

Curriculum Vitae (March 17, 2025)

Family Name: Iritani
Given Name: Hiroshi
Date of Birth: 13 October 1979
Place of Birth: Toyonaka, Osaka, Japan
Nationality: Japanese
Email: iritani@math.kyoto-u.ac.jp
Affiliation: Department of Mathematics, Graduate School of Science, Kyoto University
Kitashirakawa-Oiwake-cho, Sakyo-ku, Kyoto, 606-8502, Japan

Education:

1998–2001 Kyoto University, Faculty of Science
2001–2003 Kyoto University, Department of Mathematics, Graduate School of Science.
Awarded the degree of M.Sc. in Mathematics.
2003–2005 Kyoto University, Department of Mathematics, Graduate School of Science.
Mar 2005 Awarded the degree of Ph.D. in Mathematics.
Thesis title: “*Quantum D-modules and equivariant Floer theory for free loop spaces*”.
Thesis adviser: Hiraku Nakajima

Research and Professional Experience:

Apr 2003 – Mar 2005 JSPS Research Fellow (DC1)
Apr 2005 – Mar 2006 JSPS Research Fellow (PD)
Jan – May 2006 MSRI program “*New topological structures in physics*”
Apr 2006 – Sep 2006 JSPS Research Fellow (PD)
Oct 2006 – March 2010 Assistant Professor, Kyushu University
Oct 2007 – Sep 2009 Research Associate, London Imperial College
Apr 2010 – March 2018 Associate Professor, Kyoto University
Apr 2018 – present Professor, Kyoto University

Fellowships and Awards:

2003 Grant-in-Aid for Scientific Research 15-5482
2006 Grant-in-Aid for Scientific Research 18-10158
2007 Inoue Research Award for Young Scientists
2007 Grant-in-Aid for Young Scientists (B) 19740039
2009 MSJ Takebe Katahiro Prize
2010 Grant-in-Aid for Young Scientists (B) 22740042
2011 The Young Scientists’ Prize
2013 Grant-in-Aid for Scientific Research Kiban-(C) 25400069
2015 MSJ Geometry Prize
2016 MSJ Spring Prize
2017 JSPS Prize
2016 Grant-in-Aid for Scientific Research Kiban-(C) 16K05127
2020 Grant-in-Aid for Scientific Research Kiban-(C) 20K03582
2023 Grant-in-Aid for Scientific Research Kiban-(B) 23H01073

Papers (published):

- (1) [Hiroshi Iritani](#), *Quantum D-modules and equivariant Floer theory for free loop spaces*. *Mathematische Zeitschrift*, 2006, vol 252, no.3, pp.577–622.
- (2) [Hiroshi Iritani](#), *Convergence of quantum cohomology by quantum Lefschetz*. *Journal für die Reine und Angewandte Mathematik*, 2007, vol 610, pp.29–69.
- (3) [Hiroshi Iritani](#), *Quantum D-modules and generalized mirror transformations*. *Topology*, 2008, vol 47, no.4, pp.225–276.

- (4) Tom Coates, Hiroshi Iritani, Hsian-Hua Tseng, *Wall-crossings in toric Gromov-Witten theories I, Crepant examples*. *Geom. Topol.* 13 (2009), no.5, pp.2675–2744.
- (5) Tom Coates, Alessio Corti, Hiroshi Iritani, Hsian-Hua Tseng, *Computing genus zero twisted Gromov-Witten invariants*. *Duke Math. J.* 147 (2009), no. 3, pp.377–438.
- (6) Hiroshi Iritani, *An integral structure in quantum cohomology and mirror symmetry for toric orbifolds*. *Adv. Math.* 222 (2009), no. 3, pp.1016–1079.
- (7) Hiroshi Iritani, *Ruan’s conjecture and integral structures in quantum cohomology*. *New Developments in Algebraic Geometry, Integrable Systems and Mirror Symmetry (RIMS, Kyoto, 2008)*, *Adv. Stud. Pure Math.* 59 (2010), pp.111–166.
- (8) Hiroshi Iritani, *Quantum Cohomology and Periods*. *Ann. Inst. Fourier (Grenoble)* 61 (2011), no.7, pp.2909–2958.
- (9) Eduardo Gonzalez, Hiroshi Iritani, *Seidel elements and mirror transformations*. *Selecta Math. (N.S.)* 18 (2012), no. 3, pp.557–590.
- (10) Tom Coates, Amin Gholampour, Hiroshi Iritani, Yunfeng Jiang, Paul Johnson, Cristina Manolache, *The quantum Lefschetz hyperplane principle can fail for positive orbifold hypersurfaces*. *Math. Res. Lett.* 19 (2012), no.5, pp.997–1005.
- (11) Alessandro Chiodo, Hiroshi Iritani, Yongbin Ruan, *Landau-Ginzburg/Calabi-Yau correspondence, global mirror symmetry and Orlov equivalence*. *Publ. Math. Inst. Hautes Études Sci.* 119 (2014) pp.127–216.
- (12) Hiroshi Iritani, Todor Milanov, Valentin Tonita, *Reconstruction and Convergence in Quantum K-Theory via Difference Equations*. *Int. Math. Res. Not. Volume 2015, Issue 11,* (2015) pp.2887–2937
- (13) Tom Coates, Hiroshi Iritani, *On the Convergence of Gromov-Witten potentials and Givental’s formula*. *Michigan Mathematical Journal*, Volume 64, Issue 3 (2015), pp.587–631.
- (14) Tom Coates, Alessio Corti, Hiroshi Iritani, Hsian-Hua Tseng, *A Mirror Theorem for Toric Stacks*, *Compositio Math.* 151 (2015), pp.1878–1912.
- (15) Tom Coates, Hiroshi Iritani, Yunfeng Jiang, Ed Segal, *K-Theoretic And Categorical Properties of Toric Deligne–Mumford Stacks*, *Pure and Applied Mathematics Quarterly*, Vol. 11, No. 2 (2015), pp. 239–266.
- (16) Hiroshi Iritani, Etienne Mann, Thierry Mignon, *Quantum Serre theorem as a duality between quantum D-modules*, *Int. Math. Res. Not. IMRN* 2016, no. 9, 2828–2888.
- (17) Hiroshi Iritani, *On the Gamma structure of quantum cohomology*, *Sugaku*, vol.68, no.4 (2016) 337–360 (in Japanese)
- (18) Tom Coates, Hiroshi Iritani, *On the existence of a global neighbourhood*, *Glasgow Math. J.* 58 (2016), no. 3, 717–726.
- (19) Sergey Galkin, Vasily Golyshev, Hiroshi Iritani, *Gamma classes and quantum cohomology of Fano manifolds: Gamma Conjectures*, *Duke Math. J.* 165 (2016), no. 11, 2005–2077.
- (20) Hiroshi Iritani, Jifu Xiao, *Extremal transition and quantum cohomology: Examples of toric degeneration*. *Kyoto Mathematical Journal*, Volume 56, Number 4 (2016), 873–905.
- (21) Hiroshi Iritani *Shift operators and toric mirror theorem*. *Geometry & Topology* 21-1 (2017), 315–343
- (22) Hiroshi Iritani, *A mirror construction for the big equivariant quantum cohomology of toric manifolds*, DOI:10.1007/s00208-016-1437-7, *Mathematische Annalen Online First*.
- (23) Eduardo Gonzalez, Hiroshi Iritani, *Seidel elements and potential functions of holomorphic disc counting*. *Tohoku Math. J. (2)* Volume 69, Number 3 (2017), 327–368.
- (24) Tom Coates, Hiroshi Iritani, Yunfeng Jiang, *The Crepant Transformation Conjecture For Toric Complete Intersections*. *Adv. Math.* 329 (2018), 1002–1087.
- (25) Tom Coates, Hiroshi Iritani, *A Fock sheaf for Givental quantization*. *Kyoto J. Math.* 58 (2018), no. 4, 695–864.
- (26) Tom Coates, Alessio Corti, Hiroshi Iritani, Hsian-Hua Tseng, *Some Applications of the Mirror Theorem for Toric Stacks*. *Adv. Theor. Math. Phys.* Volume 23, Number 3, 767–802, (2019).
- (27) Sergey Galkin, Hiroshi Iritani, *Gamma conjecture via mirror symmetry Primitive forms and related subjects — Kavli IPMU 2014*, 55–115, *Adv. Stud. Pure Math.* 83 (2019)

- (28) Hiroshi Iritani, *Quantum D-modules of toric varieties and oscillatory integrals*. Handbook of Mirror Symmetry for Calabi-Yau manifolds and Fano manifolds, ALM47, 131-147, (2019)
- (29) Tom Coates, Alessio Corti, Hiroshi Iritani, Hsian-Hua Tseng, *Hodge-Theoretic Mirror Symmetry for Toric Stacks*. Journal of Differential Geometry, 114 (2020) 41-115.
- (30) Hiroshi Iritani, *Global mirrors and discrepant transformations for toric Deligne-Mumford stacks*. SIGMA 16 (2020), 032, 111 pages.
- (31) Mohammed Abouzaid, Sheel Ganatra, Hiroshi Iritani, Nick Sheridan, *The Gamma and Strominger-Yau-Zaslow Conjectures: a tropical approach to periods*. Geometry & Topology 24 (2020) 2547-2602.
- (32) Hiroshi Iritani, Todor Milanov, Yongbin Ruan, Yefeng Shen, *Gromov-Witten Theory of Quotient of Fermat Calabi-Yau varieties*. Mem. Amer. Math. Soc. 269 (2021), no.1310.
- (33) Tom Coates, Hiroshi Iritani, *Gromov-Witten Invariants of Local \mathbb{P}^2 and Modular Forms*. Kyoto J. Math. 61 (2021), no.3, 543-706.
- (34) Hiroshi Iritani, *Gamma conjecture and tropical geometry*, In: Proceedings of the Algebra (Daisugaku) Symposium 2021
- (35) Hiroshi Iritani, *Asymptotics of the banana Feynman amplitudes at the large complex structure limit*. Adv. Theor. Math. Phys. 26 (2022), no.5, 1239-1245.
- (36) Hiroshi Iritani, *Gamma classes and quantum cohomology*, ICM – International Congress of Mathematicians. Vol. IV. Sections 5-8, 2552–2574. EMS Press, Berlin, (2023).

Papers (preprint):

- (1) Hiroshi Iritani, *tt*-geometry in quantum cohomology*, arXiv:0906.1307.
- (2) Hiroshi Iritani, *Real and integral structures in quantum cohomology I: toric orbifolds*, arXiv:0712.2204.
- (3) Hiroshi Iritani, *Mirror symmetric Gamma conjecture for Fano and Calabi-Yau manifolds*, arXiv:2307.15940, submitted to the proceedings of the online Nottingham algebraic geometry seminar,
- (4) Hiroshi Iritani, Yuki Koto, *Quantum cohomology of projective bundles*, arXiv:2307.03696
- (5) Hiroshi Iritani, *Quantum cohomology of blowups*, arXiv:2307.13555
- (6) Sergey Galkin, Jianxun Hu, Hiroshi Iritani, Huazhong Ke, Changzheng Li, Zhitong Su, *Revisiting Gamma conjecture I: counterexamples and modifications*, arXiv:2405.16979
- (7) Hiroshi Iritani, *Fourier analysis of equivariant quantum cohomology*, arXiv:2501.18849