# Cumulative Biobibliography University of California, Santa Cruz

# $\begin{array}{c} {\rm Chongying\ Dong} \\ {\rm Professor} \\ {\rm Department\ of\ Mathematics/Physical\ and\ Biological\ Sciences} \end{array}$

#### **EMPLOYMENT**

1998-present	Professor, University of California, Santa Cruz
1994-1998	Associate Professor, University of California, Santa Cruz
1990-1994	Assistant Professor, University of California, Santa Cruz
1987-1990	Postdoctoral fellow, Rutgers University, New Brunswick
1986-1987	Assistant Professor, Graduate School, Academia Sinica,
	Beijing

## **EDUCATION**

1978-1982	B.S. Mathematics, Xidian University
1982-1986	Ph.D. Mathematics, Institute of System Science,
	Academia Sinica, Beijing

#### PROFESSIONAL COMPETENCE AND ACTIVITY

#### Grants and Awards

1992-1994	National Security Agency, \$9000
1993-1996	National Science Foundation, \$51700
1997-2000	National Science Foundation, \$60000
2000-2003	National Science Foundation, \$70200
2003-2004	National Science Foundation, \$10000
2003-2006	National Science Foundation, \$105000
2006-2009	National Science Foundation, \$123000
2007-2009	National Science Foundation, \$77592
2009-2014	National Science Foundation, \$215164
2010-2012	National Science Foundation, \$49800
2013-2014	National Security Agency, \$41120
2014-2017	National Science Foundation, \$150000

# PUBLISHED WRITING AND CREATING ACTIVITIES

- 1. C. Dong, On full subgroups of twisted groups, Lecture Notes in Mathematics Vol. 1185 (1985), 277–288.
- 2. C. Dong, Structure of some nonstandard modules for  $C_n^{(1)}$ , J. Algebra 120 (1989), 301–338.
- C. Dong and J. Lepowsky, A Jacobi identity for the relative vertex operators and the equivalence of Z-algebras and parafermion algebras, in: Proc. XVIIth Intl. Colloq. on Group Theoretical Methods in Physics, Ste-Adèle, June, 1988, ed. Y. Saint-Aubin, World Scientific, Singapore, 1989, 235-238.
- 4. C. Dong, Vertex algebras associated with even lattices, J. Algebra 160 (1993), 245-265.

- 5. C. Dong and J. Lepowsky, Generalized Vertex Algebras and Relative Vertex Operators, *Progress in Math.* Vol. 112, Birkhäuser, Boston 1993.
- C. Dong, Twisted modules for vertex algebras associated with even lattices, J. Algebra 165 (1994), 90-112.
- 7. C. Dong and J. Lepowsky, Abelian intertwining algebras a generalization of vertex operator algebras, *Proc. Symp. Pure. Math.*, *American Math. Soc.* **56** II (1994), 261-294.
- 8. C. Dong, G. Mason and Y. Zhu, Discrete series of the Virasoro algebra and the moonshine module, *Proc. Symp. Pure. Math.*, *American Math. Soc.* **56** II (1994), 295-316.
- 9. C. Dong, Representations of the moonshine module vertex operator algebra, *Contemp. Math.* **175** (1994), 27-36.
- 10. C. Dong and G. Mason, The construction of the moonshine module as a  $\mathbf{Z}_p$ -orbifold, Contemporary Math. 175 (1994), 37-52.
- 11. C. Dong and G. Mason, Nonabelian orbifolds and boson-fermion correspondence, *Comm. Math. Phys.* **163** (1994), 523-559.
- 12. C. Dong and G. Mason, An orbifold theory of genus zero associated with the sporadic simple group  $M_{24}$ , Comm. Math. Phys. **164** (1994), 87-104.
- 13. C. Dong, Introduction to vertex operator algebra I, *Moonshine and vertex operator algebra*, Lecture Notes **904**, Research Institute for Mathematics Sciences, Kyoto University, 1995, 1-25.
- 14. C. Dong, Z. Lin and G. Mason, On vertex operator algebras as sl<sub>2</sub>-modules, in: Groups, Difference Sets, and the Monster, Proc. of a Special Research Quarter at The Ohio State University, Spring 1993, ed. by K.T. Arasu, J.F. Dillon, K. Harada, S. Sehgal and R. Solomon, Walter de Gruyter, Berlin-New York, 1996, 349-362.
- 15. C. Dong and J. Lepowsky, The algebraic structure of relative twisted vertex operators, *J. Pure and Applied Algebra* **110** (1996), 259-295.
- 16. C. Dong, H. Li and G. Mason, Some twisted modules for the moonshine vertex operator algebras, *Contemp. Math.* **193** (1996), 25-43.
- 17. C. Dong and Z. Lin, Induced modules for vertex operator algebras, *Comm. Math. Phys.* **179** (1996), 157-184.
- 18. C. Dong and G. Mason, Vertex operator algebras and moonshine: A survey, *Advanced Studies in Pure Math.* **24** (1996), 101-136.
- 19. C. Dong, H. Li and G. Mason, Simple currents and extensions of vertex operator algebras, *Comm. Math. Phys.* **180** (1996), 671-707.
- 20. C. Dong, H. Li and G. Mason, Compact automorphism groups of vertex operator algebras, *International Math. Research Notices* 18 (1996), 913-921.
- 21. C. Dong and G. Mason, On quantum Galois theory, Duke Math. J. 86 (1997), 305-321.
- 22. C. Dong, H. Li and G. Mason, Regularity of rational vertex operator algebras, *Advances. in Math.* **132** (1997), 148-166.
- 23. C. Dong, H. Li and G. Mason, Vertex operator algebras and modules associated to admissible representations of  $\hat{sl}_2$ , Comm. Math. Phys., **184** (1997), 65-93.

- 24. C. Dong, H. Li and G. Mason, The Analogue of Hom-functor and the associativity of tensor products of modules for vertex operator algebras, *J. Algebra* **188** (1997), 443-475.
- 25. C. Dong, H. Li and G. Mason, Certain associative algebras similar to  $U(sl_2)$  and Zhu's algebra  $A(V_L)$ , J. Algebra 196 (1997), 532-551.
- 26. C. Dong, H. Li and G. Mason, Twisted representations of vertex operator algebras, *Math. Ann.* **310** (1998), 571-600.
- 27. C. Dong, H. Li, G. Mason and S. Norton, Associative subalgebras of the Griess algebra and related topics, in: Proc. of the Conference on the Monster and Lie algebras at The Ohio State University, May 1996, ed. by J. Ferrar and K. Harada, Walter de Gruyter, Berlin-New York, 1998, 27-42.
- 28. C. Dong, H. Li, G. Mason and P. Montague, The radical of a vertex operator algebra, in: *Proc.* of the Conference on the Monster and Lie algebras at The Ohio State University, May 1996, ed. by J. Ferrar and K. Harada, Walter de Gruyter, Berlin-New York, 1998, 17-25.
- 29. C. Dong, R. Griess Jr. and G. Hoehn, Framed vertex operator algebras, codes and the moonshine module, *Comm. Math. Phys.* **193** (1998), 407-448.
- 30. C. Dong, H. Li and G. Mason, Vertex operator algebras and associative algebras, *J. Algebra* **206** (1998), 67-96.
- 31. C. Dong, H. Li and G. Mason, Twisted representations of vertex operator algebras and associative algebras, *International Math. Research Notices*, 8 (1998), 389-397.
- 32. C. Dong and R. Griess Jr., Rank one lattice type vertex operator algebras and their automorphism groups, *J. Algebra* **208** (1998), 262-275.
- 33. C. Dong and G. Mason, Quantum Galois theory for compact Lie groups, *J. Algebra*, **214** (1999), 92-102.
- 34. C. Dong and K. Nagatomo, Classification of irreducible modules for the vertex operator algebra  $M(1)^+$ , J. Algebra **216** (1999), 384-404.
- 35. C. Dong and K. Nagatomo, Classification of irreducible modules for the vertex operator algebra  $V_L^+$  for rank 1 lattice L, Comm. Math. Phys. **202** (1999), 169-195.
- 36. C. Dong, R. Griess Jr. and A. Ryba, Rank one lattice type vertex operator algebras and their automorphism groups, II E-series, J. Algebra 217 (1999), 701-710.
- 37. C. Dong, C. Lam and H. Yamada, Decomposition of the vertex operator algebra  $V_{\sqrt{2}A_3}$ , J. Algebra, 222 (1999), 500-510.
- 38. C. Dong and K. Nagatomo, Automorphism groups and twisted modules for lattice vertex operator algebra, *Contemp. Math.* **248** (1999), 117-133.
- 39. C. Dong, H. Li and G. Mason, Modular invariance of trace functions in orbifold theory and generalized moonshine, *Comm. Math. Phys.* **214** (2000), 1-56.
- 40. C. Dong and G. Mason, Monstrous Moonshine of higher weight, *Acta Mathematica*, **185** (2000), 101-121.
- 41. C. Dong and G. Mason, Vertex operator algebras and their automorphism groups, In: Proceedings of International Conference on Representation Theory (Shanghai, 1998), China Higher Education Press and Springer-Verlag, Beijing, 2000, 145-166.

- 42. C. Dong, C. Lam and H. Yamada, Decomposition of the vertex operator algebra  $V_{\sqrt{2}D_l}$ , Comm. Contemp. Math. 3 (2001), 137-151.
- 43. C. Dong, G. Mason and K. Nagatomo, Quasi-modular forms and trace functions associated to free boson and lattice vertex operator algebras, *International Math. Research Notices*, 8 (2001), 409-428.
- 44. C. Dong and K. Nagatomo, Classification of irreducible modules for the vertex operator algebra  $M(1)^+$ : higher rank, J. Algebra, **240** (2001), 289-325.
- 45. C. Dong and G. Mason, The radical of a vertex operator algebra associated to a module, *J. Algebra* **242** (2001), 360-373.
- 46. C. Dong and G. Mason, Transformation laws of theta functions, CRM Proceedings and Lecture Notes, Centre de Recherches Mathématiques, 30 (2001), 15-26.
- 47. K. Barron, C. Dong and G. Mason, Twisted sectors for tensor product VOAs associated to permutation groups *Comm. Math. Phys.* **227** (2002), 349-384.
- 48. C. Dong, H. Li and G. Mason, Vertex Lie algebra, vertex Poisson algebra and vertex algebras, *Contemp. Math.* **297** (2002), 69-96.
- 49. C. Dong and R. Griess Jr. Automorphism groups and derivation algebras of finitely generated vertex operator algebras, *Michigan Math. J.* **50** (2002), 227-239.
- 50. C. Dong and G. Yamskulna, Vertex operator algebras, Generalized double and dual pairs, *Math. Z.* **241** (2002), 397-423.
- 51. S. Berman, C. Dong and S. Tan, Representations of a class of lattice type vertex algebras, *J. Pure and Applied Algebra*, **176** (2002), 27-47.
- 52. C. Dong, K. Liu and X. Ma, On orbifold elliptic genus, Contemp. Math. 310 (2002), 87-106.
- 53. T. Abe, G. Buhl and C. Dong, Rationality, regularity and  $C_2$ -cofiniteness, Trans.~AMS.~356 (2004), 3391-3402.
- 54. C. Dong and G. Mason, Holomorphic vertex operator algebras of small central charges, *Pacific J. Math.* **213** (2004), 253-266.
- 55. T. Abe and C. Dong, Classification of irreducible modules for the vertex operator algebra  $V_L^+$ : general case, J. Algebra 273 (2004), 657-685.
- 56. C. Dong, C. Lam, K. Tanabe, H. Yamada and K. Yokoyama,  $\mathbb{Z}_3$  symmetry and  $W_3$  algebra in lattice vertex operator algebras, *Pacific J. Math.* **215** (2004), 245–296.
- 57. C. Dong and G. Mason, Rational vertex operator algebras and the effective central charge, *International Math. Research Notices* **56** (2004), 2989-3008.
- C. Dong and G. Mason, Local and semilocal vertex operator algebras, J. Algebra 280 (2004), 350-366.
- 59. C. Dong, K. Liu, X. Ma and J. Zhou, K-theory associated to vertex operator algebras, *Mathematical Research Letters* **11** (2004), 629-647.
- 60. T. Abe. C. Dong and H. Li, Fusion rules for the vertex operator algebras  $M(1)^+$  and  $V_L^+$ , Comm. Math. Phys. **253** (2005), 171-219.
- 61. C. Dong and Z. Zhao, Modularity in orbifold theory for vertex operator superalgebras, *Comm. Math. Phys.* **260** (2005), 227-256.

- 62. C. Dong and R. Griess Jr., The rank two lattice type vertex operator algebras  $V_L^+$  and their automorphism groups, *Michigan Math. J.* **53** (2005), 691-715.
- 63. C. Dong, K. Liu and X. Ma, Elliptic genus and vertex operator algebras, *Quarterly J. Pure and Applied Math.* 1 (2005), 791-815.
- 64. C. Dong and Z. Zhao, Twisted representations of vertex operator superalgebras, *Comm. Contemp. Math.* 8 (2006), 101-122.
- 65. C. Dong and G. Mason, Integrability of  $C_2$ -cofinite vertex operator algebras, *International Math. Research Notices* **2006** (2006), Article ID 80468, 15 pages.
- 66. C. Dong and G. Mason, Shifted vertex operator algebras, Mathematical Proceedings of the Cambridge Philosophical Society 141 (2006), 67-80.
- 67. C. Dong and F. Xu, Conformal nets associated to lattices and their orbifolds, *Adv. Math.* **206** (2006), 279-306.
- 68. C. Dong, R. Griess Jr. and C. Lam, Uniqueness results of the moonshine vertex operator algebra, *American Journal of Math.* **129** (2007), 583-609.
- 69. C. Dong and C. Jiang, Representations of vertex operator algebras, *Contemp. Math.* **442** (2007), 303-313.
- 70. C. Dong and C. Jiang, Bimodules and g-rationality of vertex operator algebras, *Trans. AMS.* **360** (2008), 4235-4262.
- 71. C. Dong and C. Jiang, Bimodules associated to vertex operator algebra, *Math. Z.* **289** (2008), 799-826.
- 72. C. Dong and W. Zhang, On classification of rational vertex operator algebras with central charges less than 1, *J. Algebra* **320** (2008), 86-93.
- 73. C. Dong and W. Zhang, Rational vertex operator algebras are finitely generated, *J. Algebra* **320** (2008), 2610-2614.
- 74. C. Dong, C. Lam and H. Yamada, W-algebras in lattice vertex operator algebras, in *Lie Theory and Its Applications in Physics VII*, ed. by H.-D. Doebner and V. K. Dobrev, Proc. of the VII International Workshop, Varna, Bulgaria, 2007, *Bulgarian J. Phys.* **35** supplement (2008), 25–35.
- 75. C. Dong and W. Zhang, W-algebra W(2,2) and the vertex operator algebra  $L(1/2,0)\otimes L(1/2,0)$ , Comm. Math. Phys. **285** (2009), 991-1004.
- 76. C. Dong, The Moonshine vertex operator algebra  $V^{\natural}$ , In: Proceedings of the Fourth International Congress of Chinese Mathematicians (Hangzhou, 2007), China Higher Education Press, Beijing, 2009, 424-441.
- 77. C. Dong, C. Lam and H. Yamada, W-algebras related to Parafermion algebras, J. Algebra 322 (2009), 2366-2403.
- 78. C. Dong, C. Lam, H. Yamada and Q. Wang, The structure of Parafermion vertex operator algebra, *J. Algebra* **323** (2010), 371-381.
- 79. C. Dong and C. Jiang, A characterization of vertex operator algebra  $L(\frac{1}{2},0) \otimes L(\frac{1}{2},0)$ , Comm. Math. Phys. **296** (2010), 69-88.

- 80. C. Dong and Z. Zhao, Modularity of trace functions in orbifold theory for Z-graded vertex operator superalgebras, *London Mathematical Society Lecture Notes Series.* **372** (2010), 128-143.
- 81. C. Dong and Q. Wang, The structure of Parafermion vertex operator algebras: general case, *Comm. Math. Phys.* **299** (2010), 783-792.
- 82. C. Dong and Q. Wang, On  $C_2$ -cofiniteness of the parafermion vertex operator algebras, J. Algebra 328 (2011), 420-431.
- 83. C. Dong and Q. Wang, Parafermion vertex operator algebras, Frontiers of Mathematics in China **6(4)** (2011), 567-579.
- 84. C. Dong, C. Jiang and X. Lin, Rationality of vertex operator algebra  $V_L^+$ : higher rank, *Proceedings of the London Mathematical Society*, **104** (2012), 799-826.
- 85. C. Dong and R. L. Griess, Integral forms in vertex operator algebras, **365** J. Algebra **365** (2012), 184-198.
- C. Dong and N. Yu, Z-graded weak modules and regularity, Comm. Math. Phys. 316 (2012), 269-277.
- 87. C. Dong and J. Han, Some finite properties for vertex operator superalgebras, *Pacific J. Math.* **258** (2012), 269-290.
- 88. C. Dong, X. Jiao and F. Xu, Quantum Dimensions and Quantum Galois Theory, *Trans. AMS.*, **365** (2013), 6441-6469.
- 89. C. Dong and C. Jiang, Representations of the vertex operator algebra  $V_{L_2}^{A_4}$ , J. Algebra 377 (2013), 76-96.
- 90. C. Dong and L. Ren, Representations of vertex operator algebras and bimodules, *J. Algebra* **384** (2013), 212-226.
- 91. C. Dong and J. Han, On rationality of vertex operator superalgebras, *International Math. Research Notices* **2013** (2013), Article ID 80468, 15 pages.
- 92. C. Dong and C. Jiang, A characterization of the rational vertex operator algebra  $V_{Z\alpha}^+$ : II, Adv. Math. 247 (2013), 41-70.
- 93. C. Dong and X. Lin, Unitary vertex operator algebras, J. Algebra 397 (2014), 252-277.
- 94. C. Dong and L. Ren, Representations of vertex operator algebras over an arbitrary Field, *J. Algebra* **403** (2014), 497-516.
- 95. C. Dong, X. Jiao and F. Xu, Mirror extensions of vertex operator algebras, *Comm. Math. Phys.* **329** (2014), 263-294.
- 96. C. Dong and C. Jiang, A characterization of the vertex operator algebra  $V_{L_2}^{A_4}$ , Conformal Field Theory, Automorphic Forms and Related Topics (Heidelberg, 2011), 55-74, Contributions in Mathematical and Computational Sciences 8, Springer, 2014.
- 97. C. Dong, C. Jiang, Q. Jiang, X. Jiao and Nina Yu, Fusion rules for the vertex operator algebra  $V_{L_2}^{A_4}$ , J. Algebra 423 (2015), 476-505.
- 98. C. Ai, C. Dong and X. Lin, Modularity of *n*-point functions and theta functions for vertex operator superalgebras, *J. Algebra* **442** (2015), 2-22.

- 99. C. Dong and X. Lin, The extensions of  $L_{sl_2}(k,0)$  and preunitary vertex operator algebras with central charges c < 1, Comm. Math. Phys. **340** (2015), 613-637.
- 100. C. Dong, X. Lin and S.H. Ng, Congruence property in conformal field theory, *Algebra & Number Theory* 9 (2015), 2121-2166.
- 101. C. Dong and C. Jiang, A characterization of vertex operator algebras  $V_{Z\alpha}^+$ : I, J. Reine Angew. Math. 709 (2015), 51-79.
- 102. C. Dong and Q. Wang, Quantum dimensions and fusion rules for parafermion vertex operator algebras, *Proc. AMS* **144** (2016), 1483-1492.
- 103. C. Dong and L. Ren, Vertex operator algebras associated to the Virasoro algebra over an arbitrary field, **368** Trans. AMS. (2016), 5177-5196.
- 104. C. Dong, F. Xu and N. Yu, 2-cyclic permutations of lattice vertex operator algebras, *Proc. AMS* 144 (2016), 3207-3220.
- 105. C. Dong and R. Griess, Lattice-integrality of certain group-invariant integral forms in vertex operator algebras, J. Algebra 474 (2017), 505-516.
- 106. C. Dong, F. Xu and N. Yu, 2-Permutations of lattice vertex operator algebras: Higher rank, *J. Algebra* **476** (2017), 1-25.
- 107. C. Dong and L. Ren, Representations of the parafermion vertex operator algebras, *Adv. Math.* **315** (2017), 88-101.
- 108. C. Dong L. Ren and F. Xu, On orbifold theory, Adv. Math. 321 (2017), 1-30.
- 109. C. Dong and L. Ren, Congruence property in orbifold theory, Proc. AMS. 146 (2018), 497-506.
- 110. C. Dong, F. Xu and N. Yu, The 3-permutation orbifold of a lattice vertex operator algebra, *J. Pure & Applied Alg.* **222** (2018), 1316-1336.
- 111. C. Ai, C. Dong, X. Jiao and L. Ren, The irreducible modules and fusion rules for the Parafermion vertex operator algebras, *Trans. AMS.* **370** (2018), 5963-5981.
- 112. C. Dong and H. Wang, Hopf actions on vertex operator algebras, J. Algebra 514 (2018), 310-329.

#### UNIVERSITY SERVICE

Department of Mathematics

1990-1991	Member, Algebra Preliminary Exam Committee
1991-1992	Member, Algebra Preliminary Exam Committee
	Member, Curriculum Committee
1992-1993	Member, Algebra Preliminary Exam Committee
1993-1994	Undergraduate Vice Chair
1994-1995	Undergraduate Vice Chair
	Member, Algebra Preliminary Exam Committee
1995-1996	Member, Search Committee
	Member, Graduate Student Admission Committee
	Member, Algebra and Analysis Preliminary Exam Committees
1996-1997	Member, Algebra Preliminary Exam Committee
1997-1998	Member, Search Committee
	Teaching Vice Chair
	Member, Algebra Preliminary Exam Committee
1998-1999	Recruiting Vice Chair
1999-2000	Mentor of Assistant Professor Baruch
2001-2005	Graduate Vice Chair
2005-2006	Colloquium Vice Chair
2005-2008	Member, the Graduate Admission Committee
2008-2011	Department Chair
2013-2014	Member of hiring committee for Algebra and Number Theory
	Diversity Liais
2014-2015	Member, Algebra Preliminary Exam Committee
2015-2016	Member, Algebra Preliminary Exam Committee
2016-2017	Member, Algebra Preliminary Exam Committee
2016-2017	Hiring committee Chair for Algebra and Number Theory

## Academic Senate

1998-1999	Member, Senate Ad Hoc Committee
2001-2002	Member, Senate Ad Hoc Committee
2002-2003	Member, Senate Ad Hoc Committee
2004-2005(W)	Member, The Senate Committee on Teaching
2005-2007	Member, The Senate Committee on Admission and
	Financial Aids

#### **OUTSIDE PROFESSIONAL ACTIVITIES**

# Seminar and Colloquium Talks

- 1. Yale University, New Haven, Connecticut (November, 1987) Lie theory Seminar: Structure of some nonstandard modules for affine Lie algebras
- 2. Temple University, Philadelphia, Pennsylvania (November, 1989) Colloquium: Z-algebras and parafermion algebras
- 3. Rutgers University, New Brunswick, NJ (March, 1992) Conformal Field Theory Seminar: Representations of the moonshine algebra
- 4. Rutgers University, New Brunswick, NJ (September, 1993) Conformal Field Theory Seminar: Orbifold theory
- 5. Nankai Institute of Mathematics, China (May, 1994) Three lectures on vertex operator algebras

- 6. The Capital Normal University, China (May and June, 1994) Two lectures on vertex operator algebras
- 7. Tsukuba University, Japan (September 14, 1994) Algebra Seminar: Quantum Galois theory
- 8. Hitotsubashi University, Japan (September 16, 1994) Colloquium: Introduction to vertex operator algebras
- 9. Tokyo University, Japan (September 19, 1994) Group Theory Seminar: Vertex operator algebras and the modular invariance
- 10. Chiba University, Japan (September 21, 1994) Algebra Seminar: Quantum Galois theory
- 11. San Jose State University (February 8, 1996) Colloquium: *The monster and Lie algebras*
- 12. University of Michigan (September 9, 1996) Lie Theory Seminar: Affine Lie algebras and vertex operator algebras
- 13. University of Michigan (September 10, 1996) Colloquium: *Monstrous moonshine*
- 14. California State University at Hayward (October 25, 1996) Colloquium: The Monster and vertex operator algebras
- 15. University of New South Wales and University of Sydney (September 11-13, 1997) Joint Colloquium: Vertex operator algebras and generalized moonshine
- 16. Kansas State University (April 2, 1998) Colloquium: The monstrous moonshine and vertex operator algebras
- 17. The Mathematical Science Research Institute, Kyoto University, Japan (Nov. 20, 1998) Analysis Seminar: Coset constructions and dual pairs for vertex operator algebras
- 18. Xidian University, China (Sept. 29, 1999) 1 Hour Talk: Mathematical education in US universities
- 19. Xiamen University (Oct. 3-9, 1999)

  Three lectures on vertex operator algebras
- 20. Institute of Mathematics, Academia Sinica (Oct. 27, 1999) Colloquium: *Monster and vertex operator algebras*
- 21. Beijing University (Nov. 5, 1999)
  Colloquium: Monster, Moonshine and vertex operator algebras
- 22. Graduate School, Academia Sinica (Nov. 11, 1999) Colloquium: Monster, Moonshine and vertex operator algebras
- 23. Beijing University (Oct. 15 Nov. 13, 1999) Nine lectures on vertex operator algebras
- 24. Rutgers University, New Brunswick, NJ (Dec. 10, 1999) Conformal Field Theory Seminar: *Holomorphic orbifold theory and dual pairs*
- 25. York University Canada (April 3, 2000) Algebra Seminar: Monstrous moonshine and vertex operator algebras

Oklahoma State University (May 4-5, 2000)
 Karcher Colloquium Lectures: 1. Generalized moonshine; 2. Holomorphic vertex operator algebras.

27. Chinese University of Hong Kong (June 15, 2000) Colloquium talk: Vertex operator algebras and monstrous moonshine

- 28. Morningside Center for mathematics, Chinese Academy of Science (Aug. 5-12, 2000) Three lectures on vertex operator algebras
- 29. The Fields Institute for Mathematical Sciences (Fall, 2000) 20 Lectures on vertex algebras.
- 30. University of Michigan (Nov. 6, 2000) Lie Theory Seminar: Introduction to vertex algebras
- 31. Chinese University of Hong Kong (Dec. 14, 2000) Seminar talk: *Introduction to voas*
- 32. Concordia University (April 3, 2001) Colloquium talk: *Orbifold theory*
- 33. Osaka University, Japan (June 25, 2001) Colloquium talk: Vertex operator algebras and moonshine
- 34. Hitotsubashi University, Japan (July 30, 2001) Colloquium: *Permutation orbifolds*
- 35. North Carolina University (April 3, 2002) Algebra Seminar: Rationality, regularity and  $C_2$ -cofiniteness
- 36. Mathematical Science Research Institute, Berkeley (May 14, 2002)

  Program talk: Rational vertex operator algebras and effective central charges
- 37. Xiamen University, China (July, 2002)
  Two lectures on vertex operator algebras.
- 38. Shanghai Jiaotong University, China (Aug. 4, 2002) Colloquium talk: *Rationality of vertex operator algebras*
- 39. Tongji University, China (Aug. 5, 2002) Colloquium talk: *Holomorphic vertex operator algebras*
- 40. China East Normal University, China (Aug. 6, 2002) Colloquium talk: Orbifold theory and coset construction
- 41. University of Michigan (Jan. 6, 2003) Algebra Seminar talk: Vertex operator algebras and reductive algebras
- 42. Ecole Normale Superieure, France (March 25, 2003) Quantum Group Seminar: Vertex operator algebras
- 43. UC Santa Barbra (April 24, 2003)
  Colloquium talk: The Monster and vertex operator algebras
- 44. China East Normal University, China (Sept. 9, 2003) 1 hour talk: *Moonshine and vertex operator algebras*

- 45. Shanghai Jiaotong University, China (Sept. 10-11, 2003) 2 lectures: Affine algebras and vertex operator algebras
- 46. Tongji University, China (Sept. 12, 2003) Colloquium talk: Open problems in vertex operator algebras
- 47. Zhejiang University, China (Feb. 26, 2004) Special seminar: Introduction to moonshine
- 48. UC Riverside (May 26, 2004) Colloquium talk: Affine algebras and vertex operator algebras
- 49. Morningside Center for mathematics, Chinese Academy of Science (July 18, 2004) Special seminar: Boson-Fermion correspondence
- 50. Harbin Normal University, China (Aug. 19, 2004) Special seminar: What is the moonshine?
- 51. Xiamen University, China (Aug. 25-27, 2004)

  Three lectures on highest weight representations of infinite dimensional Lie algebras
- 52. Tongji University, China (Aug. 30–Sept. 10, 2004) Eight Lectures on vertex operator algebras
- 53. China East Normal University (Sept. 9, 2004) Special seminar: Vertex operator algebras and K-theory
- 54. Shanghai Jiaotong University, China (Sept. 9, 2004) Special seminar: N=2 super algebras
- 55. Chinese University of Sciences and Technology, China (Dec. 8-11, 2004) Two lectures on vertex operator algebras
- 56. Northwest University, China (Dec. 27, 2004) Special lecture: *Moonshine conjecture*
- 57. Xian University of Architecture Sciences and Technology, China (Dec. 27, 2004) Special lecture: *Moonshine conjecture*
- 58. University of Michigan (March 14, 2005) Group and Lie Theory Seminar: On the uniqueness of the moonshine VOA
- 59. Sichuan University, China (June 20-July 10, 2005) Ten lectures on vertex operator algebras and geometry
- 60. Institute of Mathematic, Chinese Academy (Aug. 15, 2005) Colloquium: Vertex operator algebras and modular forms
- 61. University of Sciences and Technology of China, China (Dec. 26, 2005) Colloquium: Classification of rational vertex operator algebras with c < 1.
- 62. Wilfrid Laurier University, Canada (March 30, 2006) Colloquium: Moonshine and vertex operator algebras
- 63. Northwest University, China (August 12, 2006)
  Summer School in mathematical physics: Introduction to vertex operator algebras
- 64. Xiamen University, China (August, 2006) Two lectures on rational vertex operator algebras

- 65. Xiangtan University, China (August 25, 2006) Colloquium talk: Vertex operator algebras
- 66. Hunan Normal University, China (August 31, 2006) Colloquium talk: Lie groups and vertex operator algebras
- 67. Shanghai Jiaotong University, China (Sept. 7, 2006) Colloquium talk: Rational vertex operator algebra is finitely generated
- 68. East China Normal University, China (Sept. 8, 2006) Colloquium talk: Rationality of vertex operator algebras
- 69. Illinois State University (Nov. 4, 2006)
  Special lecture: Representation theory of vertex operator algebras
- 70. Tokyo University, Japan (Dec. 14, 2006)

  Operator algebra seminar: On the uniqueness of moonshine vertex operator algebras
- 71. University of Sciences and Technology of China, China (June 2007) 24 Lectures on vertex operator algebras
- 72. East China Normal University, Shanghai (Aug. 8, 2007)
  Colloquium talk: On classification of rational vertex operator algebras with central charges less than 1
- 73. University of Minnesota at Twin City (Sept. 27, 2007)

  Colloquium talk: Uniqueness of the moonshine vertex operator algebras
- 74. China East Normal University, Shanghai (Aug. 6,7,8, 2008)
  3 Lectures on rational vertex operator algebras with small central charges
- 75. Xiamen University (Aug. 20, Sept. 3, 2008) 3 Lectures on highest weight module theory for vertex operator algebras
- Shanghai Jiaotong University (Dec. 22, 2008)
   Colloquium talk: C<sub>2</sub>-cofinite vertex operator algebras
- 77. Shanghai Jiaotong University (March 23, 2009) Colloquium talk: On classification of rational vertex operator algebras with c=1
- 78. Xiamen University (Dec. 2009)5 Lectures on infinite dimensional Lie algebras and kdv equations.
- 79. Changshu Institute Science and Technology (Dec. 2009) Colloquium talk: Introduction to vertex algebras
- 80. Institute of Theoretical Physics, Chinese Academy (August 10, 2010) Program talk: Quantum dimensions and quantum Galois theory
- 81. Shanghai Jiaotong University (August 20, 2010) Algebra seminar talk: Quantum dimensions and quantum Galois theory
- 82. Shanghai University (Dec. 20, 2010) Special lecture: Lie algebras and applications
- 83. Shandong Institute of Business and Technology, China (July 16, 2011) Special lecture: Quantum dimensions

84. Shanghai University (Dec. 13, 2011)

Special lecture: Quantum dimensions and Quantum Galois theory

85. Zhejiang University (Dec. 15, 2011)

Distinguished lecture: Quantum dimensions and Quantum Galois theory

86. Northeast Normal University (Feb. 26, March 2, 2012)

Colloquium talks: (1) Moonshine conjecture and vertex operator algebras, (2) Quantum dimensions and Quantum Galois theory

87. Jilin University (March 1, 2012)

Colloquium talk: Quantum dimensions and Quantum Galois theory

88. Henan Normal University (March 19, 2012)

Colloquium talk: Moonshine conjecture and vertex operator algebras

89. Institute of Mathematics, Chinese Academy (Sept. 5, 2012)

Hua Luogeng Lecture: Modularity in conformal field theory

90. Xiamen University, China (July 8, 2013)

Colloquium talks: (1) Quantum dimensions and Quantum Galois theory, (2) Modular invariance in conformal field theory

91. Dalian University of Technology, China (Sept. 4, 2013)

Colloquium talk: Quantum dimensions and Quantum Galois theory

92. Shanghai Jiaotong University, China (Dec. 30, 2013)

Colloquium talk: Classification of rational vertex operator algebras with c=1

93. Shanghai Normal University, China (Dec. 31, 2013)

Colloquium talk: Quantum dimensions and Quantum Galois theory

94. Academia Sinica, Taiwan (March 34, 2014)

Representation theory seminar: Quantum dimensions and Quantum Galois theory

95. Dalian University of Technology, China (Sept. 18, 2014)

Colloquium talk: Lie algebras and vertex operator algebras

96. Beijing University, China (Sept. 19, 2014)

Colloquium talk: Modularity in vertex operator algebras and conformal field theory

97. Shanghai Jiaotong University, China (Sept. 29, 2014)

Colloquium talk: Rationality and unitary vertex operator algebras

98. Shanghai Tongji University, China (March 25, 2015)

Colloquium talk: Orbifold and coset theory

99. Shanghai Jiaotong University, China (March 26, 2015)

Special talk: Obifold theory and dual pairs

100. Shanghai Normal University, China (March 26, 2015)

Colloquium talk: Introduction to vertex operator algebras

- 101. Shanghai Jiaotong University, China (July 1, 2015) Colloquium talk: Orbifold theory
- 102. Shantou University, China (May 6, 2016) Colloquium talk: Modular invariance in orbifold theory
- 103. Shanghai Tongji University, China (May 11, 2016) Colloquium talk: Congruence properties in conformal field theory
- 104. North East Normal University, China (May 20, 2016) Colloquium talk: Moonshine vertex operator algebra
- 105. Harbin Normal University, China (May 23, 2016) Colloquium talk: Lie algebras and their representations
- 106. Zhejiang University, China (July 21, 2016) Special talk: Quantum dimensions
- 107. Shanghai Jiaotong, China (April 13, 2017) Colloquium talk: Congruence properties in conformal field theory
- 108. Shanghai Jiaotong, China (April 14, 2017) Algebra seminar talk: Module category associated to vertex operator superalgebra
- 109. Shanghai Jiaotong, China (April 14, 2017) Algebra seminar talk: Module category associated to vertex operator superalgebra
- 110. North East Normal University, China (May 22, 2017) Colloquium talk: Affine Kac-Moody algebras and vertex operator algebras
- 111. Jilin University, China (May 23, 2017) Colloquium talk: Affine Kac-Moody algebras and vertex operator algebras
- 112. Tongji University, China (Aug. 5, 2017) Colloquium talk: 16-fold ways conjecture and vertex operator superalgebras
- 113. Nanjing University, China (Aug. 8, 2017) Colloquium talk: Vertex operator algebras and modular functions
- 114. Beijing Institute of Technology (Aug. 10, 2017) Colloquium talk: 16-fold ways conjecture and vertex operator superalgebras
- 115. Fushang Institute of Technology (Aug. 31, 2017) Colloquium talk: Vertex operator algebras and modular functions
- 116. Yangzhou University (Dec. 21, 2017) Colloquium talk: Hopf actions on vertex operator algebras
- 117. Xiamen University (Sept. 26, 2018) Colloquium talk: Hopf actions on vertex operator algebras
- 118. Central China Normal University (Nov. 15, 2018) Colloquium talk: Groups and vertex operator algebras

119. Wuhan University (Nov. 16, 2018)

Colloquium talk: Modularity in vertex operator algebras

#### **Invited Conference Talk**

1. International Symposium on Group Theory , Beijing, China (August 27–September 8, 1984) 20-min Talk: On full subgroups of twisted groups

- Special Session of the American Mathematical Society meeting, College of the Holy Cross, Worcester, Massachusetts (April 15–16, 1989)
   20-min Talk: A Jacobi identity for relative twisted vertex operators
- American Mathematical Society Summer Institute, Pennsylvania State University, University Park, Pennsylvania (July 8–28, 1991)
   Talk: The moonshine module vertex operator algebra and the Virasoro algebra with central charge 1/2
- Special Session of the American Mathematical Society meeting, Temple University, Philadelphia, Pennsylvania (October 12-13, 1991)
   20-min Talk: p-structure of the moonshine module
- Workshop on Lie groups, Lie algebras and their representations, University of California, Santa Cruz, CA (May 29-30, 1992)
   Hour Talk: Representations of the Monster algebra
- American Mathematical Society Summer Research Conference: Conformal Field theory, topological field theory, and quantum groups, Mount Holyoke College, South Hadley, MA (June 11-17, 1992)

Plenary Talk: The moonshine module vertex operator algebra

- 7. Workshop on Moonshine and related topics, University of Glasgow, Scotland (June 19-22,1992) 1 hour talk: declined
- 8. Workshop on Monster, Ohio State University, Columbus, Ohio (May 19-23, 1993) Plenary Talk: Representations of vertex operator algebras
- Special Session of the American Mathematical Society meeting, Syracuse University, Syracuse, New York (September 18-19, 1993)
   30-min Talk: Twisted representations of vertex operator algebras and orbifold theory
- Special Session of the American Mathematical Society meeting, Kansas State University, Manhattan, Kansas (March 25-26, 1994)
   20-min Talk: Modular-invariance of trace functions in orbifold theory
- 11. American Mathematical Society Summer Research Conference: The Monster, Moonshine and Related topics, Mount Holyoke College, South Hadley, MA (June 19-24, 1994) Plenary Talk: *The Galois theory for vertex operator algebra*
- 12. Conference: Vertex operator algebras and Moonshine, The Mathematical Science Research Institute, Kyoto University, Japan (September 5-9, 1994)
  Plenary Talk: Lectures on vertex operator algebras
- Special Session of the American Mathematical Society meeting, Greensboro, North Carolina (November 17-18, 1995)
   Talk: Twisted representations of vertex operator algebras

- 14. Second Columbus Monster conference, Ohio State University, Columbus, Ohio (May 23-26, 1996) Plenary Talk: Compact automorphism groups of vertex operator algebras
- 15. Workshop on Elliptic Cohomology and related topics, University of Glasgow, Scotland (January 27-31, 1997)

Plenary Talk: Vertex operator algebras and moonshine

- 16. Topical Workshop on Vertex Operator Algebras in Mathematics and Physics, National Institute for Theoretical Physics, University of Adelaide, Australia (September 8-10, 1997) Plenary Talk: Two lectures on Dual pairs in vertex operator algebras, associative algebras and vertex operator algebras.
- 17. Conference on representations of affine and quantum affine algebras and related topics, North Carolina State University (May 21-24, 1998)

Plenary Talk: Quantum Galois theory and dual pairs

18. International conference on representation theory, East China Normal University (June 29-July 4, 1998)

Plenary Talk: Monstrous moonshine and orbifold conformal field theory

- 19. The autumn meeting of the Swedish Mathematical Society, Lund (Oct. 2, 1998) Plenary Talk: Monstrous moonshine and vertex operator algebras
- 20. Workshop on vertex operator algebras, Osaka University, Japan (Nov. 25-26, 1998) 1 Hour Talk: Coset constructions and dual pairs for vertex operator algebras
- 21. UC Lie theory workshop, UCLA (Dec. 5-6, 1998)
  1 Hour Talk: Coset constructions and dual pairs for vertex operator algebras
- 22. Moonshine workshop, University of Montreal (May 29 -June 4, 1999)
  Plenary Talk: Vertex operator algebras, groups, modular forms and differential equations
- 23. National Conference on Algebra, Beijing Normal University, China (Oct. 10-14, 1999) Plenary Talk: *Holomorphic vertex operator algebras, quantum doubles and dual pairs*
- 24. Workshop on Combinatorial Algebra, Mathematical Science Research Institute, Berkeley (Jan. 10-14, 2000)

Plenary Talk: Vertex operator algebras and dual pairs

25. Conference on Infinite dimensional Lie theory and conformal field theory, University of Virginia (May 22 - 27, 2000)

Plenary Talk: Holomorphic vertex operator algebras of small central charges

26. Workshop on Lie theory, Pacific Institute for the Mathematical Sciences, University of Alberta (June 22 - 30, 2000)

Plenary Talk: Reductive Lie algebras and vertex operator algebras

27. Conference on Algebraic Combinatorics, Monster and Vertex Operator Algebras, UCSC (July 24-28, 2000)

Plenary Talk: Reductive Lie algebras and holomorphic vertex operator algebras

- 28. Symposium on Quantum Groups, Dunba, Rassia (July 31-Aug. 5, 2000) One Hour Talk: declined
- 29. Workshop on mathematical Physics, Morningside Center for Mathematics (Aug. 5-12, 2000) Plenary Talk: Reductive Lie algebras and vertex operator algebras

- 30. Special Session of the American Mathematical Society meeting, Toronto (September 23-24, 2000) 1 Hour Talk: Radicals of vertex operator algebras
- 31. Workshop on Vertex Operator Algebras in Mathematics and Physics, The Fields Institute for Mathematical Sciences (Oct. 23-27, 2000)

Plenary Talk: Vertex operator algebras and dual pairs

32. Symposia on Infinite Dimensional Lie Algebras, The Canidian Mathematical Society, Saskatoon (June 2-4, 2001)

50 Minute Talk: One point functions on torus

- 33. Workshop on Lie algebra, Morningside Center for Mathematics (June. 18-23, 2001) Plenary Talk: Monstrous moonshine and vertex operator algebras
- 34. The Symposium on algebraic combinatorics, Chiba University, Japan (July 2-4, 2001) Plenary Talk: Automorphism groups of vertex operator algebras
- 35. International workshop on integrable models, combinatorics and representation theory, The Mathematical Science Research Institute, Kyoto University, Japan (Aug. 12-16, 2001) Plenary Talk: *Lie algebras and vertex operator algebras*
- 36. Workshop on representations of loop groups, Institute of Pure and Applied Mathematics, UCLA (Nov. 12-16, 2001)

Plenary Talk: Elliptic genus and vertex operator algebras

- 37. Symposia on Infinite Dimensional Lie Algebras and related topics, The Canidian Mathematical Society, Toronto (Dec. 8-10, 2001) 1 hour Talk: declined.
- 38. String Theory Conference, Hangzhou, China (August 12-15, 2002) Invited talk: Vertex operator algebras and index theory
- 39. Symposia on Infinite Dimensional Lie Algebras and Moonshine, Ottawa (Dec. 8-10, 2002) 1 hour talk: *Moonshine and permutation orbifolds*
- 40. Workshop on Integration on Arc Spaces, Elliptic Genus and Chiral de Rham Complex, Banff International Research Station (June 14-19, 2003)

  1 hour talk: Introduction to vertex algebras
- 41. Conference on Infinite Dimensional Lie Algebras and Related Topics, Fields Institute (July 17-25, 2003)

4 lectures (4 hours) on vertex operator algebras and K-theory

- 42. Lie Algebra Conference, Xiamen (July 28 August 3, 2003) Invited talk (1 hour): Affine Kac-Moody algebras and vertex operator algebras
- 43. Algebra Workshop, Xiamen (August 4-5, 2003) 3 lectures on vertex operator representations of affine algebras
- 44. The Second East Asian Conference on Algebra and Combinatorics (Nov. 17-21, 2003), Kyushu University Invited Talk: C<sub>2</sub>-cofiniteness and integrability
- 45. Workshop on Tensor Category in Mathematics and Physics (June 21-July 2, 2004), Erwin Schrodinger Institute, Vienna Invited talk (90 minutes): Affine Kac-Moody algebras and vertex operator algebras

46. Moonshine - the First Quarter Century and Beyond, A Workshop on the Moonshine Conjectures and Vertex Algebras

(July 3-13, 2004), Edinburgh

2 Invited lectures (1 hour each): 1. Orbifold theory and moonshine; 2. Permutation orbifolds and moonshine

47. The Third International Representation Theory Conference (July 28-Aug. 4, 2004) Chengdu, China Invited talk (1 hour): Affine algebras and vertex operator algebras

- 48. Conference "Perspective arising from Vertex Algebra Theory" (Nov. 8-Nov. 12), Osaka, Japan Invited talk (80 minutes): Vertex operator superalgebras
- 49. Workshop on Vertex Operator Algebras and Conformal Field Theory (Dec. 12-16), Institute for Advanced Study in Mathematics and Physics, Chinese University of Sciences and Technology, Shanghai 3 Lectures on framed vertex operator algebras
- 50. The Third International Congress of Chinese Mathematicians (Dec. 17-Dec. 22, 2004), Hongkong Invited Talk (45 minutes): Vertex operator superalgebras
- 51. Conference "Lie Algebras, Vertex Operator Algebras and Their Applications" (May 17-21, 2005), Raleigh, North Carolina Invited Talk (1 hour): On the uniqueness of the moonshine VOA
- 52. Lie Algebra conference (July 11-15, 2005), Harbin, China Invited Talk: Vertex operator algebras and elliptic genus
- 53. The international conference "Mathematics: opportunity and Challenge" (July 22-29, 2005), Weihai, China Invited Talk (45 minutes): On the uniqueness of the moonshine VOA
- 54. Workshop on Generalized McKay correspondences and representation theory (March 20-24, 2006), MSRI Invited Talk (1 hour): Rationality of vertex operator algebras
- 55. Special Session of the American Mathematical Society meeting, San Francisco (April 29-30, 2006) 20 minute talk: Representations of vertex operator algebras
- 56. Workshop on vertex operator algebras and related topics, Tokyo University (Dec. 15, 2006) 1 hour talk: Rational vertex operator algebras are finitely generated
- 57. Workshop on Group theory and related topics, Mathematical Science Research Institute, Kyoto University, Japan (Dec. 18-21, 2006)
  Plenary Talk: Representation theory of vertex operator algebras
- 58. Workshop on Groups and symmetries: From the Neolithic Scots to John McKay, Centre De Recherches Mathématiques, Canada (April 27-29, 2007)
  Plenary talk: Rationality of vertex operator algebras
- 59. Workshop on Lie algebra, University of Science and Technology of China (July 9-11, 2007) 1 hour talk: A characterization of certain vertex operator algebras
- 60. The Forth International Conference on representation theory, Lhasa, China (July 16-20, 2007) Plenary talk: Representation theory for vertex operator algebras

- 61. Lie algebra Conference, Changshu, Chian (Aug. 10-16) Plenary talk: W-algebras and vertex operator algebras
- 62. The Forth International Congress of Chinese Mathematicians (Dec. 17-Dec. 22, 2007), Hangzhou, China Invited talk (45 minutes): The moonshine vertex operator algebra
- 63. Workshop on Quantum affine Lie algebras, extended affine Lie algebras, and applications (March 3-7, 2008), Banff, Canada Invited talk (45 Minutes): Rational vertex operator algebras are finitely generated
- 64. International conference on vertex operator algebras and related topics (July 7-11, 2008), Normal, Illinois Invited talk (1 hour): Rational vertex operator algebras with central charges 1.
- 65. Special Session of the American Mathematical Society and Chinese Mathematical Society joint meeting (Dec.17-21, 2008), Shanghai, China 30-min talk: Rational vertex operator algebras are finitely generated
- 66. Workshop on Lie theory (Dec. 25, 2008), Xiamen, China 1 hour talk: *Holomorphic vertex operator algebras with small central charges*
- 67. Lie Theory Workshop (May 2-3, 2009), University of Southern California 1 hour talk: Generators of vertex operator algebras
- 68. International Workshop on algebraic groups, quantum groups and related topics, Beijing University, China (July 18-22, 2009)

  1 hour talk: On the uniqueness of the moonshine vertex operator algebra
- 69. Workshop on Lie theory and representation theory, East China Normal University, China (July 20-22, 2009)
  1 hour talk: C<sub>2</sub>-cofinite vertex operator algebras
- 70. International conference on cohomology and representation theories, Zhejiang University, China (July 20-22, 2009)

  1 hour talk: Classification of rational vertex operator algebras with central charge 1
- 71. Lie theory workshop, Huzhou Normal University, China (Dec. 25-26, 2009) 1 hour talk: A characterization of vertex operator algebra  $L(1/2,0) \otimes L(1/2,0)$ .
- 72. International Mathematics Forum, Chengdu, China (August 9-12, 2010) Plenary talk: Quantum dimensions and quantum Galois theory
- 73. Lie theory workshop, Changshu Institute Science and Technology (August 19, 2010) Half hour talk: Automorphisms and derivations of vertex operator algebras
- 74. Workshop on vertex operator algebras, finite groups and combinatorics, Kyoto University (Dec. 13-17,2010)
  One hour talk: Quantum dimensions and quantum Galois theory
- 75. Workshop on Lie theory, Changshu Institute Science and Technology (July 19. 2011) Half hour talk: Regularity and  $C_2$ -cofiniteness
- 76. Workshop on representation theory, Sichuan University (August 21, 2011) Half hour talk: On classification of rational vertex operator algebras with c=1

77. Symposium on Conformal Field Theory, Automorphic Forms and Related Topic, Heidelberg, Germany (Sept. 19-23, 2011)

One hour talk: Regularity of vertex operator algebras

78. Conference on Vertex Operator Algebras, Finite groups and Related topics, Taipei (Dec. 18-22, 2011)

One hour talk: Classification of rational vertex operator algebras with c=1

- 79. Conference on Finite Groups and Vertex Operator Algebras, Tokyo (Feb. 17-18, 2012) One hour talk: *Mirror extensions of vertex operator algebras*
- 80. The XXIX International Colloquium on Group-Theoretical Methods in Physics, Tianjing (Aug. 20-26, 2012)

Half hour talk: The trace functions of rational vertex operator algebras are modular

81. Conference on Groups, VOAs and Related Structures in Honor of Masahiko Miyamoto, Tokyo (September 10 - 14, 2012)

One hour talk: Modularity of trace functions

- 82. The Third International Symposium on Groups, Algebras and related topics in Beijing, celebrating the 50th anniversary of the Journal of Algera, Beijing (June 10-16, 2013)
  45 minute talk: Quantum dimensions and quantum Galois theory
- 83. The 6th International Conference on Representation Theory, Zhangjiajie, China (June 18-23,2013) One hour talk: Modular invariance of rational vertex operator algebras
- 84. RIMS camp-style seminar, Beyond the Moonshine, Sendai, Japan (July 8-12, 2013)

  One hour talk: Vertex operator algebras associated to the Virasoro algebra over any field
- 85. Workshop on Mock Modular Forms, Moonshine and String theory, Simons Center for Geometry and Physics, Stony Brook (August 26-30, 2013)
  Invited Speaker (declined)
- 86. Workshop on Majorana Theory, the Monster and Beyond, Imperial College (Sept. 15-21, 2013) Invited Speaker (declined)
- 87. Workshop on Lie Groups, Lie Algebras and their Representations, Stanford University (Feb. 1-2, 2014)

Invited Speaker (declined)

- 88. Workshop on Finite Groups, VOA, algebraic combinatorics and related topics, Hualian, Taiwan (March 20-23, 2014)
  40 minute talk: On classification of rational vertex operator algebra with c=1
- 89. The Twelfth Annual Spring Institute Noncommutative Geometry and Operator Algebras: Subfactors, Conformal Field Theory and Vertex Operator Algebras, Vanderbilt University (May 2-8, 2014)

50 minute talk: On classification of rational vertex operator algebra with c=1

90. Workshop on Lie Theory and Mathematical Physics, CRM, Universite de Montreal (May 19-23, 2014)

One hour talk: Quantum dimensions

91. International Conference "Operator Algebras and Mathematical Physics," Dalian, China (June 14-17, 2014)

50 minute talk: Representations of Parafermion vertex operator algebras

- 92. International Conference "Group Theory and Related Topics," Beijing, China (June 26-30, 2014) 45 minute talk: Automorphisms of vertex operator algebras
- 93. Workshop on Vertex Operator Algebra, Harbin Normal University, China (Jan. 12-14, 2015) 40 minute talk: Coset construction and Schur-Weyl duality
- 94. Taitung Workshop on Group, VOA and algebraic Combinatorics, Taiwan (March 7-10, 2015) 40 minutes: Dual pairs and Schur-Weyl duality
- 95. Workshop on Lie Theory and Representation Theory IV, East China Normal University (July 2-4, 2015) Invited talk: On orbifold theory
- 96. International Conference "Lie Algebras, Vertex Operator Algebras, and Related Topics," Notre Dame (August 14-18, 2015) Plenary talk: Parafermion vertex operator algebras
- 97. Workshop on Operator Algebras and Mathematical Physics, Dalian (August 25-27, 2015) Invited talk: Quantum dimensions and fusion rules of parafermion vertex operator algebras
- 98. Workshop on Vertex algebras and Quantum Groups, Banff (Feb. 8-12, 2016) Invited talk: *Orbifold theory*
- 99. Workshop on Group, VOA and Algebraic Combinatorics, Yilan, Taiwan (March 21-25, 2016) Invite Talk: Permutation orbifolds
- 100. Workshop on Vertex Operator Algebra, Shanghai Normal University, China (March 26-28, 2016) Invite Talk: Permutation orbifolds
- 101. Workshop on Modular Lie Algebras and Vertex Operator Algebras, East China Normal University, China (April 15-17, 2016)
  Invite Talk: Modular framed vertex operator algebras
- 102. Lie Theory Workshop, Changshu, China (April 23-25, 2016) Invite Talk: *Modular framed vertex operator algebras*
- 103. Mini Conference on Representation Theory Shenzhen, China (July 8, 2016) Invited talk: *Modular invariance in orbifold theory*
- 104. Workshop on Modular Categories—Their Representations, Classification, and Applications, Banff Center, Oaxaca, Mexico (Aug. 15-19, 2016)
  Invited talk: On orbifold theory
- 105. Conference in Finite groups and vertex algebras, Taipei, Taiwan (Aug. 22-26, 2016) Invited talk:  $Permutation\ orbifolds$
- 106. AMS meeting special session (Vertex Operator Algebras and Geometry), Denver University (Oct. 8-9, 2016)
   Invited Talk: Modular framed vertex operator algebras
- 107. Workshop on Finite Groups, Algebraic Combinatorics and Vertex Operator algebras, RIMS Kyoto University (Dec. 5-8, 2016) Invited Talk: Modular invariance in rational orbifold theory
- 108. Mathematical Physics and Subfactors, Sanya International Mathematics Forum (Dec. 18-23, 2016)
   Invited Talk: Modular invariance in rational orbifold theory

- 109. The Legacy of Emmy Noether and Gottingen Mathematics, Sanya International Mathematics Forum (Dec. 18-23, 2016) Invited Talk: Modular framed vertex operator algebras
- 110. Lie Theory Workshop, Shanghai Maritime University (April 1, 2017) Invited Talk: Congruence subgroup property in rational orbifold theory
- 111. International Conference on Lie Theory and Applications, Jinan (April 27-May 2, 2017) Invited Talk: Congruence subgroup property in rational orbifold theory
- 112. International Conference Representation Theory XV UC, Dubrovnik, Croatia (June 18 C 25, 2017)
  Invite Talk: 16-fold ways conjecture and vertex operator superalgebras
- 113. Lie Theory conference, Suzhou (Aug. 6-7, 2017) Invite Talk: 1. 16-fold ways conjecture and vertex operator superalgebras, 2. Fusion product of twisted modules for permutation orbiofolds
- 114. Conference on Operator Algebra and Mathematical Physics, Dalian (Sept. 14-18, 2017) Invite Talk: Fusion products of twisted modules in permutation orbifolds
- 115. Workshop on Affine, vertex and W-algebras, INdAM, Rome, Italy (Dec. 11-15, 2017) Invited Talk: Hopf actions on vertex operator algebras
- 116. Conference "Vertex Operator Algebras, Number Theory and Related Topics," Sacramento State University (June 11-15, 2018)
  Invited Talk: 16 fold ways conjecture and vertex operator superalgebras
- 117. Conference "Vertex operator algebras and symmetries," RIMS, Kyoto University (July 9-13, 2018) Invited talk: Hopf actions on vertex operator algebras
- 118. The fifth Lie theory and representation theory workshop, East China Normal University (July 35-27, 2018)
  Invited talk: 16 fold ways conjecture and vertex operator superalgebras
- 119. Group theory conference, Lanzhou University (Aug. 18-20, 2018) Invited talk: A survey on monstrous moonshine
- 120. East Asian representation theory conference (Nov. 30-Dec. 2, 2018) Invited talk: Orbiford theory

### Visiting Positions

1994 (Sept)	Visiting A	Associate	Professor.	Hitotsubashi	University

Japan

2000 (June-Sept) Kan Tong Po Royal Society Visiting Professor

Chinese University of Hong Kong

2000 (Fall) Visiting member, The Fields Institute for Research

in Mathematical Sciences, Canada

2001 (July-Aug) Invitation Fellow, Japan Society for the Promotion of Science

Osaka University, Japan

2002 (Spring) Visiting member, Mathematical Science Research Institute

Berkeley

2003 (March) Visiting member, IHES

2004 (July-Aug)
2005 (June-July)
2007 (July-Aug)
2008 (July-Aug)
2009 (July)
2009 (July)
2009 (July)
2000 (August)

Visiting Professor, Institute of Mathematics, Chinese Academy
Changjiang Visiting Chair Professor, Sichuan University, China

2011 (March-April) Gehring Visiting Professor, University of Michigan

2018 (June-Sept.) Visiting Professor, Rims, Kyoto University

#### Editor

Moonshine, The Monster and Related Topics, Contemporary

Math. 193, AMS 1996.

2000-present Algebra Colloquium, (2011-2016, Deputy Editors-in-Chief, 2017-present Chief Editor)

2009 Recent Developments in Algebra and Related Areas

Advanced Lectures in Mathematics, 8, 2009

2013-present SCIENCE CHINA Mathematics

#### Service to Professional Journals (referee)

Algebra Colloquium

Algebra and Representation Theory

American Journal of Mathematics

Annals of Mathematics

Communication in Algebra

Communications in Mathematical Physics

Compositio Mathematica

Contemporary Mathematics

Duke Math. Journal

International Math. Research Notices

Israel Journal of Mathematics

Journal of the European Mathematical Society

Journal of Algebra

Journal of Math. Phys.

Journal of Pure and Applied Algebra

Journal of the Mathematical Society of Japan

Mathematics Review

Mathematische Zeitschrift

Memoirs, AMS

Nuclear Physics

Pacific Journal of Mathematics

Proceedings of AMS
Proceedings of the London Mathematical Society
SIGMA
Transactions of AMS

## Grant reviewers

NSF NSF Panel, 2007, 2008, 2010, 2011 NSA NSA Panel, 2015 Natural Sciences and Engineering Research Council of Canada National Science Foundation of China

# Organizer of Professional Meeting

1994 (June)	Co-chair, AMS Summer Research Conference "Moonshine, the monster, and related topics,"
1006 (Das)	Mount Holyoke College, Massachusetts Organizar, U.C. Lie theory, workshop, Santa Cruz
1996 (Dec)	Organizer, UC Lie theory workshop, Santa Cruz
1997 (May)	Co-chair, AMS Meeting 992, Special Session
	"VOAs, Monstrous moonshine and related topics,"
1000 (Amril)	Wayne State University, Michigan
1998 (April) 1998 (July)	Organizer, UC Lie Theory Workshop, Santa Cruz
1996 (July)	Member, Scientific Committee The International Conference on Representation Theory
	East China Normal University
1999 (April)	Organizer, UC Lie Theory Workshop, Santa Cruz
1999 (April) 1999 (Oct.)	Member, Scientific Committee
1999 (Oct.)	National Conference on Algebra VII
	Beijing Normal University, China
2000 (April)	Organizer, UC Lie Theory Workshop, Santa Cruz
2000 (April) 2001 (April)	Organizer, UC Lie Theory Workshop, Santa Cruz
2001 (April) 2001 (June)	Organizer, Workshop on Lie Algebras and Related Topics,
2001 (Julie)	Morningside Center, China
2002 (April)	Organizer, UC Lie theory workshop, Santa Cruz
2002 (April) 2003 (April)	Organizer, UC Lie theory workshop, Santa Cruz
2003 (April) 2003 (Aug.)	Organizer, Lie algebra conference, Xiamen, China
2003 (Aug.) 2003 (Oct.)	Organizer, AMS Meeting 990, Special Session
2003 (Oct.)	Lie Algebras, Conformal Field Theory, and Related Topics
	Binghamton, NY
2004 (July)	Organizer, Lie Theory Conference, Beijing, China
2004 (July-Aug.)	Member of Scientific Committee, The Third International
2001 (buly 11ug.)	Representation Theory Conference, Chengdu, China
2004 (Nov.)	Organizer, Workshop on vertex operator algebras
2001 (1.011)	Osaka, Japan
2005 (July)	Organizer, Lie algebra conference, Harbin, China
2007 (July)	Member of Scientific Committee, The Fourth International
(	Representation Theory Conference, Lhasa, China
2007 (Aug.)	Chair of Scientific Committee, International Conference on
	Algebras and Related areas, Beijing, China
2010 (Summer)	Member of Advisor Committee QFT, String Theory &
, (4.44	Mathematical Physics Program,
	Kavli Institute for Theoretical Physics, Beijing.
2010 (Dec.)	Organizer, Workshop on vertex operator algebras, finite groups
,	and combinatorics, Kyoto, Japan
2011 (Dec.)	Organizer, Conference on Vertex Operator Algebras, Finite groups
,	and Related topics, Taipei
2013 (June)	Member of Scientific Committee, The 6th International Conference
,	on Representation Theory, Zhangjiajie, China
2013 (July)	Organizer, The Lie Algebra Conference, Chengdu, China
2014 (Feb)	Organizer, Vertex Operator Algebra workshop, Beijing, China
2014 (July)	Organizer, The Lie Theory Workshop, Chengdu, China
2015 (Jan.)	Organizer, Vertex Operator Algebra workshop, Harbin, China
2015 (Sept.)	Organizer, International Conference on Vertex Operator Algebras
,	and Related Topics, Chengdu, China
2016 (May)	Organizer, Workshop on Lie Theory and Representation Theory, Chengdu, China
2016 (July)	Member of Scientific Committee, The 7th International Conference
. • /	on Representation Theory, Xiamen, China
2018 (April-Dec.)	Organizer, RIMS Research Project 2018, Vertex Operator Algebra and Symmetries
/	25

#### **TEACHING**

Postdocto	or
2002	Tashiyuki Abe
2008	Lu Ding
2010	Jiayuan Fu, Wei Jiang, Bin Xin, Hengyun Yang
Ph.D Stu	dent (past)
2001	Gail Yamskulna (Associate Professor, Department of Mathematics
	Illinois State University)
2003	Geoffrey Buhl (Tenure Track Assistant Professor, Department of Mathematics
	California State University, Channel Islands)
2006	Leif Jordan (Lecture, Department of Mathematics, Fresno State University)
2007	Zhongping Zhao(Analyst, Kaiser Insurance)
2008	Wei Zhang (Assistant Professor with tenure, Beijing University of Science and
	Technology, China)
2011	Min Xue (Analyst, Citi Bank)
2011	Jiazhi Han (Exchanged Ph.D. student from China, Tenure track Assistant Professor,
	Tongji University)
2013	Xiangyu Jiao (Tenured Associate Professor, East China Normal University
	China)

Nina Yu (Tenure track Assistant Professor, Xiamen University)

Liuyi Zhang (Assistant Professor Henan University of Science and Technology, China)

## **Master Students**

1993 David Bond

#### Ph.D Students (current)

- 2011 Liuyi Zhang (Ph.D. candidate)
- 2012 Danquynh Nguyen (Ph.D. candidate)
- 2015 Yiyi Zhu, Charles Petersen

# Independent Study Students

- 1992 One undergraduate and six graduate students
- 1994  $\,$  Advised three undergraduate students to do senior thesis
- 1995 Three undergraduate students
- 1996 One undergraduate student
- 1997 Two undergraduate and six graduate students
- 1998 One undergraduate and two graduate students
- 1999 Two graduate students
- 2000 Three graduate students
- 2001 One undergraduate student
- 2002  $\,$  Three undergraduate students and three graduate students
- 2003  $\,$  Two undergraduate students and two graduate students
- 2007 One graduate student
- 2008 Two undergraduate students.

# Extra Teaching

- 1999 (S) Seminar course for graduate students
- 2001 (W) Teach a homework section (weekly for 1 hour) for Math 201 (there was no TA for this class)
- 2001 (F) Teach a homework section (weekly for 1.3 hours) for Math 200 (there was no TA for this class)
- 2002 (F) Teach a homework section (weekly for 1 hour) for Math 225 (there was no TA for this class)
- 2003 (S) Teach homework sections (weekly for 1.5 hours) for Math 202 and Math 226B (there were no TAs for both classes)
- 2005 (S) Teach homework sections (weekly for 1 hour) for Math 202.
- 2006 (S) Teach homework sections (weekly for 1.5 hour) for Math 220A.
- 2010 (W) Teach homework sections (weekly for 1.5hour) for Math 201.

## Seminar Organizer

1994 (F)	Vertex Operator Algebra Seminar
1996 (F)	Conformal Field Theory Seminar
1999 (W)	Algebra Seminar
2001 (F)	Mathematical Physics Seminar
2002 (F)	Vertex Operator Algebra Seminar
2003 (Summer)	Vertex Operator Algebra Seminar
2003 (F)	Vertex Operator Algebra Seminar
2005 (F)	Vertex Operator Algebra Seminar
2008 (F)	Vertex Operator Algebra Seminar
2009 (W,S, F)	Vertex Operator Algebra Seminar
2010 (W, S, F)	Vertex Operator Algebra Seminar
2011 (W, F)	Vertex Operator Algebra Seminar
2015 (F)	Vertex Operator Algebra Seminar
2016 (W)	Vertex Operator Algebra Seminar

## Member of Oral Committees and Thesis Defense Committee(Graduate Students)

- 1992-1994 Yves Martin, Julia Glass, Nancy Allen (Mathematics)
- 1995 Christopher Goff (Mathematics)
- 1997 Rong Li (Physics)
- 1998 Dan Lawson (Mathematics)
- 1999 Gail Yamskulna (Mathematics)
- 2000 Geoffrey Buhl (Mathematics), Jose Renteria (Computer Science)
- 2003 Zhongping Zhao (Mathematics), Zheng Sun (physics),
  - Erik Kramer (physics)
- 2004 Leif Jordan, Wei Zhang (Mathematics)
  - Dan Kong (Computer Engineering)
- 2005 Abraham Berman, James Bass (Mathematics)
- 2006 Jennifer Mogel, Glesser Adem (Mathematics)
- 2007 Christopher Marks, Zhongping Zhao (Mathematics)
  - Feng Tang, Qi Zhao (Computer Science)
- 2008 Maisch Filix, Jennifer Mogel, Wei Zhang (Mathematics)
- 2009 Min Xue, Christopher Marks (Mathematics)
- 2010 Weitao Wu (Physics)
  - Xiangyu Jiao, Kayden Krauel, Nina Yu (Mathematics)
- 2011 Rob Laber (Mathematics)
- 2013 Liuyi Zhang (Mathematics)
- 2016 Danquynh Nguyen (Mathematics)