.

Curriculum Vitae

Victor Kac

Born: December 19, 1943, Buguruslan, Russia
Citizenship: U.S.A.
Education: B.S. Moscow State University, 1965
PhD Moscow State University, 1968
Thesis: Simple Irreducible Graded Lie Algebras of Finite Growth

Positions Held:

Assistant, 1968–1971
Moscow Institute of Electronic Machine Building

Senior Teacher, 1971–1976
Moscow Institute of Electronic Machine Building

Visiting Associate Professor, 1977
M.I.T., Cambridge, MA 02139, U.S.A.

Associate Professor, 1978–1980
M.I.T., Cambridge, MA 02139, U.S.A.

Professor, 1981–present
M.I.T., Cambridge, MA 02139, U.S.A.

Honors and Awards:

1981–1983	Sloan Fellowship
1981	Medal from the College de France
1986–87	Guggenheim Fellowship
1994	Wigner Medal
1998	Honorary member of Moscow Math. Society
1998	Chaire Condorcet at Ecole Normale Superieure, Paris
1999	Sackler fellow, IHES
2002	Simons research visiting professor, MSRI
2003	Sarojini Damadaran fellow, TIFR
2007	Member of the American Academy of Arts and Sciences
2008	Conference on 65th birthday, Cortona, Italy
2012	IHP fellowship
2012-13	Simons Fellowship
2013	Member of the National Academy of Sciences, USA
2013	Conference on 70th birthday, Rio de Janeiro
2013	Victor Kac afternoon, IHES
2015	Steele prize for life achievement
2019-20	Simons Fellowship
2019	Sackler American fellow, IHES
2019	Foreign member of the Accademia dei Lincei
2023	Conference on 80th birthday, Rome
2024	Highly ranked scholar by ScholarGPS

Conferences organized:

Oberwolfach, Germany, 1980 and 1985
Marseille, Lumini, France, 1988
Pisa, Italy, Spring program, Infinite dimensional algebra and algebraic geometry, 1991
M.I.T., Lie theory and geometry, 1993
ESI, Vienna, Programm on representation theory, 2000
Toronto, Fields Institute, 2000
MSRI, Programm Infinite-dimensional algebras and Mathematical Physics, 2002
BIRS, working in teams programm, August 2003
ESI, Vienna, Summer school on vertex algebras, June 2005
BIRS, Focused research group, May 2006
IUM, Moscow, Transformation groups, December 2007
MSU, Moscow, Algebraic methods in integrable systems, December 2012
Centro Di Georgi, Pisa, Intensive period in Lie theory, December 2014- January 2015
ESI, Vienna, Programm on geometric representation theory, January 2017

Editorial boards and scientific committees:

Advanced series in Mathematical Physics, World Scientific, Singapore
Reviews in Mathematical Physics, World Scientific, Singapore
Transformation groups, Birkhäuser, Boston
Journal of Algebra and Applications, World Scientific
Advisory committee of INDAM, Rome
Advisory board of Istanbul Center for Mathematical Sciences

Selected invited addresses and lecture series:

Harvard colloqium, 1977
ICM, Helsinki, 1978
Invariant theory, Bonn, 1979
AMS annual meeting, San Antonio, Texas, 1980
Australian National University colloqium, Canberra, 1980
College de France, lecture series, 1981
Montacatini Terme, lecture series, Italy, 1982
Universite Paris 6, lecture series, 1983
Mathematical Soc of Denmark, Copenhagen, 1983
RIMS colloquium, Kyoto, 1984
The mathematical heritage of E. Cartan, Lyon, 1984
Anomalies, geometry, toplogy, Argonne, 1985
Academia Sinica, Beijing, lecture series, 1985
TIFR, Bombay, lecture series, 1985-86
Algebraic groups, Utrecht, 1987
Strings 88, Maryland, 1988
Centennial of the AMS, Providence, 1988
Colloque Dixmier, Paris, 1989
Group theoretical methods in physics, Moscow, 1990
LOMI colloquium, Leningrad, 1990
Charles University colloquium, Prague, 1990

SNS, Pisa, lecture series, 1991
Colloque Bruhat-Tits, Paris, 1991
Lezioni Leonardesche, Milan, 1991
Theoretical physics conference, Tbilisi, lecture series, 1991
Canadian Math Soc, 1991
Ecole Normale, Paris , lecture series, 1992-93
University of Amsterdam colloquium, 1993
Amici della SNS di Pisa, lecture series, 1994
Cordoba and Mendoza, lecture series, 1994
Ecole Normale, Lyon, lecture series, 1995
Quantum field theory, Dubna, Russia, 1996
Group theoretical methods in physics, Goslar, Germany, 1996
Kyoto University, lecture series, 1996
Lumini, CIRM lecture series, 1997
Frontiers in mathematics lecture series, Texas A+M University, 1997
International Congress in Math. Physics, Brisbane, Australia, 1997
Rome University graduate course, 1997
Soliton theory and geometry, Moscow, 1998
Schroedinger institute, lecture series, Vienna, 1998
Ecole Normale, Paris, lecture course, 1998
Rome University colloquium, 1998
Swedish Math. Soc, Stockholm, 1999
Visions in mathematics, Tel-Aviv, 1999
Yale University colloquium, 2000
Weisfeiler lecture, 2000
Colloquio latinoamericano, La Falda, Argentina, 2001
ICM Beijing, Plenary address, 2002
Graduate course in Beijing University, 2002
TIFR, Mumbay, lecture series, 2003
Giornata INDAM, Rome University 1, 2004
Group theoretical methods in physics, Cocoyoc, Mexico, 2004
Algebra day, Carleton University, 2004
Distinguished lecturer series, Weizmann Institute, 2005
Summer school in Bad Honnef, 2005
British Math. Colloquium, Newcastle, 2006
Escola de Altos Estudos course of lectures, Sao Paulo, Brasil, 2007
Lie days lecture series, Cornell University, 2007
Rome University 2 colloquium, 2008
Graduate course in Rome University 1, 2008-09
Knowledge transfer lecture, Edinburgh, 2009
Centennial of J. Racah, Jerusalem, 2010
Lecture course in Buenos Aires University, 2010
Seminal interactions between mathematics and physics, Rome, 2010
Lecture course in Tsinghua University, Beijing, summer 2011
IMPA 60 lecture, October 2012
Hadamard lectures, IHES, November 2012
Solstice conference, Paris, June 2013
Mathematics and quantum physics conference, Rome, July 2013

Lecture course in Centro di Giorgi, Pisa, December 2014-January 2015
Lecture course in Max Planck Institute, Bonn, March 2015
Levi-Civita colloquium, Rome Tor Vergata, January 2016
Mathematics and Physics at crossroads, Frascatti, July 2016
Symmetries and differential equations, Istanbul, August 2017
Vertex algebras, Rome, December 2017
Group theoretical methods in physics, Prague, July 2018
Kac-Moody geometry, Besse, France, May 2019
Vertex algebras, Dubrovnik, June 2019
Integrable systems, Bologna, January, 2020
Winter school, Daibretes Switserland, February 2020
Lie superalgebras, Israel, March 2021
Representation theory, Israel, December 2022
Where mathematics meets quantum physics, Rome, June 2023
Vertex algebras, Dubrovnik, June 2023
Ukrainian conference in algebra, Sumy, July 2023
W-algebras, Edinburgh, August 2023
Representations of Lie supergtoups, Bonn, July 2024

Books:

1. *Infinite dimensional Lie algebras*, Birkhäuser, Boston, 1983 (second edition, Cambridge University Press, 1985) (third edition, Cambridge University Press, 1990). Russian translation, MIR, Moscow, 1993. Chinese translation, 2006.
2. *Infinite dimensional groups with applications*, ed., Publ. MSRI 4, 1985.
3. (with A. Raina)*Bombay lectures on highest weight representations*, World Scientific, 1987.
4. (with A. Raina and N. Rozhkovskaya)*Bombay lectures on highest weight representations*, Second edition, World Scientific, 2013.
5. *Infinite-dimensional Lie algebras and groups*, ed., *Adv. Ser. in Math. Phys.*, vol. 7, 1989.
6. (with V. Guillemin, J.-L. Brylinsky and R. Brylinsky) *Lie theory and geometry*, ed., Birkhäuser, Boston, 1994.
7. *Vertex algebras for beginners*, University lecture series, AMS, vol. 10, 1996 (second edition, AMS, 1998). Russian translation, Moscow 2005.
8. (with C. Martinez and E. Zelmanov) Graded simple Jordan superalgebras of growth one, Memoirs of AMS 711, 2001, pp 1-140.
9. (with P. Cheung)*Quantum calculus*, Springer-Verlag, 2002. Russian translation, Moscow 2005. Persian translation, 2015.
10. (with R. Kellerhals, F. Knop, P. Littelman, D. Panyushev) *Vinberg volume*, ed., J. Algebra **313**, Springer-Verlag, 2007.
11. (with R. Panyushev, E. Vinberg) *Morozov volume*, ed., Transf. Groups **15**, Springer-Verlag, 2010.
12. (with S. Gindikin, E. Vinberg) *Dynkin volume*, ed., Transf. Groups **19**, Springer-Verlag, 2014.
13. (with V. Popov) *Lie groups, geometry and representation theory. Kostant memorial volume*, ed., Progress in Math **326**, Springer-Verlag, 2018.

Publications

1. On a characteristic property of locally Euclidean spaces, *Uspehi Mat. Nauk.* **191** (1964), No. 4, 225–227.
2. (with E. Vinberg) Quasi-homogeneous cones, *Math. Zametiki* **1** (1967), 347–354 (English translation: *Math. Notes* **1** (1967)).
3. Simple graded Lie algebras of finite growth, *Funkt. Analys y eĝo prilozh.* **1** (1967), No. 4, 82–83 (English translation: *Funct. Anal. Appl.* **1** (1967), 328–329).
4. Graded Lie algebras and symmetric spaces, *Funkt. Analys y eĝo prilozh.* **2** (1968), No. 2, 93–94 (English translation: *Funct. Anal. Appl.* **2** (1968), 183–184).
5. Simple irreducible graded Lie algebras of finite growth, *Iz vestija AN USSR (ser. Math.)* **32** (1968), 1923–1967 (English translation: *Math. of USSR-Izvestija* **2** (1968), 1271–1311).
6. Some properties of the contragredient Lie algebras, *Trudy MIEM*, No. 5, 1969, 48–60.
7. An algebraic definition of compact Lie groups, *Trudy MIEM*, No. 5, 1969, 36–47.
8. Automoprhisms of finite order of semi-simple Lie algebras, *Funkt. analys y eĝo prilozh.* **3** (1969), No. 3, 94–96 (English translation: *Funct. Anal. Appl.* **3** (1969), 252–254).
9. On classifications of simple Lie algebras over fields of non-zero characteristics, *Izvestija AN USSR (ser. Math.)* **34** (1970), 381–404 (English translation: *Math of USSR-Izvestija* **4** (1970), 391–413).
10. (with B. Weisfeiler) Exponentials in Lie algebras of characteristic p, *Izvestija AN USSR (ser. Math.)* **35** (1971), 762–788 (English translation: *USSR-Izvestija* **5** (1971), 777–803).
11. (with B. Weisfeiler) On irreducible representations of Lie p-algebras, *Funkt. analys y eĝo prilozh.* **5** (1971), No. 2, 28–36 (English translation: *Funct. Anal. Appl.* **5** (1971), 111–117).
12. Global Cartan pseudogroups and simple Lie algebras of characteristic p, *Uspehi Math. Nauk.* **26** (1971), No. 3, 199–200.
13. On algebras related to quantum field theory, *All-Union Algebraic Colloquium*, Kishinev, 1971, 140–141.
14. On irreducible representations of Lie algebras of classical type, *Uspehi Math. Nauk.* **27** (1972), No. 5, 237–238.
15. Filtered Lie algebras of Cartan type, *Uspehi Math. Nauk.* **29** (1974), No. 3, 203–204.
16. Infinite-dimensional Lie algebras and the Dedekind η-function, *Funkt. analys y eĝo prilozh.* **8** (1974), No. 1, 77–78 (English translation: *Funct. Anal. Appl.* **8** (1974), 68–70).
17. A description of filtered Lie algebras whose associated graded Lie algebras are of Cartan type, *Izvestija AN USSR (ser. Math.)* **38** (1974), 800–834 (English translation: *Math. of USSR-Izvestija* **8** (1974), 801–835; letter to the editor, 40 (1976), No. 6).
18. On the question of description of the orbit space of linear algebraic groups, *Uspehi Math. Nauk.* **30** (1975), No. 6, 173–174.
19. Classification of simple Lie superalgebras, *Funct. Anal. y ego Prilozh.* **9** (1975), No. 3, 91–92; letter to the editor, **10** (1976), No. 2, **93** (English translation: *Funct. Anal. Appl.* **9** (1975), 263–265).

20. (with B. Weisfeiler) Coadjoint action of a semi-simple algebraic group and the center of the enveloping algebra in characteristic p, *Proc. Kon. Nederl. Akad., Series A* **38** (1976), 136–151.
21. (with V. Popov and E. Vinberg) Sur les groupes linear algebrique avec algebres d'invariants libre, *C.R. Acad. Sci. Paris*, **283** (1976), 875–878.
22. A sketch of Lie superalgebra theory, *Comm. Math. Physics* **53** (1977), 31–64.
23. Characters of typical representations of classical Lie superalgebras, *Comm. in Algebra* **5**, No. 8 (1977), 889–897.
24. Classification of simple Z-graded Lie superalgebras and simple Jordan superalgebras, *Comm. in Algebra* **5**, No. 13 (1977), 1375–1400.
25. Lie superalgebras, *Advances in Math.* **26**, No. 1 (1977), 8–96.
26. Classification of simple algebraic supergroups, *Uspehi Math. Nauk.* **32**, No. 3 (1977), 214–215.
27. Infinite-dimensional algebras, Dedkind's η-function, classical Möbius function and the very strange formula, *Advances in Math.* **30** (1978), 85–136.
28. (with E. Vinberg) Spinors of 13-dimensional space, *Advances in Math.* **30** (1978), 137–155.
29. Representations of classical Lie superalgebras, *Lecture Notes in Math.* **676** (1978), 597–626.
30. Contravariant form for infinite dimensional Lie algebras and superalgebras, *Lecture Notes in Physics* **94** (1979), 441–445).
31. (with D. Kazhdan) Structure of representations with highest weight of infinite dimensional Lie algebras, *Advances in Math.* **34** (1979), 97–108.
32. Highest weight representations of infinite dimensional Lie algebras, *Proceedings of ICM, Helsinki* **1978** (1980), 299–304.
33. Infinite root systems, representations of graphs and invariant theory, *Inventiones Math.* **56** (1980), 57–92.
34. An elucidation of "Infinite dimensional algebras... and the very strange formula" $E_8^{(1)}$ and the cube root of the modular invariant j, *Advances in Math.* **35** (1980), 264–273.
35. On simplicity of certain infinite-dimensional Lie algebras, *Bul. Amer. Math. Soc.* **2** (1980) 311–314.
36. Some remarks on nilpotent orbits, *Journal of Algebra* **64** (1980) 190–213.
37. (with D. Peterson) Affine Lie algebras and Hecke modular forms, *Bull. Amer. Math. Soc.* **3** (1980) 1057–1061.
38. A remark on the Conway-Norton conjecture about the "Monster" simple group, *Proc. Nat'l. Acad. Sci. USA*, **77** (1980) 5048–5049.
39. (with I. Frenkel) Basic representations of affine Lie algebras and dual resonance models, *Invent. Math.* **62** (1980) 23–66.
40. Some remarks on representations of quivers and infinite root systems, *Lecture Notes in Math.* **832** (1980), 311–327.
41. (with D. Kazhdan, J. Lepowsky and R. Wilson) Realization of the basic representation of the Euclidean Lie algebras, *Advances in Math.* **42** (1981), 83–112.

42. Simple Lie groups and the Legendre symbol, *Lecture Notes in Math.* **848** (1981), 110–124.
43. (with D. Peterson) Spin and wedge representations of infinite dimensional Lie algebras and groups, *Proc. Nat'l. Acad. Sci. USA* **78** (1981), 3308–3312.
44. (with O. Gabber) On defining relations of certain infinite-dimensional Lie algebras, *Bull. Amer. Math. Soc.* **5** (1981), 185–189.
45. (with K. Watanabe) Finite linear groups whose ring of invariants is a complete intersection, *Bull. Amer. Math. Soc.* **6** (1982), 221–223.
46. (with V. Deodhar and O. Gabber) Structure of some categories of representations of infinite dimensional Lie algebras, *Advances in Math.* **45** (1982), 92–116.
47. Infinite root systems, representations of graphs and invariant theory II, *Journal of Algebra* **78** (1982), 141–162.
48. Some problems on infinite dimensional Lie algebras and their representations, *Lecture Notes in Math.* **933** (1982), 117–126.
49. (with D. Peterson) Infinite flag varieties and conjugacy theorems, *Proc. Nat. Acad. Sci. USA* **80** (1983), 1778–1782.
50. Montecatini lectures on invariant theory, *Lecture Notes in Math.* **996** (1983), 74–108.
51. (with D. Peterson) Regular functions on certain infinite-dimensional groups, Arithmetic and Geometry (ed. M. Artin and J. Tate), *Progress in Math.* **36**, Birkhäuser, Boston, 141–166, 1983.
52. Infinite-dimensional Lie algebras, *Progress in Math.* **44**, Birkhäuser, Boston, 1983.
53. (with D. Peterson) Infinite dimensional Lie algebras, theta functions and modular forms, *Advances in Math.* **53** (1984), 125–264.
54. (with D. Peterson) Unitary structure in representation of infinite-dimensional groups and a convexity theorem, *Invent. Math.* **76** (1984), 1–14.
55. Laplace operators of infinite-dimensional Lie algebras and theta functions, *Proc. Nat'l. Acad. Sci. USA* **81** (1984), 645–647.
56. (with J. Dadok) Polar representations, *J. Algebra* **92** (1985), 504–524.
57. Infinite dimensional Lie algebras, second edition, Cambridge University Press, 1985.
58. Torsion in cohomology of compact Lie groups and Chow rings of reductive algebraic groups, *Invent. Math.* **80** (1985), 69–79.
59. (with H. Jakobsen) A new class of unitarizable highest weight representations of infinite-dimensional Lie algebras, *Lecture Notes in Physics* **226** (1985), 1–20.
60. Constructing groups associated to infinite-dimensional Lie algebras, Proceedings of the conference on Infinite-dimensional groups, Berkeley 1984, MSRI publ. #4, 1985, 167–216.
61. (with D. Peterson), Defining relations of certain infinite-dimensional groups, Proceedings of the Cartan conference, Lyon 1984, Asterisque, 1985, Numero hors serie, 165–208.
62. (with D. Peterson) Generalized invariants of groups generated by reflections, in Proceedings of the Conference Giornate di Geometria, Rome 1984. *Progress in Math.* **60**, Birkhäuser, 1985, 231–250.
63. (with D. Peterson) 112 Constructions of the basic representation of the loop group of E_8, Proceedings of the conference "Anomalies, geometry, topology," Argonne, 1985. World Scientific, 1985, 276–298.

64. (with I.T. Todorov) Superconformal current algebras and their unitary representations, *Comm. Math. Physics* **102** (1985), 337–347.
65. (with M. Wakimoto) Unitarizable highest weight representations of the Virasoro, Neveu-Schwarz and Ramond algebras, in Proceedings of the Symposium on conformal groups and structures, Claustal, 1985. *Lecture Notes in Physics* **261** (1986), 345–372.
66. (with D. Peterson), Lectures on the infinite wedge representation and the MKP hierarchy, *Seminaire de Math. Superieures*, Les Presses de L'Université de Montréal **102** (1986), 141–186.
67. Highest weight representations of conformal current algebras, Symposium on Topological and Geometric methods in Field theory, Espoo, Finland, 1986. World Scientific (1986), 3–16.
68. (with D. Peterson) On geometric invariant theory for infinite-dimensional groups, in *Lecture Notes in Math.* **1271**, 102–142, 1987.
69. (with J. Van de Leur) Super boson-fermion correspondence, *Ann. de L'Institute Fourier* **37** (1987), 99–137.
70. (with A. Raina) Bombay lectures on highest weight representations of infinite-dimenonal Lie algebras, World Scientific, 1987.
71. (with M. Wakimoto) Modular and conformal invariance constraints in representation theory of affine algebras, *Advances in Math.* **70** (1988), 156–234.
72. (with E. Arbarello, C. De Concini and C. Procesi) Moduli spaces and curves and representation theory, *Comm. in Math. Phys.* **117** (1988), 1–36.
73. (with M. Niculescu-Sanielevici) Decomposition of representations of exceptional affine algebras with respect to conformal subalgebras, *Phys. Rev. D* **37** (1988), 2231–2237.
74. (with M. Wakimoto) Modular invariant representations of infinite dimensional Lie algebras and superalgebras, *Proc. Nat'l. Acad. Sci. USA* **85** (1988), 4956–4960.
75. (with R. Moody and M. Wakimoto) On E_{10}, Proceedings of the 1987 conference on differential-geometrical methods in physics, Kluwer, 1988, 102–128.
76. (with H. Jakobsen) A new class of unitarizable highest weight representations of infinite-dimensional Lie algebras II, *J. Funct. Anal.* **82** (1989), 69–90.
77. (with M. Wakimoto) Exceptional hierarchies of soliton equations, *Proceedings of Symposia in Pure Math.* **49** (1989), 191–237.
78. (with E. Arbarello and C. De Concini) The infinite wedge representation and the reciprocity law for algebraic curves, *Proceedings of Symposia in Pure Math.* **49** (1989), 171–190.
79. (with C. De Concini and D. Kazhdan) Boson-fermion correspondence over $\mathbb{Z}$, in Infinite-dimensional Lie algebras and groups, *Adv. Ser. Math. Phys.* **7** (1989), 124–137.
80. (with J. van de Leur) Super boson-fermion correspondence of type B, in *Infinite dimensional Lie algebras and groups, Adv. Ser. Math. Phys.* **7**, World Scientific, 369–406, 1989.
81. (with J. van de Leur) On classification of superconformal algebras, in *Strings 88*, World Scientific, 77–106, 1989.
82. (with M. Wakimoto) Classifications of modular invariant representations of affine algebras, in Infinite dimensional Lie algebras and groups, *Adv. Ser. Math. Phys.* **7**, World Scientific, 138–177, 1989.

83. (with C. De Concini) Representation of quantum groups at roots of 1, Colloque Dixmier, 1990, *Progress in Math.* **92**, Birkhäuser, 1990, 471–506.

84. Infinite dimensional Lie algebras, third edition, Cambridge University Press, 1990.

85. (with M. Wakimoto) Branching functions for winding subalgebras and tensor products, *Acta Applicandae Math.* **21** (1990), 3–39.

86. (with A.S. Schwarz) Geometric interpretation of partition function of 2D quantum gravity, *Phys. Lett. B* **257** (1991), 329–334.

87. (with C. De Concini) Representations of quantum groups at roots of 1: reduction to the exceptional case, in *Adv. Series in Math. Phys.* **16A** (1992), 141–150.

88. Modular invariance in mathematics and physics, AMS Centennial Publications II, Mathematics into the 21st century, 1992, 337–350.

89. (S.-P. Wang) On automorphisms of Kac-Moody algebras and groups, *Advances in Math.* **92** (1992), 129–195.

90. (with C. De Concini and C. Procesi) Quantum coadjoint action, *AMS Math. Journal* **5** (1992), 151–190.

91. (with E. Frenkel and M. Wakimoto) Characters and fusion rules for W-algebras via quantized Drinfeld-Sokolov reduction, Comm. in Math. Phys., **147** (1992), 295–328.

92. (with C. De Concini and C. Procesi) Some remarkable degenerations of quantum groups, *Comm. Math. Phys.* **157** (1993), 405–427. hep-th/9308138

93. (with J. van de Leur) The n-component KP hierarchy and representation theory, in *Important developments in soliton theory*, pp. 302–343, eds. A.S. Fokas and V.E. Zakharov, Springer-Verlag, 1993.

94. (with A. Radul) Quasifinite highest weight modules over the Lie algebra of differential operators on the circle, *Comm. Math. Phys.* **157** (1993), 429–457. hep-th/9308153

95. (with M. Wakimoto) A construction of generalized spin models, in *Perspectives in Math. Physics*, Conference Proceedings, Vol. 3, International Press, 1994, 125–150.

96. (with W. Wang) Vertex operator superalgebras and their representations, *Contemporary Mathematics* **175** (1994), 161–191. hep-th/9312065

97. (with M. Wakimoto) Integrable highest weight modules over affine superalgebras and number theory, *Progress in Math.* **123** (1994), 415–456. hep-th/9407057

98. (with C. De Concini and C. Procesi) Some quantum analogues of solvable Lie groups, Proceedings of the International Colloquium on Geometry and Analysis, Bombay 1992, Oxford University Press, 1995, 41–66. hep-th/9308138

99. (with A. Radul) Poisson structure in restricted Lie algebras, The Gelfand Mathematical Seminars,1996-1999, Birkhause, Boston, 1999, 77–84.

100. (with E. Frenkel, A. Radul and W. Wang) $\mathcal{W}_{1+\infty}$ and $\mathcal{W}(gl_N)$ at central charge N, *Comm. Math. Phys.* **170** (1995) 337–358. hep-th/9405121

101. (with S.-J. Kang) Trace formula for graded Lie algebras and monstrous moonshine, Canadian Math.Soc.conference proceedings 16 (1995),141-154.

102. (with J. Beck) Finite-dimensional representations of quantum affine algebas at roots of 1, *AMS Math. Journal* **9** (1996),391-423. hep-th/9410189

103. (with E. Medina) On the SKP hierarchy,*Lett.Math.Phys.* **37** (1996), 435-448.

104. (with A. Radul) Representation theory of the vertex algebra $W_{1+\infty}$, *Transformation groups* **1** (1996), 41-70. hep-th/9512150

105. (with I. Todorov) Affine orbifolds and RCFT extensions of $W_{1+\infty}$, *Comm. Math.Phys.*, **190** (1997), 57-111. hep-th/9612078

106. (with S.-J. Cheng) A new $N = 6$ superconformal algebra, *Comm. Math. Phys.*, **186** (1997), 219-231.

107. Conformal superalgebras and transitive group actions on quadrics, *Comm. Math. Phys.*, **186** (1997), 233-252. Erratum, 217(2001), 697-698.

108. The idea of locality, in *Physical applications and mathematical aspects of geometry, groups and algebras*, H.-D. Doebner et al eds, World Sci., Singapore, 1997, pp 16-32. q-alg/9709008

109. (with S.-J. Cheng) Conformal modules, *Asian J. Math.* **1** (1997), 181-193. Erratum, 2(1998),153-156. q-alg/9706030

110. (with J. van de Leur) The geometry of spinors and the multicomponent BKP and DKP hierarchies, *CRM Proceedings and Lecture Notes***14** (1998), 159-202. solv-int/9706006

111. (with S.-J. Cheng and M. Wakimoto) Extensions of conformal modules, in *Topological field theory, primitive forms and related topics*, Proceedings of Taniguchi and RIMS symposia, Progress in Math. **160**, Birkhäuser , 1998, pp 79-130. q-alg/9709019

112. Formal distribution algebras and conformal algebras, in Proceedings of the 12th International Congress in Math. Physics, 1997, De Witt et al eds, International Press, Boston, 1999, pp 80-97. q-alg/9709027

113. (with A. D'Andrea) Structure theory of finite conformal algebras, *Selecta Math.*, **4** (1998), 377-418.

114. (with M. Golenishcheva-Kutuzova) Γ-conformal algebras, *J. Math Physics* **39** (1998), 2290-2305. q-alg/9709006

115. (with C. Boyallian, J. Liberati and C. Yan) Quasifinite highest weight modules over the Lie algebra of matrix differential operators on the circle, *J. Math Physcis*, **39** (1998), 2910–2928.

116. (with W. Wang and C. Yan) Quasifinite representations of classical Lie subalgebras of $W_{1+\infty}$, *Advances in Math*, **139** (1998), 56-140. QA/9801136

117. Classification of infinite-dimensional simple linearly compact Lie superalgebras, *Adv. in Math.*, **139** (1998), 1-55. ESI preprint no 406 ,1998.

118. (with B. Bakalov and A. Voronov) Cohomology of conformal algebras, *Comm. Math. Phys.***200** (1999), 561-598. math.QA/9803022

119. (with S.-J. Cheng) Generalized Spencer cohomology and filtered deformations of $\mathbb{Z}$-graded Lie superalgebras, *Advances in Theor. and Math. Physics*, **2** (1998), 1139-1180. math.RT/9805039

120. (with S.-J. Cheng) Structure of some $\mathbb{Z}$-graded Lie superalgebras of vector fields, *Transformation groups*, **4** (1999), 219-272. Erratum, 9(2004), 399-400.

121. (with A. Smilga) Vacuum structure in supersymmetric Yang-Mills theories with any gauge group, in: The many faces of the Superworld, Golfand memorial volume, M. Shifman, ed, World sci., 2000, pp 185-234 . hep-th/9902029

122. (with A. Smilga) Normalized vacuum states in N=4 supersymmetric Yang-Mills quantum mechanics with any gauge group, Nuclear Physics **B571** (2000),515-554. hep-th/9908096

123. (with S.-J. Cheng and M. Wakimoto) Extensions of Neveu-Schwarz conformal modules, J. Math. Physics **41** (2000), 2271-2294.

124. Classification of infinite-dimensional simple groups of supersymmetries and quantum field theory, Proceedings of the conference "Visions in Mathematics toward the year 2000", GAFA , Special volume (2000), 162-183. math.QA/9912235

125. (with J. Liberati) Unitary quasifinite representations of W_∞, Letters in Math. Phys.**53** (2000), 11-27. math.QA/9910172

126. (with C. Martinez and E. Zelmanov) Graded simple Jordan superalgebras of growth one, Memoirs of AMS 711, 2001, pp 1-140.

127. (with M. Wakimoto) Integrable highest weight modules over affine superalgebras and Appell's function, Comm. Math. Phys. **215** (2001), 631-682. math-ph/0006007

128. (with B. Bakalov and A. D'Andrea) Theory of finite pseudoalgebras, Advances in Math. **162** (2001), 1-140. math.QA/0007121

129. (with J. Troost) The stability of vacua in two-dimensional gauge theory, Phys. Letters **B501** (2001),313-318. hep-th/0010289

130. A differential analog of a theorem of Chevalley, IMRN **13** (2001), 703-710. math.AG/0101210

131. (with A. Rudakov) Representations of the exceptional Lie superalgebra E(3,6) I: Degeneracy conditions, Transformation groups **7** (2002), 67-86. math-ph/0012049

132. (with A. Rudakov) Representations of the exceptional Lie superalgebra E(3,6) II: Four series of degenerate modules, Comm. Math. Phys. **222** (2001), 611-661. math-ph/0012050

133. (with D. Fattori) Classification of finite simple Lie conformal superagebras, J. Algebra **258** (2002),23-59. math-ph/0106002

134. (with P. Cheung) Quantom calculus, Springer Verlag, 2002

135. (with A. Rudakov) Complexes of modules over exceptional Lie superalgebras E(3,8) and E(5,10), IMRN **19** (2002),1007-1025. math-ph/0112022

136. (with A. De Sole) Subalgebras of gc_N and Jacobi polynomials, Canadian Math. Bull. **45**(4)(2002),567-605. math-ph/0112028

137. (with C. Boyallian and J. Liberati) On the classification of subalgebras of $Cend_N$ and gc_N, J. Algebra **260** (2002), 32-63. math-ph/0203022

138. Classification of supersymmetries, ICM, Beijing 2002. math-ph/0302016

139. (with B. Bakalov) Field algebras, IMRN, 2003, no 3, 123-159. math.QA/0204282

140. (with C.Boyallian and J. Liberati) Finite growth representations of infinite Lie conformal algebras, J. Math. Phys. **44** (2003), 754-770. math.QA/0210161

141. (with S.-S. Roan and M. Wakimoto) Quantum reduction for affine superalgebras. Comm. Math. Phys.**241**(2003),307-342. math-ph/0302015

142. (with J. van de Leur) The n-component KP hierarchy and representation theory. J. Math. Phys. **44** (2003), 3245-3293.

143. (with M. Wakimoto) Quantum reduction and representation theory of superconformal algebras. Advances in Math. **185** (2004), 400-458. math-ph/0304011. Corrigendum: Advances in Math. 193(2005),453-455.

144. (with D. Fattori and A. Retakh) Structure theory of finite Lie conformal superalgebras, in "Lie theory and its applications to physics", eds. H.-D. Doebner and V.K. Dobrev, World Sci. 2004, pp 27-63. math.QA/0402211

145. (with B. Bakalov) Twisted modules over lattice vertex algebras, in "Lie theory and its applications to physics", eds. H.-D. Doebner and V.K. Dobrev, World Sci. 2004, pp 3-26. math.QA/0402315

146. (with S.-J. Cheng) Addendum: Generalized Spencer cohomology and filtered deformations of $\mathbb{Z}$-graded Lie superalgebras. Adv. Theor. Math. Phys. **8** (2004), 697-709.

147. (with A. De Sole) On integral representations of q-gamma and q-beta functions. Rend. Mat. Acc. Lincei **9** (2005), 11-29. math.QA/0302032

148. (with R. Longo and F. Xu) Solitons in affine and permutation orbifolds. Comm. Math. Phys. **253** (2005), 723-764. math.OA/0312512

149. (with A. De Sole) Freely generated vertex algebras and non-linear Lie conformal algebras. Comm. Math. Phys. **254** (2005), 659-694. math-ph/0312042

150. (with A.G. Elashvili) Classification of good gradings of simple Lie algebras, Amer. Math. Soc. Transl. (2) vol 213 (2005), 85-104. math-ph/0312030

151. (with A. Rudakov) Representations of the exceptional Lie superalgebra E(3,6) III: Classification of singular vectors. J. Algebra Appl. **4** (2005), 15-57. math-ph/0310045

152. (with M. Wakimoto) Quantum reduction in the twisted case. Progress in Math. **237**, 2005, pp 85-126. math-ph/0404049

153. (with B. Bakalov and A. D'Andrea) Irreducible modules over finite simple Lie pseudoalgebras I. Primitive pseudoalgebras of type W and S. Advances in Math.**204**(2006),278-346. math.QA/0410213

154. (with P. Cellini, P. Moseneder Frajria and P. Papi) Decomposition rules for conformal pairs associated to symmetric spaces and abelian ideals of $\mathbb{Z}_2$-graded Lie algebras. Advances in Math. **207** (2006), 156-204. math-ph/0506043

155. (with C.Boyallian, J. Liberati and A. Rudakov) Representations of simple finite Lie conformal superalgebras of type W and S. J. Math. Phys. **47**, 043513 (2006), 25pp. arXiv:1003.4416

156. (with A. De Sole) Finite vs affine W-algebras. Japanese Journal of Math. **1**(2006), 137-261. math-ph/0511055

157. (with N. Cantarini) Infinite-dimensional primitive linearly compact Lie superalgebras. Advances in Math.**207**(2006), 328-419. math.QA/0511424

158. (with N. Cantarini) Automorphisms and forms of simple infinite- dimensional linearly compact Lie superalgebras. Internat. J. of Geom. Methods in Phys. **3**, Nos. 5 and 6 (2006),1-23. math.QA/0601292

159. (with B. Bakalov) Generalized vertex algebras, in "Lie theory and its applications to physics VI", eds.V.K. Dobrev et al, Heron Press, Sofia, 2006. math.QA/0602072

160. (with R. Heluani) Supersymmetric vertex algebras. Comm. Math. Phys. **271**(2007), 103-178. math.QA/0603633

161. (with M. Gorelik) On simplicity of vacuum modules. Advances in Math. **211**(2007), 621-677. math-ph/0606002

162. (with N. Cantarini) Classification of simple linearly compact Jordan and generalized Poisson superalgebras. J. Algebra **313**(2007), 100-124. math.QA/0608390

163. (with M. Gorelik) Characters of highest weight modules over affine Lie algebras are meromorphic functions. IMRN 2007, no 20, rnm079-25, 25pp. arXiv: 0704.2876

164. (with P. Moseneder Frajria and P. Papi) Multiplets of representations, twisted Dirac operators and Vogan's conjecture in affine setting. Advances in Math. **217**(2008), 2485-2562. arXiv: 0704.3342

165. (with R. Heluani) SUSY lattice vertex algebras. in "Lie theory and its applications to physics VII", eds.V.K. Dobrev et al, Heron Press, Sofia, 2008, pp 3-24. arXiv:0710.1587

166. (with A. Retakh) Simple Jordan conformal superalgebras. J. Algebra Appl. **7** (2008), 517-533. arXiv:0801.0755

167. (with M. Wakimoto) On rationality of W-algebras. Transformation groups **13** (2008), 671-713. arXiv:0711.2296

168. (with P. Moseneder Frajria and P. Papi) On the kernel of the affine Dirac operator. Moscow Math. J. **8** (2008), 759-788. arXiv:0804.3495. Addendum. Moscow Math. J. **9** (2009).

169. (with M. Lau and A. Pianzola) Differential conformal superalgebras and their forms. Advances in Math. **222**(2009),809-861. arXiv:0805.4243

170. (with A.G. Elashvili and E.B. Vinberg) On exceptional nilpotents in semisimple Lie algebras. J. Lie Theory. **19**(2009), 371-390. arXiv:0812.1571

171. (with A. De Sole) Lie conformal algebra cohomology and the variational complex. Comm. Math. Phys. **292**(2009), 667-719. arXiv:0812.4897

172. (with M. Gorelik) On complete reducibility for infinite-dimensional Lie algebras. Advances in Math. **226**(2011), 1911-1972. arXiv:0905.0893

173. (with A. Barakat and A. De Sole) Poisson vertex algebras in the theory of Hamiltonian equations. Japan. J. Math. **4**(2009), 141-252. arXiv:0907.1275

174. (with N. Cantarini) Classification of linearly compact simple rigid superalgebras. IMRN **2010**, no 17, 3341-3393. arXiv:0909.3100

175. (with N. Cantarini) Classification of simple linearly compact n-Lie superalgebras. Comm. Math. Phys. **298** (2010), 833-853. arXiv:0909.3284

176. (with C. Boyallian and J. Liberati) Irreducible modules over simple Lie conformal superalgebras of type K, J. Math. Phys. **51** (2010)063507, 37 pp. arXiv:1003.4420

177. (with B. Bakalov and A. D'Andrea) Irreducible modules over finite simple Lie pseudoalgebras II. Primitive pseudoalgebras of type K. Advances Math. **232** (2013), 188-237. arXiv:1003.6055

178. (with A. De Sole and M. Wakimoto) On classification of Poisson vertex algebras. Transformation Groups **15** (2010), 883-907. arXiv:1004.5387

179. (with A. De Sole and P.Hekmati) Calculus structure on the Lie conformal algebra complex. J. Math. Phys. **52** (2011), no 5, 053510, 35pp. arXiv:1007.3707

180. (with N. Cantarini) Classification of linearly compact simple algebraic N=6 3-algebras. Transformation Groups **16**(2011),649-671. arXiv:1010.3599

181. (with M. Gorelik, P. Moseneder Frajria and P. Papi) Denominator identities for finite-dimensional Lie superalgebras and Howe duality for compact dual pairs. Japan. J. Math.**7**(2012), 41-134. arXiv:1102.3785

182. (with A. De Sole) The variational Poisson cohomology. Japan. J. Math. **8** (2013), 1-145. arXiv:1106.0082

183. (with A. De Sole) Essential variational Poisson cohomology. Comm. Math. Phys. **313** (2012), 837-864. arXiv:1106.5882

184. (with C. Boyallian and J. Liberati) Classification of finite irreducible modules over the Lie conformal superalgebra CK_6, Comm. Math. Phys. **317**(2013), 503-546. arXiv:1110.3972

185. (with S. Carpentier and A. De Sole) Some algebraic properties of differential operators. J. Math. Phys. **53**(2012), no. 6. 063501. arXiv:1201.1992

186. (with A.G. Elashvili and E.B. Vinberg) Cyclic elements in semisimple Lie algebras. Transformation Groups **18**(2013), 97-130. arXiv:1205.0515

187. (with S. Carpentier and A. De Sole) Rational matrix pseudodifferential operators. Selecta Math. **20**(2014). no 2, 403-419 . arXiv:1206.4165

188. (with A. De Sole and D. Valeri) Classical W-algebras and generalized Drinfeld-Sokolov bi-Hamiltonian systems within the theory of Poisson vertex algebras. Comm. Math. Phys. **323**(2013),663-711. arXiv:1207.6286

189. (with P. Moseneder Frajria, P. Papi and F. Xu) Conformal embeddings and simple current extensions. IMRN 2015, no 14, 5229-5288. arXiv:1210.6602

190. (with S. Carpentier and A. De Sole) Some remarks on non-commutative principal ideal rings. *C.R. Math. Acad. Sci. Paris*, **351** (2013), 5-8. arXiv:1305.0380

191. (with A. De Sole) Non-local Poisson structures and applications to the theory of integrable systems. Jpn. J. Math. **8** (2013), 233-347. arXiv:1302.0148

192. (with A. De Sole and R. Turhan) A new approach to the Lenard-Magri scheme of integrability. Comm. Math. Phys.**330** (2014), 107-122. arXiv:1303.3438

193. (with P. Moseneder Frajria and P. Papi) Dirac operators and the very strange formula for Lie superalgebras, in Advances in Lie superalgebras. Springer INDAM Series **7**, 2014, pp 121-147. arXiv:1305.5043

194. (With A. De Sole and D. Valeri) Classical W-algebras and generalized Drinfeld-Sokolov hierarchies for minimal and short nilpotents. Commun. Math. Phys. **331** (2014), 623-676. arXiv:1306.1684

195. (with A. De Sole and D. Valeri) Dirac reduction for Poisson vertex algebras. Commun. Math. Phys. **331** (2014), 1155-1190. arXiv:1306.6589

196. (with M. Wakimoto) Representations of affine superalgebras and mock theta functions. Transformation Groups **19** (2014), 383-455 . arXiv:1308.1261

197. (with S. Carpentier and A. De Sole) Singular degree of a rational matrix pseudodifferential operator. IMRN 2015, no 13, 5162-5196. arXiv:1308.2647

198. (with N. Cantarini) Algebraic vs physical N=6 3-algebras. J. Math. Phys. **55** (2014), 011704. arXiv:1309.7746

199. (with A. De Sole and D. Valeri) Adler-Gelfand-Dickey approach to classical W-algebras via the theory of Poisson vertex algebras. IMRN 2015, no 21, 11186-11235. arXiv:1401.2082

200. (with A. De Sole and D. Valeri) Integrability of Dirac reduced bi-Hamiltonoan equations, in Trends in Contemporary Math, Springer INDAM Series **8**, 2014, pp 13-32. arXiv:1401.6006

201. (with M. Wakimoto) Representations of affine superalgebras and mock theta functions II. Advances in Math. **300** (2016), 17-70. arXiv:1402.0727

202. (with A. De Sole and D. Valeri) Structure of classical (finite and affine) W-algebras. J. Eur. Math. Soc. **18** (2016), 1873-1908. arXiv:1404.0715

203. (with A. De Sole and R. Turhan) On integrability of some bi-Hamiltonian two field systems of PDE. J. Math. Phys. **56** (2015), no 5, 051503. arXiv:1405.1349

204. (with M. Gorelik) Characters of (relatively) integrable modules over affine Lie superalgebras. Jpn. J. Math. **10** (2015), no 2, 135-235. arXiv:1406.6860

205. (with A. De Sole and D. Valeri) Erratum to: Classical W-algebras and generalized Drinfeld-Sokolov hierarchies for minimal and short nilpotents, Commun. Math. Phys. **333** (2015), no 3, 1617-1619.

206. (with A. De Sole and D. Valeri) Double Poisson vertex algebras and non-commutative Hamiltonian equations. Advances in Math. **281** (2015), 1025-1099. arXiv:1410.3325

207. (with M. Wakimoto) Representations of affine superalgebras and mock theta functions III. Izvestija RAN Ser Mat. **80** (2016), no 4, 65-122. arXiv:1505.01047

208. (with A. De Sole and D. Valeri) A new scheme of integrability for (bi) Hamiltonian PDE. Comm. Math. Phys. **347** (2016), no 2, 449-488. arXiv:1508.02549

209. (with D. Adamovic, P. Moseneder Frajria, P. Papi and O. Perse) Finite vs infinite decompositions in conformal embeddings. Comm. Math. Phys. **348**(2016), no 2, 345-473. arXiv:1509.06512.

210. (with A. De Sole and D. Valeri) Classical affine W-algebras for gl_N and associated integrable Hamiltonian hierarchies. Comm. Math. Phys. **348** (2016), no 1, 265-319. arXiv:1509.06878.

211. (with M. Wakimoto) A characterization of modified mock theta functions. Transformation Groups **22** (2017) no 4, 979-1004. arXiv:1510.05683.

212. (with N. Cantarini) Classification of linearly compact simple Nambu-Poisson algebras. J. Math. Phys. **57** (2016), no 5, 051701. arXiv:1511.04957.

213. Introduction to vertex algebras, Poisson vertex algebras, and integrable Hamiltonian PDE, in Perspecives in Lie theory. Springer INDAM Ser. **19** (2017), 3-72. arXiv:1512.00821.

214. (with D. Adamovic, P. Moseneder Frajria, P. Papi and O. Perse) Conformal embeddings of affine vertex algebras in minimal W-algebras I: structural results. J. Algebra **500** (2018), 117-152. arXiv:1602.04687.

215. (with D. Adamovic, P. Moseneder Frajria, P. Papi and O. Perse) Conformal embeddings of affine vertex algebras in minimal W-algebras II: decompositions. Japan. J. Math. **12** (2017), 261-315. arXiv:1604.00893

216. (with A. De Sole and D. Valeri) Finite W-algebras for gl_N. Advances in Math. **207** (2018), 173-224. arXiv:1605.02898

217. (with M. Wakimoto) A remark on boundary level admissible representations, *C.R. Math. Acad. Sci. Paris*, **355** (2017), no 2, 128-132. arXiv:1612.07423

218. (with M. Wakimoto) Representations of superconformal algebras and mock theta functions, Trans. Moscow Math. Soc. **78** (2017), no 1, 9-74. arXiv:1701.03344

219. (with D. Adamovic, P. Moseneder Frajria, P. Papi and O. Perse) On classification of non-equal rank affine conformal embeddings and applications, Selecta Math. **24** (2018), 2455-2498. arXiv:1702.06089

220. (with A. De Sole and D. Valeri) Classical affine W-algebras and the associated integrable Hamiltonian hierarchies for classical Lie algebras, Comm. Math. Phys. **360**(2018), no 3, 851-918. arXiv:1705.10103

221. (with M. Wakimoto) On characters of irreducible highest weight modules of negative integer level over affine Lie algebras, Progress in Math. **326** (2018), pp 235–252. arXiv:1706.08387

222. (with A. De Sole and D. Valeri) A Lax type operator for quantum finite W-algebras, Selecta Math. **24** (2018), no 5, 4617–4657. arXiv:1707.03669

223. (with J. van de Leur) Equivalence of formulations of the MKP hierarchy and its polynomial tau-functions, Japan. J. Math. **13** (2018), no 2, 235–271. arXiv:1801.02845

224. (with D. Adamovic, P. Moseneder Frajria, P. Papi and O. Perse) An application of collapsing levels to representation theory of affine vertex algebras, IMRN **2020**, no 13, 4103-4143 . arXiv:1801.09880

225. (with D. Adamovic, P. Moseneder Frajria, P. Papi and O. Perse) Kostant's pairs of Lie type and conformal embeddings, in Affine, vertex and W-algebras, Springer INDAM Series **37**, 2019, pp 1-22 arXiv:1802.02929

226. (with A. Elashvili and M. Jibladze) On Dynkin gradings in simple Lie algebras, in Representations and nilpotent orbits of Lie algebraic systems, in Progress in Math **330**, Birkhauser, 2019, pp 111-131. arXiv:1806.00893

227. (with A. De Sole, D. Valeri and M. Wakimoto) Poisson λ-brackets for differential-difference equations, IMRN **2020**, no 13, 4144-4190. arXiv:1806.05536

228. (with B. Bakalov. A. De Sole, and R. Heluani) An operadic approach to vertex algebra and Poisson vertex algebra cohomology, Japan. J. Math. **14** (2019), no 2, 249-342. arXiv:1806.08754

229. (with A. De Sole, D. Valeri and M. Wakimoto) Local and non-local multiplicative Poisson vertex algebras and differential-difference equations, Commun. Math. Phys. **370**(2019), no 3, 1019-1068. arXiv:1809.01735

230. (with C. Dong and L. Ren) Trace functions of the parafermion vertex operator algebras, Advances in Math. **348** (2019), 1-17. arXiv:1810.04790

231. (with van de Leur) Polynomial tau-functions of BKP and DKP hierarchies, J. Math. Phys. **60** (2019), no 7. arXiv:1811.08733

232. (with B. Bakalov, A. De Sole, and R. Heluani) Chiral vs classical operads, IMRN **2020**, no 19, 6463-6488. arXiv:1812.05972

233. (with J. van de Leur) Polynomial tau-functions of the multicomponent KP hierarchy, PRIMS **58** (2022), no 1, 1-19. arXiv:1901.07763

234. (with B. Bakalov and A. De Sole) Computation of cohomology of Lie conformal and Poisson vertex algebras, Selecta Math. (N.S.) **26** (2020), no 4, 1-51. arXiv:1903.12059

235. (with M. Gardini and A. De Sole) On the structre of quantum vertex algebras, J. Math. Phys. **61** (2020), no 1, 011701, 29pp. arXiv:1906.05051.

236. (with B. Bakalov. A. De Sole, and V. Vignoli) Poisson vertex algebra cohomology and differential Harrison cohomology, Representation theory, mathematical physics, and integrable systems, pp 39-69. Progress in Math. **340**, Birkhauser, 2021. arXiv:1907.06934

237. (with A. Elashvili and M. Jibladze) Semisimple cyclic elements in semisimple Lie algebras, Transf. Groups **27**(2022), no 2, 429-470. arXiv:1907.09170

238. On complexity of representations of quivers. C.R. Math. Acad. Sci. Paris **357**(2019), no 11-12, 841-845. arXiv:1908.10157

239. (with S. Carpentier, A. De Sole, D. Valeri and J. van de Leur) p-reduced multicomponent KP hierarchy and classical W-algebras $W(gl_N, p)$, Commun. Math. Phys. **380**(2020) no 2, 655-722. arXiv:1909.03301

240. (with P. Moseneder Frajria and P. Papi) Yangians vs minimal W-algebras: a surprizing coincidence. Commun. Contemporary Math. **23**(2021) no 4, 2050036, 36pp. arXiv:1912.07404

241. (with B. Bakalov and A. D'Andrea) Irreducible modules over finite simple Lie pseudoalgebras III. Primitive pseudoalgebras of type H. Advances in Math. **392**(2021) paper no 107963, 81pp. arXiv:2021.04104

242. (with B. Bakalov and A. De Sole) Computation of cohomology of vertex algebras. Japan. J. Math. **16** (2021), 81-154. arXiv:2002.03612

243. (with N. Cantarini and F. Caselli) Lie conformal superalebras and duality of modules over linearly compact Lie superalgebras. Advances in Math. **378** (2021), paper no 107523, 45pp. arXiv:2003.01015

244. (with N. Rozhkovskaya and J. van de Leur) Polynomial tau-functions of the KP, BKP and the s-component KP hierarchies, J. Math. Phys. **62** (2021), no 2, 021702, 25pp. arXiv:2005.02665

245. (with A. De Sole, M. Jibladze and D. Valeri) Integrability of classical affine W-algebras. Transf. Groups **26** (2021), no 2, 479-500. arXiv:2007.01244

246. (with N. Cantarini and F. Caselli) Classification of degenerate Verma modules for E(5,10). Comm. Math. Phys. **385** (2021), no 2, 963-1005. arXiv:2008.00721

247. (with P. Moseneder Frajria and P. Papi) Invariant Hermitian forms on vertex algebras. Commun. Contemporary Math. **24** (2022), no 2, 2150059, 41pp. arXiv:2008.13178

248. (with A. De Sole, M. Jibladze and D. Valeri) Integrable triples in semisimple Lie algebras. Lett. Math. Phys. **111** (2021), no 5, paper no 117, 64pp. arXiv:2012.12913

249. (with P. Moseneder Frajria and P. Papi) Unitarity of minimal W-algebras. arXiv:2012.14643

250. (with B. Bakalov, A. De Sole, R. Heluani and V. Vignoli) Classical and variational Poisson cohomology. Japan. J. Math. **16** (2021), no 2, 203-246. arXiv:2101.10939

251. (with M. Jibladze) Normal forms of nilpotent elements in semisimple Lie algebras. Indag. Math. **32**(2021), no 6, 1311-1331. arXiv:2103.00261

252. (with A. De Sole and D. Valeri) On Lax operators. Japan. J. Math. **17** (2022), no 1, 63-116. arXiv:2107.07280

253. (with M. Wakimoto) On free field realisation of quantum affine W-algebras, Comm. Math. Phys. **395** (2022), no 2, 571-600. arXiv:2110.15476

254. (with A. De Sole and D. Valeri) Adler-Oevel-Ragnisco type operators and Poisson vertex algebras. Pure and Applied Math. Quarterly **20** (2024), no 3, 1181-1249. arXiv:2208.00154

255. (with P. Moseneder Frajria and P. Papi) Unitarity of minimal W-algebras and their representations I. Commun. Math. Phys. **401** (2023), no 1, 79-145. arXiv:2208.02101

256. (with R. Bezrukavnikov and V. Krylov) Subregular nilpotent orbits and explicit character formulas for modules over affine Lie algebras. Pure and Applied Math. Quarterly **20** (2024) no 1, 81-138. arXiv:2209.08865

257. (with B. Bakalov, J. Elsinger and I. Todorov) Orbifolds of lattice vertex algebras. Japan. J. Math. **18** (2023) no 2, 169-274 . arXiv:2210.11936

258. (with J. van de Leur) The generalized Giambelli formula and polynomial CKP tau-functions. J. Phys. A: Math. Theor. **56** (2023), no 18, Paper no 185203, 28pp. arXiv:2211.17197

259. (with D. Adamovic, P. Moseneder Frajria and P. Papi) Defining relations for minimal unitary quantum affine W-algebras. Commun. Math. Phys. **405** (2024), no 2, Paper no 33, 25pp. arXiv:2302.05269

260. (with A. De Sole and D. Valeri) Poisson vertex algebras and Hamiltonian PDE, Encyclopedia article, 25pp. arXiv:2306.09709

261. (with N. Cantarini and F. Caselli) A Lie conformal superalebra and duality of representations for E(4,4). Advances in Math. **437** (2024) paper no 109416, 21pp. arXiv:2303.17450

262. (with J. van de Leur) Multicomponent KP type hierarchies and their reductions, associated to conjugacy classes of Weyl groups of classical Lie algebras. J. Math. Phys. **64** (2023), no 9, paper No 091702, 91pp. arXiv:2304.05737

263. Non-Archimedean vertex algebras. arXiv:2304.09651

264. (with M. Gorelik) On simplicity of universal minimal W-algebras. arXiv:2307.14220

265. (with J. van de Leur) Polynomial tau-functions of the n-th Sawada-Kotera hierarchy. arXiv:2312.00602

266. (with P. Moseneder Frajria and P. Papi) Unitarity of minimal W-algebras and their representations II: Ramond sector. arXiv:2405.19090

267. (with A. De Sole and R. Heluani) Conformal operads and the basic vertex algebra cohomology complex. arXiv:2407.05725