

Curriculum Vitae

TAEHEE KIM

Department of Mathematics
Konkuk University
Neungdong-rho 120, Gwangjin-gu
Seoul 05029
Korea

<http://konkuk.ac.kr/~tkim/>

Academic Positions

Mar 2015	-	Professor	Dept of Math, Konkuk University, Korea
Mar 2010	- Feb 2015	Associate Professor	Dept of Math, Konkuk University, Korea
Mar 2006	- Feb 2010	Assistant Professor	Dept of Math, Konkuk University, Korea
Jul 2003	- Jan 2006	G. C. Evans Instructor	Dept of Math, Rice University, USA

Education

- Ph.D., Mathematics, Indiana University, Bloomington, Indiana, June 2003.
Thesis Advisor: Kent E. Orr.
Thesis Title : *Obstructions to slicing and doubly slicing knots.*
- B.S. Korea Advanced Institute of Science and Technology, Korea, 1997.

Research Interests

Knot Theory
Low-dimensional Manifolds
Geometric Topology

Publications

1. Taehee Kim, *Amenable signatures, algebraic solutions, and the filtrations of the knot concordance group*, preprint, arXiv:1606.06807, submitted for publication.
2. Jae Choon Cha and Taehee Kim, *Unknotted gropes, Whitney towers, and doubly slicing knots*, preprint, arXiv:1612.02226, to appear in Trans. Amer. Math. Soc.
3. Se-Goo Kim and Taehee Kim, *Polynomial splittings of correction terms and doubly slice knots*, J. Knot Theory Ramifications, 27 (2018), no. 1, 1850001, 9 pp.
4. Taehee Kim, *Knots having the same Seifert form and primary decomposition of knot concordance*, J. Knot Theory Ramifications, 26 (2017), no. 14, 1750103, 12 pp.
5. Se-Goo Kim and Taehee Kim, *Splittings of von Neumann rho-invariants of knots*, J. London. Math. Soc. 89 (2014), no. 3, 797–816.
6. Stefan Friedl and Taehee Kim, *Taut sutured manifolds and twisted homology*, Math. Res. Lett. 20 (2013), no. 02, 289–303.
7. Taehee Kim, Takahiro Kitayama and Takayuki Morifuji, *Twisted Alexander polynomials on curves in character varieties of knot groups*, Internat. J. Math. 24 (2013), no. 3, 1350022, 16 pp.
8. Stefan Friedl, Taehee Kim and Takahiro Kitayama, *Poincaré duality and degrees of twisted Alexander polynomials*, Indiana Univ. Math. J. 61 (2012), no. 1, 147–192.
9. Jae Choon Cha, Taehee Kim, Daniel Ruberman and Sašo Strle, *Smooth concordance of links topologically concordant to the Hopf link*, Bull. Lond. Math. Soc. 44 (2012), no. 3, 443–450.
10. Taehee Kim and Takayuki Morifuji, *Twisted Alexander polynomials and character varieties of 2-bridge knot groups*, Internat. J. Math. 23 (2012), no. 6, 1250022, 24 pp.
11. Jae Choon Cha, Stefan Friedl, and Taehee Kim, *The cobordism group of homology cylinders*, Compos. Math. 147 (2011), no. 3, 914–942.

12. Se-Goo Kim and Taehee Kim, *Polynomial splittings of metabelian von Neumann rho-invariants*, Proc. Amer. Math. Soc. 136 (2008), no. 11, 4079–4087.
13. Jae Choon Cha and Taehee Kim, *Covering link calculus and iterated Bing doubles*, Geom. Topol. 12 (2008), no. 4, 2173–2201.
14. Stefan Friedl and Taehee Kim, *Twisted Alexander norms give lower bounds on the Thurston norm*, Trans. Amer. Math. Soc. 360 (2008), no. 9, 4597–4618.
15. Stefan Friedl and Taehee Kim, *The parity of the Cochran-Harvey invariants of 3-manifolds*, Trans. Amer. Math. Soc. 360 (2008), no. 6, 2909–2922.
16. Tim D. Cochran and Taehee Kim, *Higher-order Alexander invariants and filtrations of the knot concordance group*, Trans. Amer. Math. Soc. 360 (2008), no. 3, 1407–1441.
17. Stefan Friedl and Taehee Kim, *Thurston norm, fibered manifolds and twisted Alexander polynomials*, Topology, 45 (2006) no. 6, 929-953.
18. Taehee Kim, *New obstructions to doubly slicing knots*, Topology, 45 (2006) no. 3, 543-566.
19. Taehee Kim, *An infinite family of non-concordant knots having the same Seifert form*, Comment. Math. Helv., 80 (2005), no. 1, 147-306.
20. Taehee Kim, *Filtration of the classical knot concordance group and Casson-Gordon invariants*, Math. Proc. Cambridge Philos. Soc., 137 (2004), no. 2, 293–306.

Selected Talks

1. *The 4-genus of knots and links*,
2018 Mini-workshop on Low Dimensional Topology, POSTECH, Korea, September 15, 2018.
2. *The 4-genus of links*,
Topology Seminar, Indiana University, USA, July 26, 2018.
3. *The 4-genus of knots and links*,
Topology Seminar, Indiana University, USA, July 19, 2018.
4. *Concordance on knots and Seifert forms*,
The 13th East Asian School of Knots and Related Topics, KAIST, Korea, January 29, 2018.
5. *Slicing knots and gropes in 4-space*,
2017 Pohang Mathematics Workshop, Jeonju, Korea, December 9, 2017.
6. *Seifert forms and knot concordance*,
The 2nd Pan Pacific international Conference on Topology and Applications, Busan, Korea, November 13, 2017.
7. *Filtrations of the knot concordance group*,
Topology Seminar, Indiana University, USA, July 25, 2017.
8. *Structure of the grope filtration of the knot concordance group*,
Invariants in Low-dimensional Topology, KIAS, Korea, May 10, 2017.
9. *Topologically and smoothly doubly slice knots*,
The 12th East Asian School of Knots and Related Topics, The University of Tokyo, Japan, February 14, 2017.
10. *Unknotted gropes and Whitney towers*,
International Conference for KMS 70th Anniversary, Seoul National University, Korea, October 23, 2016.
11. *Algebraic n -solutions and filtrations of the knot concordance group*,
Topology Seminar, KIAS, Korea, June 30, 2016.

12. *Unknotted gropes and Whitney towers in 4-space*,
5-day Workshop on Synchronizing Smooth and Topological 4-Manifolds, BIRS, Canada, February 25, 2016.
13. *Topologically and smoothly doubly slice knots*,
The 11th East Asian School of Knots and Related Topics, Osaka City University, Japan, January 27, 2016.
14. *The grope filtration of the knot concordance group*,
2015 Workshop on Geometry and Related Topics, Jeju National University, Korea, November 27, 2015.
15. *Knot concordance and gropes*,
Knots and Spatial Graphs 2015, KAIST, Korea, November 6, 2015.
16. *The solvable filtration of the knot concordance group*,
The 10th East Asian School of Knots and Related Topics, East China Normal University, China, January 26, 2015.
17. *Knots in 3-space and surfaces in dimension 4*,
Math Colloquium, Korea University, Korea, November 28, 2014.
18. *Character varieties and detecting fiberedness of knots*,
Topology Seminar, Rice University, USA, November 4, 2013.
19. *Character varieties and twisted Alexander polynomials*,
Topology Seminar, Indiana University, USA, October 8, 2013.
20. *Concordance of knots and Seifert forms*,
Topology Seminar, The Ohio State University, USA, September 24, 2013.
21. *Alexander invariants and splittings of concordance invariants*,
The Asian Mathematical Conference 2013, Korea, July 1, 2013 (Topology session invited talk).
22. *Knot concordance and invariants from derived covers*,
The 10th KAIST Geometric Topology Fair, KAIST, Korea, August 14, 2012.
23. *Introduction to knots and links*,
Math Colloquium, UNIST, Korea, April 18, 2012.
24. *Fibered knots and twisted Alexander polynomials*,
Topology Seminar, KAIST, Korea, March 27, 2012.
25. *Concordance class of the Hopf link*,
The 8th East Asian School of Knots and Related Topics, KAIST, Korea, January 11, 2012.
26. *Twisted Alexander polynomials and character varieties of knots*.
2011 Fall Meeting of the KMS, Kyungpook National University, Korea, October 21, 2011 (invited talk).
27. *The Alexander invariants and concordance on knots*,
Topology Seminar, Seoul National University, Korea, April 26, 2011.
28. *Character varieties and twisted Alexander invariants for 2-bridge knots*,
The 7th East Asian School of Knots and Related Topics, Hiroshima University, Japan, January 11, 2011.
29. *Cobordism on homology cylinders and combinatorial torsions*,
Twisted topological invariants and topology of low-dimensional manifolds, RIMS seminar, Akita, Japan, September 16, 2010.

30. *Twisted Alexander polynomials and character varieties for 2-bridge knots*,
Twisted topological invariants and topology of low-dimensional manifolds, RIMS seminar, Akita, Japan, September 14, 2010.
31. *Alexander polynomial, L2-signatures, and concordance on knots*,
Lecture Series on L2-invariants of Knots and Manifolds, KIAS, Korea, August 12, 2010.
32. *The cobordism group of homology cylinders and combinatorial torsions*,
Knot Concordance and Homology Cobordism Workshop, Wesleyan University, USA, July 21, 2010.
33. *The cobordism group of homology cylinders and torsions*,
Topology Seminar, University of Edinburgh, UK, July 1, 2010.
34. *Concordance on knots and homology cobordism*,
The Konkuk-Ajou-Inha Mathematical Symposium, Ajou University, Korea June 18, 2010.
35. *The cobordism on homology cylinders and torsions*,
The 6th East Asian School of Knots and Related Topics, Chern Institute of Mathematics, China, January 25, 2010 (Plenary Talk).
36. *Reidemeister torsion and homology cylinders*,
Topology Seminar, Tokyo University of Agriculture and Technology, Japan, January 14, 2010.
37. *Combinatorial torsions and the cobordism group of homology cylinders*,
The First Joint Meeting of KMS and AMS, Korea, December 19, 2009.
38. *Combinatorial torsions and their applications*,
Math Colloquium, Inha University, Korea, September 30, 2009.
39. *Reidemeister torsion and homology cylinders*,
The 2nd Topology Workshop, KAIST, Korea, August 19, 2009.
40. *Concordance of knots and Alexander polynomials*,
Geometry and Topology Seminar, Warwick Mathematics Institute, UK, February 5, 2009.
41. *The parity of degrees of higher-order Alexander polynomials for a 3-manifold*,
The Fifth East Asian School of Knots and Related Topics, Gyeongju, Korea, January 14, 2009.
42. *Concordance on Knots*,
Math Colloquium, Sogang University, Korea, November 20, 2008.
43. *Alexander polynomials and concordance on knots*,
Knot Theory: Fifty years since Fox and Milnor, Brandeis University, USA, June 3, 2008.
44. *Introduction to knots and geometric topology*,
Math Colloquium, Chung-Ang University, Korea, November 23, 2007.
45. *I. Twisted Alexander invariants and their properties and
II. Thurston norm, fiberedness and twisted Alexander invariants*,
Topology and Computer 2007, Akita University, Japan, Sep 6-7, 2007.
46. *Knot concordance and coprime Alexander polynomials*,
The 3rd TAPU Knot Seminar, Pusan National University, Korea, July 5, 2007.
47. *Polynomial splitting of von Neumann rho invariants*,
Geometric Topology Conference, Beijing, China, June 19, 2007.
48. *Knot concordance and derived covers*,
Math Colloquium, Seoul National University, May 10, 2007.

49. *Twisted Alexander invariants and low-dimensional topology*,
The Third East Asian School of Knots and Related Topics, Osaka, Japan, February 7, 2007 (plenary talk)
50. *Knot concordance and higher-order Alexander invariants*,
NIMS Workshop for Geometry and Topology, Korea, November 17, 2006
51. *Thurston norm and twisted Alexander polynomials*,
2006 Fall Meeting of the KMS, Seoul National University, Korea, October 29, 2006.
52. *Classification of knots by concordance*,
Seminar, KIAS, Korea, June 29, 2006.
53. *Classification of knots by concordance*,
Math Colloquium, KAIST, Korea, June 9, 2006.
54. *Thurston norm, fibered manifolds and twisted Alexander polynomials*,
Topology Seminar, Korea University, Korea, June, 2005.
55. *Thurston norm, fibered manifolds and twisted Alexander polynomials*,
Topology Seminar, KAIST, Korea, June, 2005.
56. *Classification of the knot concordance group*,
Topology Seminar, Kyung Hee University, Korea, June, 2005.
57. *The twisted Alexander polynomial and the Thurston norm*,
Topology Seminar, University of Tennessee, Knoxville, USA, March, 2005.
58. *Non-triviality of the Cochran-Orr-Teichner filtration of the knot concordance group*,
Conference on Low-Dimensional Topology, University of Virginia, Charlottesville, USA, December, 2004.
59. *Filtrations of the knot concordance group*,
Topology Seminar, Konkuk University, Korea, June, 2004.
60. *Filtrations of the knot concordance group*,
Korea Institute for Advanced Study, Korea, Korea, June, 2004.
61. *Filtrations of knots and knot concordance*,
5-day Workshop on Knots and their Manifold Stories, BIRS, Canada, May, 2004.
62. *New obstructions to doubly slicing knots*,
AMS Meeting (#993), Poenix, USA, January, 2004,
Special session on Low-Dimensional Topology.
63. *Obstructions to doubly slicing knots*,
Topology Seminar, University of Texas at Austin, USA, November, 2003.
64. *New obstructions to doubly slicing knots*,
Topology Seminar, University of California at San Diego, USA, June, 2003.
65. *New obstructions to doubly slicing knots*,
AMS Meeting (#985), Bloomington, USA, April, 2003,
Special session on Geometric Topology.
66. *A filtration of the knot concordance group and Casson-Gordon invariants*,
AMS meeting (#983), Baltimore, USA, January, 2003,
Special session on Algebraic Topology Based on Knots.
67. *New obstructions to doubly slicing knots*,
Knots in Washington XV, Washington, DC, USA, January, 2003.

68. *Structure of doubly slice knots*,
Topology Seminar, University of Illinois at Urbana-Champaign, USA, October, 2002.
69. *Non-slice knots with vanishing Casson-Gordon invariants*,
AMS Meeting (#973), San Diego, USA, January, 2002,
Special session on Low Dimensional Topology.
70. *Non-slice knots with vanishing Casson-Gordon invariants*,
Topology Seminar, KAIST, Korea, May, 2001.