January 2021

Martin Schlichenmaier: List of Publications

Books:

1. Schlichenmaier, M., *Krichever–Novikov Type Algebras. Theory and Applications.* Studies in Mathematics 53, de Gruyter, 2014, 360p.

2. Schlichenmaier, M., *An Introduction to Riemann Surfaces, Algebraic Curves and Moduli Spaces, 2nd enlarged edition*, Theroretical and Mathematical Physics, Springer, 2007, 218p.

3. Schlichenmaier, M., *An Introduction to Riemann Surfaces, Algebraic Curves and Moduli Spaces*, Springer Lecture Notes in Physics, Vol. 322, Springer, New York, 1989, 148p.

Refereed Publications in Scientific Journals, Collections and Proceedings

4. Ecker, Jill, and Schlichenmaier, Martin, *The low-dimensional algebraic cohomology of the Witt and Virasoro algebra with values in natural modules*, Banach Center Publications, to appear (2021)

5. Schlichenmaier, M., *Berezin-Toeplitz quantization and naturally defined star products for Kähler manifolds*, Analysis and Mathematical Physics, 8(4), 691-710, (2018).

6. Ecker, Jill, and Schlichenmaier, Martin, *The low-dimensional algebraic cohomology of the Witt and Virasoro algebra*, Journal of Physics, Conference Series, (2018)

7. Schlichenmaier, M., *Krichever–Novikov type algebras and Wess-Zumino-Novikov-Witten models*, Uniformization, Riemann-Hilbert Correspondence, Calabi-Yau Manifolds, and Picard-Fuchs Equations ALM42, pp. 329–370 (2018).

8. Schlichenmaier, M., *N point Virasoro algebras are multi-point Krichever Novikov type algebras*, Communications of Algebra, 45, 776–821 (2017)

9. Schlichenmaier, M., *N point Virasoro algebras considered as Krichever Novikov type algebras*, Bialowieza volume 2015, Trends in Mathematics, 295308 (2016), Springer International Publishing

10. Schlichenmaier, M., *Krichever-Novikov type algebras. An Introduction*, Proceedings of Symposia in Pure Math., Vol. 92, 2016 http://dx.doi.org/10.1090/pspum/092/01581.

11. Schlichenmaier, M., *Lie Superalgebras of Krichever-Novikov Type*, (in) Geometric Methods in Physics, Bialowieza, 2014, eds. Piotr Kielanowski, et. al., Birkhäuser, 213–226, (2015)

12. Schlichenmaier, M., *Multipoint Lax operator algebras. Almost-graded structure and central extensions.* Sbornik Mathematics, 205(5) (2014) 117–160.

13. Schlichenmaier, M., *From the Virasoro algebra to Krichever-Novikov type algebras and beyond.* (in) Vasiliev, A. (ed), Harmonic and Complex Analysis and its Applications, pp. 325-358, Springer 2014

14. Schlichenmaier, M., *Lie superalgebras of Krichever-Novikov type and their central extensions.* Anal. Math. Phys. 3(3), 235-261 (2013).

15. Schlichenmaier, M., *An elementary proof of the formal rigidity of the Witt and Virasoro algebra.* (in) Geometric methods in physics, Bialowieza XXXI (2012), pp. 143 - 153, Springer (2013)

16. Schlichenmaier, M., *Berezin's coherent states, symbols and transform for compact Kähler manifolds.* (in) Geometric methods in physics, Bialowieza XXX (2011), pp. 101 - 116, Springer (2013)

17. Schlichenmaier, M., *Symmetries and infinite dimensional Lie algebra.* (in) C. Bartholmé, T. Connor, Y. Dominicy, L. Kidzinski, N. Richard, Y. Swan (eds), Notes de la cinquieme BSSM, 67 - 97, ULB Bruxelles. (2013)

18. Schlichenmaier, M., *An elementary proof of the vanishing of the second cohomology of the Witt and Virasoro algebra with values in the adjoint module*, Forum Mathematicum. DOI: 10.1515/forum-2012-0143, February 2012, print version: volume 26(3), 913–929 (2014).

19. Schlichenmaier, M., *Some naturally defined star products for Kähler manifolds*, Trav. math. 20(2012), 187–204.

20. Schlichenmaier, M., *Berezin-Toeplitz quantization and star products for compact Kähler manifolds*, Contemp. Math. 583, (2012), 257–294, http://dx.doi.org/10.1090/conm/583/11573

21. Schlichenmaier, M., *Krichever-Novikov type algebras – personal recollections of Julius Wess.* Scientific and human legacy of Julius Wess, Internat. Jour. of Mod. Phys: Conference Series. Vol. 13(2012), 158–173

22. Schlichenmaier, M., *Berezin-Toeplitz quantization for compact Kähler manifolds. An introduction.* Travaux mathematiques, 19(2011), 97-124.

23. Schlichenmaier, M., *Almost-graded central extensions of Lax operator algebras.* Banach Center Publications 93(2011), 129 -144, doi:10.4064/bc93-0-11.

24. Martin Schlichenmaier, *Berezin-Toeplitz Quantization for Compact Kähler Manifolds. A Review of Results*, Advances in Mathematical Physics, Vol. 2010, 38 pages, doi:10.1155/2010/927280.

25. Martin Schlichenmaier, *Deformations of the Witt, Virasoro, and Current Algebra*, (in) Silvestrov, et. al., Generalized Lie theory in Mathematics, Physics and Beyond, pp. 219–234, Springer 2009

26. Martin Schlichenmaier, and Oleg K. Sheinman, *Central extensions of Lax operator algebras*, Uspheki Math. Mauk., 382 (4), 2008, 187-228.

27. Martin Schlichenmaier, *Classification of central extensions of Lax operator algebras* (in) Proceedings of the XXVII Workshop on Geometrical Methods in Physics, Bialowieza, Poland 29 June – 5 July 2008, AIP 2008, 227–234

28. Alice Fialowski, Martin Schlichenmaier, Global Geometric Deformations of the Virasoro algebra, current and affine algebras by Krichever-Novikov type algebras, International Journal of Theoretical Physics. Vol. 46, No. 11 (2007) pp.2708 - 2724

29. Martin Schlichenmaier, *Higher genus affine Lie algebras of Krichever-Novikov type,* (in) Proceedings of the International Conference "Difference Equations, special functions and othogonal polynomials", (eds Elaydi, et. al.), World Scientific, 2007

30. Martin Schlichenmaier, *A global operator approach to Wess-Zumino-Novikov-Witten models* (in) Proceedings of the XXVI Workshop on Geometrical Methods in Physics, Bialowieza, Poland 1-7 July 2007, AIP 2007, 107 - 119

31. Martin Schlichenmaier *Berezin-Toeplitz quantization of the moduli space of flat SU(N) connections*, Journ. of Symmetry in Physics, Vol. 9 (2007) 33-34

32. Martin Schlichenmaier, *Higher genus affine Lie algebras of Krichever-Novikov type,* Journal of Geometry and Symmetry in Physics, **5** (2006), 103–113

33. Alice Fialowski, Martin Schlichenmaier, *Global geometric deformations of current algebras as Krichever-Novikov type algebras*, Comm. Math. Phys. 260 (2005), 579 –612.

34. Martin Schlichenmaier, Oleg K. Sheinman, *Knizhnik-Zamolodchikov equations for positive genus and Krichever-Novikov algebras*, Russian Math. Surv. **59** (4)(2004), 737–770, math.AG/0312040.

35. Martin Schlichenmaier, *Deformation quantization for almost-Kähler manifolds*, J. of Nonlinear Math. Phys., Vol. 11, Supplement (2004), 49-54.

36. Martin Schlichenmaier, *Higher genus affine Lie algebras of Krichever-Novikov type*, Moscow Math. Journal 3(2003), 1395–1427

37. Alice Fialowski, Martin Schlichenmaier, *Global deformations of the Witt algebra of Krichever-Novikov type*, Comm. Contemp. Math. **5** (6) (2003), 921–946.

38. Martin Schlichenmaier, *Local cocycles and central extensions for multi-point algebras of Krichever-Novikov type*, J. reine angew. Math. **559**(2003), 53–94.

39. Alexander Karabegov, Martin Schlichenmaier, *Almost Kähler deformation quantization*, Lett. Math. Phys, **57**(2001), 135–148.

40. Alexander Karabegov, and Martin Schlichenmaier, *Identification of Berezin-Toeplitz deformation quantization*, J. reine angew. Math. **540**(2001), 49–76.

41. Martin Schlichenmaier, *Singular projective varieties and quantization*, in: Quantization of singular symplectic quotients, (ed. K. Landsman, M. Pflaum, M. Schlichenmaier), Progress in Mathematics 198, Birkhäuser 2001, pp. 259–282.

42. Stefan Berceanu, and Martin Schlichenmaier, *Coherent state embeddings, polar divisors and Cauchy formulas*, Journal of Geometry and Physics, **34**(2000), 336–358.

43. Martin Schlichenmaier, *Berezin-Toeplitz quantization and Berezin transform*, Proc. of the Bologna APTEX International Conference", September 13-17, 1999, (eds. S. Graffi, A. Martinez), World Scientific, 2001, pp. 271–287.

44. Martin Schlichenmaier, *Elements of a Global Operator Approach to Wess-Zumino-Novikov-Witten Models*, in "Lie theory and its applications in physics III" (July 1999, Clausthal), (eds. H.D. Doebner, V.K.Dobrev, and J. Hilgert), World Scientific, 2000, pp. 204–220.

45. Martin Schlichenmaier, *Deformation quantization of compact Kähler manifolds by Berezin-Toeplitz quantization*, Conference Moshé Flato 1999 (September 1999, Dijon, France) (eds. G. Dito, and D. Sternheimer), Kluwer, 2000, Vol. 2, pp. 289–306.

46. Martin Schlichenmaier, *Berezin-Toeplitz quantization and Berezin symbols for arbitrary compact Kähler manifolds*, in "Coherent States, Quantization and Gravity, Proc. of the XVII Workshop on Geometric Methods in Physics", Białowieza, Poland, July 3 - July 9, 1998, (eds. M. Schlichenmaier, A. Strasburger, S.T. Ali, A. Odzijewicz), Warsaw University Press, 2001, pp. 45–56.

47. Martin Schlichenmaier, and Oleg K. Sheinman, *Wess-Zumino-Witten-Novikov theory, Knizhnik-Zamolodchikov equations, and Krichever-Novikov algebras, I.*, Uspeki Math. Naukii (Russian Math. Surv.) **54**(1999), 213-250, math.QA/9812083.

48. Martin Schlichenmaier, *Sugawara operators for higher genus Riemann surfaces*, Rep. on Math. Phys. **43**(1999), 323-339, math.QA/9806032.

49. Martin Schlichenmaier, *Deformation quantization of compact Kähler manifolds via Berezin-Toeplitz operators* in: Proceedings of the XXI Int. Coll. on Group Theoretical Methods in Physics, July 15-20, 1996, Goslar, Germany, (eds. H.-D. Doebner, P. Nattermann, W. Scherer), World Scientific, Singapore, London, 1997, pp.396-400.

50. Martin Schlichenmaier, and Oleg K. Sheinman, *Sugawara construction and Casimir operators for Krichever-Novikov algebras*, Jour. of Math. Science **92**(1998), 3807-3834, translated from Itoki Nauki i Tekhniki, Vol. 38, 1996, q-alg/9512016.

51. Martin Schlichenmaier, *Berezin-Toeplitz quantization of compact Kähler manifolds*, in: Quantization, Coherent States and Poisson Structures, Proc. XIV'th Workshop on Geometric Methods in Physics, Białowieza, Poland, 9-15 July 1995, (eds. A. Strasburger, S.T. Ali, J.-P. Antoine, J.-P. Gazeau , A. Odzijewicz), Polish Scientific Publisher PWN 1998, pp.101-115, q-alg/9601016.

52. Martin Bordemann, Eckhard Meinrenken, and Martin Schlichenmaier, *Toeplitz quantization of Kähler manifolds and $gl(N)$, $N \to \infty$ limits*, Communications in Mathematical Physics **165**(1994), 281-296.

53. Martin Schlichenmaier, *Differential operator algebras on compact Riemann surfaces*, in: Generalized Symmetries in Physics, Clausthal 1993 (eds. H.-D. Doebner, V.K. Dobrev, A.G. Ushveridze), World Scientific, Singapore, London, 1994, pp.425-434

54. Martin Schlichenmaier, *Degenerations of generalized Krichever-Novikov algebras on tori*, Journal of Mathematical Physics **34**(1993), 3809-3824.

55. Andreas Ruffing, Thomas Deck, and Martin Schlichenmaier, *String branchings on complex tori and algebraic representations of generalized Krichever-Novikov algebras*, Letters in Mathematical Physics **26**(1992), 23-32.

56. Martin Bordemann, Jens Hoppe, Peter Schaller, and Martin Schlichenmaier, *$gl(\infty)$ and geometric quantization*, Communications in Mathematical Physics **138**(1991), 209-244.

57. Martin Schlichenmaier, *Central extensions and semi-infinite wedge representations of Krichever-Novikov algebras for more than two points*, Letters in Mathematical Physics **20**(1990), 33-46.

58. Martin Schlichenmaier, *Krichever-Novikov algebras for more than two points: explicit generators*, Letters in Mathematical Physics **19**(1990), 327-336.

59. Martin Schlichenmaier, *Krichever-Novikov algebras for more than two points*, Letters in Mathematical Physics **19**(1990), 151-165.

Contributions to encyclopedic works:

60. Martin Schlichenmaier, *Algebra*, in: Faszination Mathematik (ed. G. Walz), Spektrum Verlag Heidelberg, 2003, pp. 58-69.

61. Martin Schlichenmaier, contributing author to "Concise Encyclopedia on supersymmetry and noncommutative structures in mathematics and physics", (eds. J. Bagger, St. Duplij, and W. Siegel), Kluwer 2003.

62. Martin Schlichenmaier, contributing author to the "Lexikon der Mathematik" concerning entries from the field of algebra, algebraic topology, homological algebra, and the theory of categories, 6 Volumes, Spektrum-Verlag, Heidelberg, Vol.1 (2000), Vol.2 (2001), Vol.3 (2001), Vol.4 (2002), Vol.5 (2002), Vol.6 (2003).

63. Martin Schlichenmaier, *$W_{1+\infty}$-algebra*, in: Encyclopedia of Mathematics, Suppl. II (ed. M. Hazewinkel), Kluwer Academic Publishers, 2000, pp.486-487.

Editorial Work

64. Grong, E., Gumenyuk, P., Molina, G., Schlichenmaier, M., Takhtajan, L., *ICAMI 2017: International Conference on Applied Mathematics and Informatics: Forum on Analysis, Geometry, and Mathematical Physics*, Analysis and Mathematical Physics, Vol. 8 (2018).

65. Schlichenmaier, M. (ed), Scientific contributions of the Centre for Quantum Geometry of Moduli Spaces, QGM Aarhus Denmark, Travaux mathematiques, Vol. 25 (2017), UL

66. Schlichenmaier, M. (ed), Geoquant 2015, Travaux mathematiques, Vol. 24 (2016), UL

67. Kielanowski, P., Bieliavsky, P., Odzijewicz, A., Schlichenmaier, M., Voronov, Th., *XXXIV Workshop on Geometric Methods in Physics*, Bialowieza, Poland, 2015, Birkhäuser, 2016

68. Kielanowski, P., Bieliavsky, P., Odzijewicz, A., Schlichenmaier, M., Voronov, Th., *XXXIII Workshop on Geometric Methods in Physics*, Bialowieza, Poland, 2014, Birkhäuser, 2015

69. Kielanowski, P., Bieliavsky, P., Odesskij, A., Odzijewics, A., Schlichenmaier, M., Voronov, Th. (eds) *Geometric Methods in Physics, XXXII workshop Bialowieza, Poland 2013.* Trends in Mathematics, Springer, 2014, 290p

70. Kielanowski, P., Ali, S.T., Odesskij, A., Odzijewics, A., Schlichenmaier, M., Voronov, Th. (eds) *Geometric Methods in Physics, XXXI workshop Bialowieza, Poland 2012.* Trends in Mathematics, Springer, 2013, 238p

71. Kielanowski, P., Ali, S.T., Odzijewics, A., Schlichenmaier, M., Voronov, Th. (eds), *Geometric Methods in Physics XXX workshop Bialowieza, Poland 2011* . Trends in Mathematics, Springer, 2013, 432p.

72. Bordemann, M., Ebrahimi-Fard, K., Maklouf, A., Schlichenmaier, M., Waldmann, St., (eds) *Special Issue based on the Commemorative Colloquium dedicated to Nikolai Neumaier, Mulhouse*, travaux mathematiques 20 (2012), University of Luxembourg, ISBN 978-2-87971-101-0, 323 p.

73. Schlichenmaier, M., Sergeev, A., Sheinman O., *Special Issue Geometry and Quantization. Lectures of the School Geoquant 2009 at the University of Luxembourg*, travaux mathematiques 19 (2011), University of Luxembourg, ISBN 978-979761-079-2, 286 p.

74. P. Kielanowski, S. T. Ali, A. Odzijewicz, M. Schlichenmaier, Th. Voronov, (eds.) *Proceedings of the XXIX Workshop on Geometrical Methods in Physics,* Bialowieza, Poland July 2010, AIP 1307, AIP 2010

75. P. Kielanowski, A. Odzijewicz, M. Schlichenmaier, Th. Voronov, (eds.) *Proceedings of the XXIX Workshop on Geometrical Methods in Physics,* Bialowieza, Poland July 2009, AIP 2009

76. P. Kielanowski, A. Odzijewicz, M. Schlichenmaier, Th. Voronov, *Proceedings of the XXVII Workshop on Geometrical Methods in Physics,* Bialowieza, Poland July 2008, AIP 2008

77. P. Kielanowski, A. Odzijewicz, M. Schlichenmaier, Th. Voronov, *Proceedings of the XXVI Workshop on Geometrical Methods in Physics,* Bialowieza, Poland 1-7 July 2007, AIP 2007

78. P. Kielanowski, A. Odzijewicz, M. Schlichenmaier, Th. Voronov, *Proceedings of the XXV Workshop on Geometrical Methods in Physics*, Jour. of Geometry and Symmetry in Physics, Vol. **9** (2007)

79. S. Twareque Ali, J.P. Gazeau, G.A. Goldin, K.-H. Neeb, A. Odzijewicz, M.Schlichenmaier, *Proceedings of the XXIV-th Workshop On Geometric Methods in Physics, Białowieza, Poland, June 26 – Juli 2, 2005*, Jour. of Geometry and Symmetry in Physics, Vol. **5** and Vol. **6** (2006).

80. Carine Molitor-Braun, Norbert Poncin, Martin Schlichenmaier (eds), *Proceedings of the 4th Conference on Poisson Geometry 2004*, Travaux mathématiques, Vol. XVI (2005), 350 pp.

81. S.Twareque Ali, Gerald Emch, Anatol Odzijewicz, Martin Schlichenmaier, Stanislaw L. Woronowicz, *Twenty Years of Bialowieza: A Mathematical Anthology (Aspects of differential geometric methods in physics)*. World Scientific Monograph Series in Mathematics, Vol. 8, World Scientific, 2005.

82. S. Twareque Ali, Piotr Kielanowski, Anatol Odzijewicz, Martin Schlichenmaier, *Recent Developments in Quantization. Proceedings of the XXI-th Workshop On Geometric Methods in Physics, Białowieza, Poland, June 30 – Juli 6, 2002*, J. of Nonlinear Math. Phys., Vol 11, Supplement (2004).

83. Klaas Landsman, Markus Pflaum, Martin Schlichenmaier, *Quantization of singular symplectic quotients*, Progress in Mathematics 198, Birkhäuser, 2001.

84. Martin Schlichenmaier, S.Twareque Ali, Alexander Strasburger, Anatol Odzijewicz, *Coherent States, Quantization and Gravity, Proceedings of the XVII-th Workshop On Geometric Methods in Physics, Białowieza, Poland, July 3 -July 9, 1998*, Warsaw University Press, 2001.

85. Martin Schlichenmaier, Alexander Strasburger, S.Twareque Ali, Anatol Odzijewicz, *Coherent States, Differential and Quantum Geometry, Proceedings of the XVI-th Workshop On Geometric Methods in Physics, Białowieza, Poland, June 30 -July 6, 1997*, Reports on Mathematical Physics, Vol. 43 1/2 (1999)

Others:

86. Martin Schlichenmaier, *Zwei Anwendungen algebraisch-geometrischer Methoden in der theoretischen Physik: Berezin-Toeplitz-Quantisierung und globale Algebren der zweidimensionalen konformen Feldtheorie"*, Habilitation Thesis, University of Mannheim, June 1996.

87. Martin Schlichenmaier, *Verallgemeinerte Krichever - Novikov Algebren und deren Darstellungen*, Dissertation, University of Mannheim, June 1990.

88. Fialowski, A., Fröhlich, J., Schlichenmaier, M., *Deformation methods in mathematics and physics.* Abstracts from the workshop held September 25th-October 1st, 2010, Oberwolfach Rep. 7(3), 2503–2560

89. Fialowski, A., Montigny, M., Novikov, S., Schlichenmaier, M., *Deformations and constractions in mathematics and physics.* Oberwolfach Rep. 3(1), 119–186

Articles for the general public

90. Mortini, R., Schlichenmaier, M., *Abel Preis für Mathematiker Mischa Gromov*, Luxemburger Wort 19.6.2009, p.16

91. Mortini, R., Schlichenmaier, M., *Bahnbrechende Leistungen. "Nobelpreis in Mathematik": Abelpreis an Thompson und Tits, Luxemburger Wort 2008, p.24*