „Splitting of homotopy equivalences along a one-sided submanifold of codimension 1“ Izvestiya AN SSSR math. 51 (2) (1987), 211-241.

3. „Second moments of secular variations of magnetic field of the Earth“ Magnitnaya Gidrodynamika (1993) N1, 3-12.

4. (with A. Ruzmaikin) „Topological invariants of magnetic lines“ Phys. Plasmas 1(2) (1994), 331–336.

5. (with A. Ruzmaikin) „A forth-order topological invariant of magnetic or vortex lines“ Journal of Geometry and Phisics, vol.15 (1994), 1-7.

6. „Smooth immersions of manifolds of low dimension“ Mat Sbornik 185 (10) (1994), 3–26. English translation Vol 83 (1) (1995), 155–176.

7. „A high-order helicity invariant and the Rokhlin theorem“ Supplemento ai Rendiconti del Circolo Matematico di Palermo Serie II N43 (1996) 85-94.

8. „Smooth immersions of manifolds of low dimension II“ Mat. Sbornik, 186 (1995), 37–62. English translation 186:12, 1727–1751.

9. „On the realization problem of maps of the n-sphere in $2n$-space“ Mat. Sbornik 187 (7) (1996), 1–34, English translation 187:7 951-980.

10. „Mapping an n-Sphere into a 2n-Euclidean Space: Its Realization“ Proc. Steklov Institute of Mathematics, Vol 212 (1996) 32-39.

11. (with Yu.V.Muranov) |“Obstructions for splitting along submanifolds with infinite fundamental group“ Mat.Zametki Vol 60 N2 (1996) 163-175.

12. „Electromagnetic field for 3D-model of the Earth mantle“ Phys. Zemli, (1997) N6, 56-63.

13. (with A.Szucs and R.Rymanyi) „A generalization of Banchoff's triple point theorem“ Proc. Amer. Math. Soc. 126 (1998) 913-915.

14. (with Repovs, D. and Skopenkov, A.B.) „Embedding products of low-dimensional manifolds into R^m“ (English) Topology Appl. 113, No.1-3, 7-12 (2001).

15. (with A. Szucs) „Geometric proof of the easy part of the Hopf invariant one theorem“ Math. Slovaca, 49 (1999) N1, 71-74.

16. (with D.Repovs) „A generalization of the Sato-Levine invariant“ Proceedings of the Steklov Institute of Mathematics (1998) Vol. 221, 69-80.

17. (with A.Cavicchioli and D.Repovs) „On Realization of splitting obstruction in Browder-Livesay groups for closed manifold pairs“ Proc. of Edinburgh Math. Soc. N43 (2000) 1-11.

18. (with P.M.; Repovs D. and Skopenkov, A.B.) „Obstructions to approximating maps of n-manifolds into R^{2n} by embeddings“ (English) Topology Appl. 123, No.1, 3-14 (2002).

19. „prem-Mappings, triple self-intersection points of oriented surfaces and the Rokhlin signature theorem“ Mat Zametki, Vol 59 N6 (1996), English translation 581-585.

20. „An elementary proof of Freedman's theorem on immersions“ Algebra i Analiz 7 (1995) 5, English translation St.Petersburg Math.J. Vol 7 (1996), N5. 749-754.

21. (with P.J.Eccles) „A geometrical proof of Browder's result on the vanishing of the Kervaire invariant“ The report at the conference on 60-th Birthday of S.P.Novikov. Proc. Steklov Institute of Mathematics, Vol. 225 (1999) 40-44.

22. „Generalized Daverman's Problem“ The Report at the conference on 90-th Birthday of L.S.Pontrjagin. Journal of Mathematical Sciences, Vol 105, N2, (2001) 1813-1818.

23. „On a higher analog of the linking number of two curves“ Feigin, B. (ed.) et al., Topics in quantum groups and finite-type invariants. Mathematics at the Independent University of Moscow. Providence, RI: American Mathematical Society. Transl. Math. Monogr. 185(38), 113-127 (1998).

24. (with S.A.Melikhov) „On the Isotopical Realization of continuous mappings“ Proc. POMI vol.5 (2000), V.A.Rokhlin International Conference.

25. „Embeddings of compacta, stable homotopy groups of spheres and singularities theory“ Uspekhi Mat. Nauk, 3 (2000) 2-62.

26. (with D.Repovs and J.Malesic) „A formula for generalized Sato-Levine invariant“ Mat. Sbornik N1 (2001) 1-10.

27. (with D.Repovs and J.Malesic) „On Milnor invariants of 4-components links“ Mat.Zametki, Vol.71, N4 (2002) 496-507.

28. (with D.Repovs and J.Malesic) „On Euller characteristic of multiple points of immersed manifolds“ Sibirsky Math. Journal, Vol. 44, N2 (2003) 256-262.

29. „K_2 for simplest integer groups and topological applications“ Mat.Sbornik, N1 (2003) 3-10.

30. „A Remark on the Realization of Mappings of the 3-Dimensional Sphere into Itself“ Tr. Mat. Inst. Steklova, (2004) 247, 10–14

31. „Pontryagin–Thom construction for approximation of mappings by embeddings“ Topology Appl. 140, No. 2-3, 133-149 (2004).

32. (with Sadykov, R. R.) „A remark on elimination of singularities for mappings of 4-manifolds into 3-manifolds“ (English) Topology Appl. 131, No. 1, 51-55 (2003).

33. „Classification of Harmonic Functions in the Exterior of the Unit Ball“ (with A. V. Khokhlov) Mat. Zametki, (2004) 75:2, 182–191.

34. „On a new integral formula for an invariant of 3-component oriented links“ (English) J. Geom. Phys. 53, No. 2, 180-196 (2005).

35. „Some Algebraic Properties of Cerf Diagrams of One-Parameter Function Families“ (with D. Repovs and M. Cencelj) Funkts. Anal. Prilozh., (2005) 39:3, 1–13.

36. P.M.Akhmet'ev and P.J.Eccles, „The relationship between framed bordism and skew-framed bordism“ Bull. London Math. Soc., vol. 39, 4 (2007) 473-481.

37. „Geometric approach to stable homotopy groups of spheres. Kervaire invariants. II“ Fundam. Prikl. Mat., (2007) 13:8, 17–41.

38. „Geometric approach to stable homotopy groups of spheres. The Adams–Hopf invariants“ Fundam. Prikl. Mat., (2007) 13:8, 3–15.

39. „Integral Formula for a Generalized Sato–Levine Invariant in Magnetic Hydrodynamics“ (with O. V. Kunakovskaya) Mat. Zametki, (2009) 85:4, 524–537.

40. „Remark on the dissipation of the magnetic helicity integral“ (with O. V. Kunakovskaya and V. A. Kutvitskii) TMF, (2009) 158:1, 150–160.

41. „Hypermagnetic helicity flux in the nuclei of a new phase in the electroweak phase transition“ (with V. B. Semikoz and D. D. Sokolov) Pis'ma v Zh. Eksper. Teoret. Fiz., 91:5 (2010), 233–236.

42. „Квадратичные спиральности и энергия магнитного поля“ Тр. МИАН, 278 (2012), 16–28.

43. (with O.D.Frolkina) „On non-immersibility of $\mathbb{R}P^{10} \to \mathbb{R}^{15}$“, Topology and its Applications Volume 160, Issue 11, 1 July 2013, 1241–1254

44. „Приложение теории особенностей для статистики палеомагнитных данных“, Геомагнетизм и Аэрономия, 2013, том 53 N5 стр 1-6.

45. „On a higher integral invariant for closed magnetic lines“, Journal of Geometry and Physics 74 (2013) 381-391.

46. "A Remark on the Hopf invariant for Spherical 4-braids"J Phys Math 2014, 5:1.

47. "On combinatorial properties of a higher asymptotic ergodic invariant of magnetic lines"Journal of Physics: Conference Series 544 (2014) 012015.

48. „On asymptotic higer analogs of the helicity invariant in magnetohydrodynamics“ Journal of Mathematical Sciences, Vol. 200, No. 1, July, 2014.

Invited conference address

I was an invited speaker at the following conferences:

1. L-theory (Germany, Oberwolfakh, 1990)

2. The Kervaire invariant and stable homotopy theory Apr 25, 2011 - Apr 29, 2011 15 South College Street, Edinburgh EH8 9AA.

3. Entanglement and Linking 18 May 2011 - 19 May 2011, Pisa, Italy.

4. Quantised Flux in Tightly Knotted and Linked 3 – 7 December 2012 at the Isaac Newton Institute, Cambridge.