

## 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. *Stretched non-positive Weyl connections on solvable Lie groups*, **Annali di Matematica Pura ed Applicata**, DOI 10.1007/s10231-01409-9 (with M. Bocheński and P. Jastrzębski)
3. *Negative Sasakian structures on simply-connected 5-manifolds*, **Mathematical Research Letters**, 29(2022), 1827-1857 (with V. Muñoz and M. Schütt)
4. *On the classification of Smale-Barden manifolds with Sasakian structures*, **Communications in Contemporary Mathematics**, 24(2022), no. 9, art. no. 2150077 (with V. Muñoz)
5. *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)
6. *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
7. *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)
8. *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)
9. *On locally homogeneous pseudo-Riemannian compact Einstein manifolds*, **Journal of Geometry and Physics**, 155(2020), art. no. 103778 (with M. Bocheński)

10. *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)
11. *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)
12. *On formality of homogeneous Sasakian manifolds*, **Complex Manifolds**, 6(2019), 160-169 (with I. Morocka-Tralle)
13. *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)
14. *On fibers of fat associated bundles*, **Colloquium Mathematicum**, 150(2017), 149-159 (with M. Bocheński, A. Szczepkowska, A. Woike)
15. *On locally homogeneous compact pseudo-Riemannian manifolds*, **Colloquium Mathematicum**, 150(2017), 135-139 (with M. Bocheński, P. Jastrzębski)
16. *On solvable compact Clifford-Klein forms*, **Proceedings of the American Mathematical Society**, 145(2017), 1819-1832 (with M. Bocheński), Erratum: 148(2020), 2743-2744
17. *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)
18. *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)
19. *On formality of Sasakian manifolds*, **Journal of Topology**, 9 (2016), 161-180 (with I. Biswas, M. Fernández and V. Muñoz)
20. *Clifford-Klein forms and  $a$ -hyperbolic rank*, **International Mathematics Research Notices**, no 15 (2015), 6267-6285 (with M. Bocheński)
21. *Simply connected  $K$ -contact and Sasakian manifolds in dimension 7*, **Mathematische Zeitschrift**, 281(2015), 457-470 (with V. Muñoz)

22. *On symplectically fat twistor bundles*, **Annals of Global Analysis and Geometry**, 48(2015), 181-194 (with M. Bocheński, A. Szczepkowska and A. Woike)
23. *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)
24. *On simply connected  $K$ -contact non Sasakian manifolds*, **Journal of Fixed Point Theory and Applications**, 16(2014), 229-241 (with B. Hajduk)
25. *Generalized symplectic symmetric spaces*, **Geometriae Dedicata**, 171 (2014), 329-343 (with M. Bocheński)
26. *Nonsymplectic smooth circle actions on symplectic manifolds*, **Mathematica Slovaca** 62(2012), 539-550 (with B. Hajduk and K. Pawałowski)
27. *On the algebraic independence of hamiltonian characteristic classes*, **Journal of Symplectic Geometry** 9(2011), 1-9 (with S. Gal and J. Kędra)
28. *On non-degenerate coupling forms* **Journal of Geometry and Physics** 61(2011), 462-475 (with J. Kędra and A. Woike)
29. *Symplectically aspherical manifolds*, **Jornal of Fixed Point Theory and Applications** 3(2008), 1-21 (with J. Kędra and Y. Rudyak)
30. *Exotic smooth structures and symplectic forms on closed manifolds*, **Geometriae Dedicata**, 132(2008), 31-42 (with B. Hajduk)
31. *Fundamental groups of symplectically aspherical manifolds II: abelian groups*, **Mathematische Zeitschrift** 256(2007), 825-835 (with J. Kędra and Y. Rudyak)
32. *Diffeomorphisms and almost complex structures on tori*, **Annals of Global Analysis and Geometry** 28(2005), 337-349 (with B. Hajduk).
33. *Fundamental groups of symplectically aspherical manifolds*, **Mathematische Zeitschrift** 248(2004), 805-826 (with R. Ibáñez, J. Kędra, Y. Rudyak).

34. *A note on hamiltonian circle actions and Massey products*, **Bulletin of the Polish Academy of Science (Mathematics)** **52**(2004), 141-149 (with Z. Stępień).
35. *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).
36. *On symplectically harmonic cohomology of six-dimensional nilmanifolds*, **Commentarii Mathematici Helvetici** **76**(2001), 89-109, (with R. Ibáñez, Y. Rudyak, L. Ugarte).
37. *On Thom spaces, Massey products and non formal symplectic manifolds*, **International Mathematics Research Notices** **10**(2000), 495-513 (with Y. Rudyak).
38. *On symplectic manifolds with aspherical symplectic form*, **Topological Methods of Nonlinear Analysis** **14**(1999), 353-362 (with Y. Rudyak).
39. *On solvmanifolds and a conjecture of Benson and Gordon from the Hamiltonian viewpoint*, **Journal of Lie Theory** **8**(1998), 279-292 (with W. Andrzejewski).
40. *Compact Kähler completely solvable solvmanifolds are tori*, **International Mathematics Research Notices** **15**(1997), 727-732 (with J. Kędra).
41. *Koszul-Sullivan models and cohomology of certain solvmanifolds*, **Annals of Global Analysis and Geometry** **15** (1997), 347-360 (with J. Oprea).
42. *Rational models of solvmanifolds with Kähler structures*, **Revista Matemática Universidad Complutense de Madrid** **10**(1997), 157-176
43. *On compact symplectic and Kählerian solvmanifolds wich are not completely solvable*, **Colloquium Mathematicum** **73**(1997), 261-283
44. *Fat bundles and formality*, **Annales Polonici Mathematici** **65**(1997), 105-118 (with W. Andrzejewski)
45. *Generalized symmetric spaces and minimal models*, **Annales Polonici Mathematici** **64**(1996), 17-35 (with A. Dumańska-Małyszko and Z. Stępień)

46. *Applications of rational homotopy to geometry (results, problems, conjectures)*, **Expositiones Mathematicae** **14** (1996), 425-472.
47. *On symplectic fat bundles*, **Bulletin of the Polish Academy of Science (Mathematics)** **43** (1995), 161-167 (with J. Kędra).
48. *Cohomology of some graded differential algebras*, **Fundamenta Mathematica** **145** (1994), 181-204 (with W. Andrzejewski).
49. *Rational homotopy theory and geometric structures on smooth manifolds*, **Reports on Mathematical Physics** **34** (1994), 17-32.
50. *On Hochschild and cyclic homology of certain compact homogeneous spaces*, **Czechoslovak Mathematical Journal** **43** (1993), 615-634.
51. *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.
52. *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
53. *Cyclic homology of some topological spaces*, **Uspekhi Matematicheskikh Nauk** **46** (1991), 195-196 (in Russian)  
English transl.: **Russian Mathematical Surveys** **46**(1991), 231-232
54. *A new existence theorem for the generalized symmetric spaces of solvable type*, **Annals of Global Analysis and Geometry** **8** (1990), 147-158.
55. *A contribution to the theory of generalized symmetric spaces of solvable type*, **Comptes Rendus de l'Academie Bulgare de Sciences** **43**(1990),29-32.
56. *On naturally reductive and  $k$ -symmetric Riemannian symmetric spaces*, **Comptes Rendus de l'Academie Bulgare de Sciences** **42**(1989), 5-7.
57. *On 3-symmetric Riemannian spaces of solvable type*, **Commentationes Mathematicae Universitatis Carolinae** **30**(1989), 803-809

58. *Topological existence of generalized Riemannian symmetric spaces*, **Vestsi Akademii Navuk BSSR Ser. Fiz.-Mat. Navuk**, no.3 (1989), 23-26 (in Russian).
59. *On the group of isometries of a generalized Riemannian symmetric space*, **Matematicheskie Zametki** **41** (2)(1987), 247-258 (in Russian), English transl. in **Mathematical Notes** **41** (1987), 141-147.
60. *On Kowalski's conjecture and 3-symmetric spaces*, **Doklady Akademii Nauk BSSR**, **30**(1986), 489-492 (in Russian).
61. *Tori of periodical spaces with multiplication*, **Doklady Akademii Nauk BSSR**, **29**(1985),108-111 (in Russian).
62. *Global classification of exceptional periodic spaces with multiplication*, **Doklady Akademii Nauk BSSR** **28**(1984), 12-14 (in Russian).
63. *Mirrors of  $\Phi$ -spaces with semisimple basic groups*, **Vestsi Akademii Navuk BSSR Ser. Fiz.-Mat. Navuk**(1984), no. 1, 12-14 (in Russian).

#### Contribution to books/conference proceedings

64. *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
65. *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)
66. *On curvature constructions of symplectic forms*, **Banach Center Publications** 93(2011), 261-269 (with A. Szczepkowska and A. Woike)
67. *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. Stepień)
68. *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)).

69. *On solvable Lie groups without lattices*, in: Mathematical Legacy of Alfred Gray (M. Fernandez and J. Wolf, Eds.) **Contemporary Mathematics** **288** (2001), 431-447.
70. *Homotopy properties of closed symplectic manifolds*, in: Geometry and Topology of Manifolds (Krynica, 1999), **Universitatis Iagellonia Acta Mathematica** **38**(2000), 105-124.
71. *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**

72. *Algebra, Geometry and Mathematical Physics*, **Banach Center Publications** 93(2011),  
(Editor, with V. Abramov, J. Fuchs, E. Paal, A. Stolin and P. Urbański)
73. *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)
74. *Homotopy and Geometry*, **Banach Center Publications** **45**(1997)  
(Editor, with J. Oprea)

#### **Textbook**

75. *Topology*, Minsk, **Wysheyshaya Shkola**, 1990 (in Russian)  
(with A. Fedenko, S. Kononov, A. Prasolov, V. Timokhovich)