# Curriculum Vitae: Chin-Lung Wang

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**Chin-Lung Wang (Dragon, 王金龍)**

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**Education**

- *Harvard University*, Cambridge, Massachusetts. Ph.D. in Mathematics, 1993–1998. Advisor: Shing-Tung Yau. Dissertation: *Topology of binational manifolds and applications to degenerations*.
- *National Taiwan University*, Taipei, Taiwan. B.A. in Mathematics, 1986–1990.

**Occupation**

- *Professor* at National Taiwan University since August 2008.
- *Professor* at National Central University, August 2004 to July 2008.
- *Associate Professor* at National Central University, February 2004 to July 2004.
- *Associate Professor* at National Tsing-Hua University, August 2001 to January 2004.
- *Assistant Professor* at National Tsing-Hua University, August 2000 to July 2001.
- *Assistant Professor* at National Taiwan University, August 1998 to July 2000.

**Selected Visiting**

- *IMS at CUHK*, January 2019.
- *Academy of Mathematics and System Sciences at Beijing*, March 2016.
- *National University of Singapore*, January 2011.
- *University of Utah*, July to August 2010.
- *Université de Nantes*, April 2008.
- *Tokyo University*, December 2007.
- *IHES*, July 2006.
- *IMS at CUHK*, February and December 2006.
- *Nagoya University*, November 2005.
- *Oberwolfach Mathematics Institute*, April 2004.
- *Hong Kong University of Science and Technology*, October 2002.
- *The Chinese University of Hong Kong*, September 2001.
- *Harvard University*, February to May 2001.
- *University of Essen*, January 2000.
- *University of Pennsylvania*, September 1999.

**Mathematical Research Interests**

*Algebraic Geometry, Differential Geometry, and Hodge Theory.*

**Selected Recent Talks**

1. September 2012, "*Mathematical Society of Japan, 2012 Autumn Meeting*" at Kyushu University, Fukuoka, featured invited talk
2. July 2013, "*The Sixth International Congress of Chinese Mathematicians*" at National Taiwan University, Taipei, plenary speaker
3. March 2014, "*The 6$^{th}$ TIMS-OCAMI-WESEDA Joint International Conference on Integrable Systems and Mathematical Physics*" at National Taiwan Unievrsity, Taipei
4. August 2014, "*60 Years After Calabi Conjecture, a Conference in Honor of Professor Shing-Tung Yau's 65$^{th}$ Birthday*" at Tsinghua University, Beijing
5. July 2015, "*Uniformazations, Riemann—Hilbert Correspondence, Calabi—Yau Manifolds, and Picard—Fuchs Equations*" at Institut Mittag-Leffler, Sweden
6. September 2015, *"The Algebraic and Arithmetic Geometry Conference AGAG 2015"* at University of Science and Technology of China, Hefei
7. October 2015, "*Workshop on Algebraic Geometry AG2015"* at Fudan University, Shanghai
8. January 2016, *"String-Math 2015 Conference, December 31, 2015 - January 4, 2016"* at Tsinghua Sanya International Mathematcs Forum (TSIMF), Sanya, plenary speaker
9. March 2016, "*Institute Lecture Series #50*" at Academy of Mathematics and System Sciences, Chinese Academy of Sciences, Beijing
10. March 2016, "*4th Beijing Algebraic Geometry Colloquium*" at Academy of Mathematics and System Sciences, Beijing
11. July 2016, *"Workshop on Global Mirror Symmetry"* at Chern Institute, Nankai
12. November 2016, "*Institute of Mathematics Colloquium*" at Academia Sinica, Taipei
13. April 2017, "*Perspectives of Mathematics in the 21st Century: Conference in Celebration of the 90th Anniversary of Mathematics Department of Tsinghua University*", Beijing
14. May 2017, "*The Algebraic and Arithmetic Geometry Conference (AGAG 2017)*" at University of Science and Technology of China, Hefei
15. December 2017, "*International Conferences on Algebraic Geometry*: Organizers: C. Birkar and S.-T. Yau" at Tsinghua University, Beijing
16. December 2017, "*The first ICCM annual meeting*" at Guangzhou, plenary speaker
17. December 2018, "*40 Years of Calabi—Yau Theor*y" at Jiaoling, Guangdong
18. December 2018, "*The second ICCM annual meeting*" at Taipei, plenary speaker
19. January 2019, "*Mathematics inspired by String Theory*: *Introduction to the quantum invariance problem I, II, III*" at Institute of Mathematical Sciences, CUHK, lecture series speaker
20. July 2019, "*Calabi—Yau and Geometry*'' at IMS, CUHK

**Recent Honors**

- Academic Award, Ministry of Education, 2008
- National endowed chair professor, Ministry of Education, 2009
- National Taiwan University Chair Professor, since 2012
- ICCM Best Paper Award 2017, 2018
- NTU Shih, Kung-Sing Memorial Professorship, 2019—2024

**Current Academic Services**

- Asian Journal of Mathematics, editor
- Pure and Applied Mathematics Quarterly, editor

**Research Works** (all are available on my webpage)

1. *On the incompleteness of the Weil-Petersson metric along degenerations of Calabi-Yau manifolds*, Math. Res. Lett. 4 (1997), 157–171.
2. *On the topology of birational minimal models*, J. Differential Geometry 50 (1998), no.1, 129–146, arXiv:math/9804050.
3. (with B. Hassett and H.-W. Lin) *Weak Lefschetz principle is false for ample cone*, Asian J. of Math. 6 (2002), 95–100.
4. *Cohomology theory in birational geometry*, J. Differential Geometry 60 (2002), no.2, 345–354.
5. *K-equivalence in birational geometry and characterizations of complex elliptic genera*, J. Algebraic Geometry 12 (2003), no. 2, 285–306, arXiv:math/0103063.
6. *Quasi-Hodge metrics and canonical singularities*, Math. Res. Lett. 10 (2003), 57–70, arXiv:math/0211456.
7. *Curvature properties of the Calabi-Yau moduli*, Documenta Mathematica 8 (2003), 577–590.
8. *K-equivalence in birational geometry*, in "Proceeding of the Second International Congress of Chinese Mathematicians, Taipei 2001", 199-216, New Stud. Adv. Math. 4, Int. Press, Somerville MA, 2004. arXiv:math/0204160.
9. (with B. Fu) *Motivic and quantum invariance under stratified Mukai flops*, J. Differential Geometry 80 (2008), no.2, 261–280, arXiv:0801.3551.
10. (with Y.-P. Lee and H.-W. Lin) *Flops, motives and invariance of quantum rings*, Annals of Math. 172 (2010), no.1, 243-290, arXiv:math/0608370.
11. (with C.-S. Lin) *Elliptic functions, Green functions and the mean field equations on tori*, Annals of Math. 172 (2010), no.2, 911-954, arXiv:math/0608358.
12. (with C.-S. Lin) *A function theoretic view of the mean field equations on tori*, in "Recent advances in geometric analysis", 173-193, Adv. Lect. Math. 11, Int. Press, Somerville MA, 2010.
13. *Quantum invariance under flop transitions*, in "Proceeding of Geometric Analysis: Present and Future, a conference in honor of Professor Shing-Tung Yau's 60th birthday (Harvard University, Cambridge 2008)", 347-370, Adv. Lect. Math. 18, Higher Ed. Press and Int. Press 2010.
14. (with C.-Y. Chi and S.-S. Wang) *Extensions of multiply twisted pluri-canonical forms*, Pure Appl. Math. Quarterly 7 (2011), no.4, 1129-1164, special issue dedicated to Eckart Viehweg. arXiv:1101.2077.

15. (with Y.-P. Lee and H.-W. Lin) *Analytic continuations on quantum cohomology*, in "Proceeding of the Fifth International Congress of Chinese Mathematicians, Beijing 2010", 269–282, AMS/IP Studies in Advanced Mathematics, Volume 51, 2012.
16. (with Y. Iwao, Y.-P. Lee and H.-W. Lin) *Invariance of Gromov-Witten theory under a simple flop*, J. reine. angew. Math. 663 (2012), 67–90, (arXiv:0804.3816 for the original version containing examples).
17. (with Y.-P. Lee and H.-W. Lin) *Invariance of quantum rings under ordinary flops I: Quantum corrections and reduction to local models*, Algebraic Geometry 3 (2016), no.5, 578–614. arXiv:1109.5540.
18. (with Y.-P. Lee and H.-W. Lin) *Invariance of quantum rings under ordinary flops II: A quantum Leray—Hirsch theorem*, Algebraic Geometry 3 (2016), no.5, 615–653. arXiv:1311.5725.
19. (with C.-L. Chai and C.-S. Lin) *Mean field equations, hyperelliptic curves, and modular forms I*, Cambridge J. Math. 3 (2015), no.1-2, 127–274. arXiv:1502.03297.
20. (with Y.-P. Lee, H.-W. Lin and F. Qu) *Invariance of quantum rings under ordinary flops III: A quantum splitting principle*, Cambridge J. Math. 4 (2016), no.3, 333–401. arXiv:1401.7097.
21. (with C.-S. Lin) *Mean field equations, hyperelliptic curves, and modular forms II, with an appendix by You-Cheng Chou*. J. de l'Ecole polytechnique - Mathematiques, Tome 4 (2017), 557—593. arXiv:1502.03295.
22. (with C.-S. Lin) *On the minimality of the extra critical points of Green functions on flat tori*, Int. Math. Res. Notices 2017, no. 18 5591—5608.
23. (with Y.-P. Lee and H.-W. Lin) *Quantum cohomology under binational maps and transitions*, in "Proceeding of String-Math 2015 at TSIMF, Sanya", AMS Proceedings of Symposia in Pure Mathematics 96 (2017), 149—168.
24. (with Z. Chen, T.-J. Kuo and C.-S. Lin) *Green functions, Painlev'e VI equation, and Eisenstein series of weight one*, J. Diff. Geom. 108 (2018), no. 2, 185—241. mathscidoc:1608.08002.
25. (with Y.-P. Lee and H.-W. Lin) *Towards A + B theory in conifold transitions for Calabi—Yau threeforlds*, J. Diff. Geom. 110 (2018), no. 3, 495—541. arXiv:1502.03277.
26. *Aspects on Calabi—Yau moduli*, in "Proceeding of Uniformizations, Riemann—Hilbert correspondence, Calabi--Yau manifolds, and Picard--Fuchs equations, Mittag--Leffler Institute 2015". Advanced Lectures in Mathematics 42 (2018), 529—552.
27. (with C.-S. Lin) *Geometric quantities arising from bubbling analysis of mean field equations*, to appear in Comm. Anal. Geom. arXiv:1609.07204.
28. *Algebraic methods in periodic singular Liouville equations,* to appear in "Proceeding of the First ICCM Annual Meeting, Guangzhou 2017".
29. (with Y.-P. Lee and H.-W. Lin) *Quantum flips I: Local model*, to appear in ``Dubrovin memorial volume'', AMS Proceedings of Symposia in Pure Mathematics. arXiv: 1912.03012.
30. (with Y.-P. Lee and H.-W. Lin) *A blow-up formula in GW theory,* in preparation.