

PUBLICATIONS OF ALEKSY TRALLE

Since 1999 all my papers are available in ArXiv

Research Monograph

1. *Symplectic manifolds with no Kähler structure*, **Lecture Notes in Mathematics**, 1661, Springer, Berlin, 1997 (with J. Oprea)

Articles in journals (accepted/published)

2. *Standard compact Clifford-Klein forms and Lie algebra decompositions*, **Transformation Groups**, 30(2025), 1535-1552.
3. *Non-virtually abelian group actions vs. proper $SL(2, R)$ -actions on homogeneous spaces*, **Experimental Mathematics**, 34(2025), 307-315 (with M. Bocheński, W. de Graaf and P. Jastrzębski)
4. *Stretched non-positive Weyl connections on solvable Lie groups*, **Annali di Matematica Pura ed Applicata**, 203(2024), 1463-1481 (with M. Bocheński and P. Jastrzębski)
5. *Negative Sasakian structures on simply-connected 5-manifolds*, **Mathematical Research Letters**, 29(2022), 1827-1857 (with V. Muñoz and M. Schütt)
6. *On the classification of Smale-Barden manifolds with Sasakian structures*, **Communications in Contemporary Mathematics**, 24(2022), no. 9, art. no. 2150077 (with V. Muñoz)
7. *Quasi-regular Sasakian and K-contact structures on Smale-Barden manifolds*, **Revista Matemática Iberoamericana**, 38(2022), 1029-1050 (with A. Cañas, V. Muñoz, M. Schütt)
8. *Homogeneous spaces of real simple Lie groups with proper actions of non virtually abelian discrete subgroups: a computational approach*, **Journal of Symbolic Computation**, 113(2022), 171-180
9. *Semisimple subalgebras in simple Lie algebras and a computational approach to the compact Clifford-Klein forms problem*, **Experimental Mathematics**, 30(2021), 86-94 (with M. Bocheński, P. Jastrzębski, A. Szczepkowska and A. Woike)

10. *Homology Smale-Barden manifolds with K-contact and Sasakian structures*, **International Mathematics Research Notices IMRN**, no. 21(2020), 7397-7432 (with V. Muñoz and J. A. Rojo)
11. *On locally homogeneous pseudo-Riemannian compact Einstein manifolds*, **Journal of Geometry and Physics**, 155(2020), art. no. 103778 (with M. Bocheński)
12. *Non-existence of standard compact Clifford-Klein forms of homogeneous spaces of exceptional Lie groups*, **Mathematics of Computation**, 89(2020), 1487-1499 (with M. Bocheński and P. Jastrzębski)
13. *On the Hirzebruch-Kobayashi-Ono proportionality principle and the non-existence of compact solvable Clifford-Klein forms of certain homogeneous spaces*, **Forum Mathematicum**, 32(2020), 471-477 (with M. Bocheński)
14. *On formality of homogeneous Sasakian manifolds*, **Complex Manifolds**, 6(2019), 160-169 (with I. Morocka-Tralle)
15. *Chern's contribution to the Hopf problem: an exposition based on Bryant's paper*, **Differential Geometry and its Applications**, 57(2018), 138-146 (with M. Upmeyer)
16. *On fibers of fat associated bundles*, **Colloquium Mathematicum**, 150(2017), 149-159 (with M. Bocheński, A. Szczepkowska, A. Woike)
17. *On locally homogeneous compact pseudo-Riemannian manifolds*, **Colloquium Mathematicum**, 150(2017), 135-139 (with M. Bocheński, P. Jastrzębski)
18. *On solvable compact Clifford-Klein forms*, **Proceedings of the American Mathematical Society**, 145(2017), 1819-1832 (with M. Bocheński), Erratum: 148(2020), 2743-2744
19. *Proper $SL(2, R)$ -actions on homogeneous spaces*, **International Journal of Mathematics**, 27(2016), 1650601 (10 pp) (with M. Bocheński, P. Jastrzębski and T. Okuda)
20. *On a classification of fat bundles over compact homogeneous spaces*, **Differential Geometry and its Applications**, 49(2016), 131-141 (with M. Bocheński, A. Szczepkowska and A. Woike)
21. *On formality of Sasakian manifolds*, **Journal of Topology**, 9 (2016), 161-180 (with I. Biswas, M. Fernández and V. Muñoz)

22. *Clifford-Klein forms and a -hyperbolic rank*, **International Mathematics Research Notices**, no 15 (2015), 6267-6285 (with M. Bocheński)
23. *Simply connected K -contact and Sasakian manifolds in dimension 7*, **Mathematische Zeitschrift**, 281(2015), 457-470 (with V. Muñoz)
24. *On symplectically fat twistor bundles*, **Annals of Global Analysis and Geometry**, 48(2015), 181-194 (with M. Bocheński, A. Szczepkowska and A. Woike)
25. *New constructions of symplectically fat fiber bundles*, **Journal of Fixed Point Theory and Applications**, 17(2015), 66-81 (with M. Bocheński, A. Szczepkowska, A. Woike)
26. *On simply connected K -contact non Sasakian manifolds*, **Journal of Fixed Point Theory and Applications**, 16(2014), 229-241 (with B. Hajduk)
27. *Generalized symplectic symmetric spaces*, **Geometriae Dedicata**, 171 (2014), 329-343 (with M. Bocheński)
28. *Nonsymplectic smooth circle actions on symplectic manifolds*, **Mathematica Slovaca** 62(2012), 539-550 (with B. Hajduk and K. Pawałowski)
29. *On the algebraic independence of hamiltonian characteristic classes*, **Journal of Symplectic Geometry** 9(2011), 1-9 (with S. Gal and J. Kędra)
30. *On non-degenerate coupling forms* **Journal of Geometry and Physics** 61(2011), 462-475 (with J. Kędra and A. Woike)
31. *Symplectically aspherical manifolds*, **Jornal of Fixed Point Theory and Applications** 3(2008), 1-21 (with J. Kędra and Y. Rudyak)
32. *Exotic smooth structures and symplectic forms on closed manifolds*, **Geometriae Dedicata**, 132(2008), 31-42 (with B. Hajduk)
33. *Fundamental groups of symplectically aspherical manifolds II: abelian groups*, **Mathematische Zeitschrift** 256(2007), 825-835 (with J. Kędra and Y. Rudyak)
34. *Diffeomorphisms and almost complex structures on tori*, **Annals of Global Analysis and Geometry** 28(2005), 337-349 (with B. Hajduk).

35. *Fundamental groups of symplectically aspherical manifolds*, **Mathematische Zeitschrift** **248**(2004), 805-826 (with R. Ibáñez, J. Kędra, Y. Rudyak).
36. *A note on hamiltonian circle actions and Massey products*, **Bulletin of the Polish Academy of Science (Mathematics)** **52**(2004), 141-149 (with Z. Szepień).
37. *On certain geometric and homotopy properties of closed symplectic manifolds*, **Topology and its Applications** **127**(2003), 33-45 (with R. Ibáñez, Y. Rudyak, L. Ugarte).
38. *On symplectically harmonic cohomology of six-dimensional nilmanifolds*, **Commentarii Mathematici Helvetici** **76**(2001), 89-109, (with R. Ibáñez, Y. Rudyak, L. Ugarte).
39. *On Thom spaces, Massey products and non formal symplectic manifolds*, **International Mathematics Research Notices** **10**(2000), 495-513 (with Y. Rudyak).
40. *On symplectic manifolds with aspherical symplectic form*, **Topological Methods of Nonlinear Analysis** **14**(1999), 353-362 (with Y. Rudyak).
41. *On solvmanifolds and a conjecture of Benson and Gordon from the Hamiltonian viewpoint*, **Journal of Lie Theory** **8**(1998), 279-292 (with W. Andrzejewski).
42. *Compact Kähler completely solvable solvmanifolds are tori*, **International Mathematics Research Notices** **15**(1997), 727-732 (with J. Kędra).
43. *Koszul-Sullivan models and cohomology of certain solvmanifolds*, **Annals of Global Analysis and Geometry** **15** (1997), 347-360 (with J. Oprea).
44. *Rational models of solvmanifolds with Kähler structures*, **Revista Matemática Universidad Complutense de Madrid** **10**(1997), 157-176
45. *On compact symplectic and Kählerian solvmanifolds which are not completely solvable*, **Colloquium Mathematicum** **73**(1997), 261-283
46. *Fat bundles and formality*, **Annales Polonici Mathematici** **65**(1997), 105-118 (with W. Andrzejewski)

47. *Generalized symmetric spaces and minimal models*, **Annales Polonici Mathematici** **64**(1996), 17-35 (with A. Dumańska-Małyszko and Z. Stępień)
48. *Applications of rational homotopy to geometry (results, problems, conjectures)*, **Expositiones Mathematicae** **14** (1996), 425-472.
49. *On symplectic fat bundles*, **Bulletin of the Polish Academy of Science (Mathematics)** **43** (1995), 161-167 (with J. Kędra).
50. *Cohomology of some graded differential algebras*, **Fundamenta Mathematica** **145** (1994), 181-204 (with W. Andrzejewski).
51. *Rational homotopy theory and geometric structures on smooth manifolds*, **Reports on Mathematical Physics** **34** (1994), 17-32.
52. *On Hochschild and cyclic homology of certain compact homogeneous spaces*, **Czechoslovak Mathematical Journal** **43** (1993), 615-634.
53. *Cyclic homology of some topological spaces that are formal in the sense of Sullivan*, **Matematyckie Zametki** **50**(6) (1991), 131-141 (in Russian), English transl. in **Mathematical Notes** **50** (6)(1991), 1305-1312.
54. *Some generalized symmetric spaces of zero Euler characteristic*, **Izvestiya Vysshikh Uchebnykh Zavedeniy** **4**(1991), 84-88 (in Russian)
English transl: **Soviet Mathematics** **4**(1991), 86-90
55. *Cyclic homology of some topological spaces*, **Uspekhi Matematicheskikh Nauk** **46** (1991), 195-196 (in Russian)
English transl.: **Russian Mathematical Surveys** **46**(1991), 231-232
56. *A new existence theorem for the generalized symmetric spaces of solvable type*, **Annals of Global Analysis and Geometry** **8** (1990), 147-158.
57. *A contribution to the theory of generalized symmetric spaces of solvable type*, **Comptes Rendus de l'Academie Bulgare de Sciences** **43**(1990), 29-32.
58. *On naturally reductive and k -symmetric Riemannian symmetric spaces*, **Comptes Rendus de l'Academie Bulgare de Sciences** **42**(1989), 5-7.

59. *On 3-symmetric Riemannian spaces of solvable type*, **Commentationes Mathematicae Universitatis Carolinae** **30**(1989), 803-809
60. *On the group of isometries of a generalized Riemannian symmetric space*, **Matematyczne Zametki** **41** (2)(1987), 247-258 (in Russian), English transl. in **Mathematical Notes** **41** (1987), 141-147.

Contribution to books/conference proceedings

61. *Some Topics in Sasakian Geometry, a Survey*. In: Rovenski, V., Walczak, P., Wolak, R. (eds) **Differential Geometric Structures and Applications. IWDG 2023**. Springer Proceedings in Mathematics & Statistics, vol 440. Springer, Cham., pp.1-28
62. *Homotopic properties of Kaehler orbifolds*, in: S. G. Chiossi et. al (eds.) **Special Metrics and Group Actions in Geometry**, Springer INdAM Series 23, 2017, pp. 23-57 (with G. Bazzoni, I. Biswas, M. Fernández, V. Muñoz)
63. *On curvature constructions of symplectic forms*, **Banach Center Publications** 93(2011), 261-269 (with A. Szczepkowska and A. Woike)
64. *A note on symplectic circle actions and Massey products*, in: Advances in Topological Quantum Field Theory (J. Bryden, Ed.) **NATO Sci. Ser. II**, **179**, Kluwer, Dordrecht, 2004, 289-295 (with Z. Stępień)
65. *Symplectically harmonic cohomology of nilmanifolds*, in: Symplectic and Contact Topology, Interactions and Perspectives (Y. Eliashberg and B. Khesin, Eds.) **Fields Institute Communications** **35** (2003), 117-130 (with R. Ibáñez, Y. Rudyak, L. Ugarte).
66. *On solvable Lie groups without lattices*, in: Mathematical Legacy of Alfred Gray (M. Fernandez and J. Wolf, Eds.) **Contemporary Mathematics** **288** (2001), 431-447.
67. *Homotopy properties of closed symplectic manifolds*, in: Geometry and Topology of Manifolds (Krynica, 1999), **Universitatis Iagelloniae Acta Mathematica** **38**(2000), 105-124.
68. *Rational homotopy obstructions and symplectic mechanics in the presence of a Yang-Mills field*, in: Symmetry and structural properties of condensed matter **World Sci. Publ.**, River Edge, NJ, 1995, 251-268 (with W. Andrzejewski and A. Neugebauer)

Editorial works

69. *Algebra, Geometry and Mathematical Physics*, **Banach Center Publications** 93(2011),
(Editor, with V. Abramov, J. Fuchs, E. Paal, A. Stolin and P. Urbański)
70. *Conference on Symplectic Topology*, Stare Jabłonki, Poland, 2004
Special issue of **Journal of Symplectic Geometry** 3(4) (2005)
(Guest Editor, with B. Hajduk, J. Kędra, L. Polterovich)
71. *Homotopy and Geometry*, **Banach Center Publications** 45(1997)
(Editor, with J. Oprea)