

KAWAUCHI, Akio's Paper List

134. (with Valeriy Bardakov) Spatial graph as connected sum of a planar graph and a braid (preprint version). <https://arxiv.org/abs/2006.16072v1>
133. (with María de los Angeles Guevara Hernández) On alternating closed braids (preprint version).
132. Smooth homotopy 4-sphere (preprint version).
www.sci.osaka-cu.ac.jp/OCAMI/publication/preprint/pdf;
<https://arxiv.org/abs/1911.11904v1>;
https://www.researchgate.net/publication/344307081_Smooth_homotopy_4-sphere_revised_on_September_19_2020
131. Unique diagram of a spatial arc and the knotting probability (preprint version).
<https://arxiv.org/abs/1907.10194>
130. Knotting probability of an arc diagram, *J. Knot Theory Ramifications* (to appear).
<https://doi.org/10.1142/S0218216520420043>;
<http://www.sci.osaka-cu.ac.jp/~kawauchi/diagramknottingprobability.pdf>
129. Ribbonness of a stable-ribbon surface-link, II. General case (preprint version).
<https://arxiv.org/abs/1907.09713>
128. Triviality of a surface-link with meridian-based free fundamental group (preprint version).
<https://arxiv.org/pdf/1804.04269.pdf>
127. Ribbonness of a stable-ribbon surface-link, I. A stably trivial surface-link, *Topology and its Applications* (to appear). <https://arxiv.org/pdf/1804.02654.pdf>
126. Splitting criteria for a definite 4-manifold with infinite cyclic fundamental group (preprint version). <https://arxiv.org/abs/1804.01380>
125. (with A. Shimizu and Y. Yaguchi) Cross-index of a graph, *Kyungpook Math. J.* 59 (2019), 797-820.
124. Topology of a 4D universe for every 3-manifold, *Topology and its Applications* 264 (2019), 66-78.
123. (with J. Kim) Immersed 2-knots with essential singularity, *Topology and its Applications* 264(2019), 462-472.
122. Homological infinity of 4D universe for every 3-manifold, in: *Algebraic Topology and Related Topics* (2019), 153-176, Birkhäuser.
121. (with K. Kauer, S. Kamada and M. Prabhacker) An unknotting index for virtual knots, *Tokyo Journal of Mathematics*, Advance publication (2018), 14 pages.
120. Faithful equivalence of equivalent ribbon surface-links, *Journal of Knot Theory and Its Ramifications*, 27, No. 11 (2018), 1843003 (23 pages).

119. (with S. Kamada, J. Kim, and S. Y. Lee) Biquandle cohomology and state sum invariants of links and surface-links, *Journal of Knot Theory and Its Ramifications*, 27, No. 11 (2018), 1843016 (37 pages).
118. Complexities of a knitting pattern, *Reactive and Functional Polymers*, 131 (2018), 230-236.
117. (with S. Kamada, J. Kim, and S.Y.Lee) Presentation of immersed surface-links by marked graph diagrams, *J. Knot Theory Ramifications* 27 (2018), No. 10, 1850052 (10 pages).
116. (with A. Shimizu) On the orientations of monotone knot diagrams, *Journal of Knot Theory and Its Ramifications*, 26, No. 10 (2017), 1750053 (15 pages).
115. (with Y. Joung, S. Kamada and S. Lee) Polynomial of an oriented surface-link diagram via A_2 invariant, *Topology and its Applications*, 231 (2017), 159-185.
114. (with I. Tayama) Representing 3-manifolds in the complex number plane, *Topology and its Applications*, 230C (2017), 425-443.
113. On a cross-section of an immersed sphere-link in 4-space, *Topology and its Applications*, 230C (2017), 194-217.
112. (with K. Kaur, S. Kamada and M. Prabhakar) Gauss diagrams, unknotting numbers and trivializing numbers of spatial graphs, *Topology and its Applications*, 230 (2017), 586-598.
111. A chord graph constructed from a ribbon surface-link, *Contemporary Mathematics*, 689 (2017), 125-136. Amer. Math. Soc., Providence, RI, USA.
110. Knots in Mathematics (in Japanese), in: Chapter one of: Introduction to Mathematical Education on Knots- for primary school children, junior high students, and the high school students, No. 5 (ed. A. Kawauchi and T. Yanagimoto) (March 2017), 1-7.
109. Supplement to a chord diagram of a ribbon surface-link, *Journal of Knot Theory and Its Ramifications* 26 (2017), 1750033 (5 pages).
108. Knot theory for spatial graphs attached to a surface, *Proceedings of the ICTS Program: Knot Theory and its Applications*, *Contemporary Mathematics* 670 (2016), 141-168.
107. *Theory of Knots* (Monograph in Japanese), Kyoritsu Shuppan Co. Ltd (2015).
106. (with Y. Bae and S. Choi) On knotted real projective planes, *Journal of Knot Theory and Its Ramifications*, 24 (2015), 1540011 (15 pages).
105. A chord diagram of a ribbon surface-link, *Journal of Knot Theory and Its Ramifications*, 24 (2015), 1540002 (24 pages).
104. Characteristic genera of closed orientable 3-manifolds, *Kyungpook Math. J.*, 55 (2015), 753-771.
103. On 4-dimensinal universe for every 3-dimensional manifold, *Topology and its Applications*, 196 (2015), 575-593.

- 102.(with I. Tayama and B. Burton) Tabulation of 3-manifolds of lengths up to 10, *Topology and its Applications*, 196 (2015), 937-975.
101. (with A. Shimizu) Quantization of the crossing number of a knot diagram, *Kyungpook Math. J.*, 55 (2015), 741-752.
100. (with A. Shimizu and K. Kishimoto) A game using knot theory, Japanese Patent Registration Number 5804412 (September 11, 2015).
99. Topology associated with various fields of mathematics (in Japanese), in: *Japanese Monthly Magazine "Mathematical Sciences"*, 11 (2014), 7-12.
98. The Alexander polynomials of immersed concordant links, *Boletín de la Sociedad Matemática Mexicana*, 20 (2014) 559-578. DOI: 10.1007/s40590-014-0023-9.
97. Splitting a 4-manifold with infinite cyclic fundamental group, revised in a definite case. *Journal of Knot Theory and Its Ramifications*, 23 (2014) 1450029 (6 pages).
96. Component-conservative invertibility of links and Samsara 4-manifolds on 3-manifolds, *Asia Pacific Journal of Mathematics*, 1 (2014), 86-106.
95. Knot theory game "Region Select" (in Japanese), in: *On a trial of early childhood education by a knot, Introduction to Mathematical Education on Knots-for primary school children, junior high school students, high school students and university students*, No. 4, pp.1-8, (A. Kawauchi and T. Yanagimoto ed.) (2014).
94. Splitting a 4-manifold with infinite cyclic fundamental group, revised, *Journal of Knot Theory and Its Ramifications*, 22, No. 14 (2013) 1350081 (9 pages).
93. (with K. Kishimoto and A. Shimizu) *Knot Theory and Game* (a monograph in Japanese), Asakura Publishing Co., Ltd. (2013).
92. On mathematics education of knots (in Japanese), *Osaka Journal of Mathematics Education*, Memorial edition to Professor Hirokazu Okamori, 42 (2013), 141-146.
- 91.(with K. Yoshida) Topology of prion proteins, *Journal of Mathematics and System Science*, 2(2012), 237-248.
90. On the Alexander polynomials of knots with Gordian distance one, *Topology and its Applications*, 159(2012), 948-958.
89. Mind-knots and mind-relations: knot theory applied to psychology, Chapter 7 in: *Qualitative Mathematics for the Social Sciences, Mathematical Models for Research on Cultural Dynamics* (L. Rudolph ed.), Routledge's Cultural Dynamics of Social Representation series (Jaen Valsiner, series ed.) (2012), 227-253.
88. What is Knot Theory ? Why Is It In Mathematics ?, in: *Teaching and Learning of Knot Theory in School Mathematics* (A. Kawauchi and T. Yanagimoto ed.), OCAMI Studies, 4(2011), 1-15, Osaka Municipal Univ. Press; (2012), 1-15, Springer Verlag.
87. (with T. Kadokami) Amphicheirality of links and Alexander invariants, *SCIENCE CHINA*

Mathematics 54 (2011), 2213-2227.

86. On transforming a spatial graph into a plane graph, in: Statistical Physics and Topology of Polymers with Ramifications to Structure and Function of DNA and Proteins, Progress of Theoretical Physics Supplement, No. 191(2011), 235-244.

85. (with I. Tayama) Enumerating 3-manifolds with lengths up to 9 by a canonical order, Topology Appl. 157(2010), 261-268 .

84. On alternation numbers of links, Topology Appl. 157(2010), 274-279.

83. Applying knot theory to sciences - mainly on knot models of a prion protein and a psychological mind (in Japanese), a civic lecture record, SugakuTushin, 14-4(February, 2010), 26-45.

82. Basics on topology (in Japanese), in: Topology Designing-Material / Materials Design Beginning With New Geometry, NTS, Inc. (2009), 127-140.

81. (with I. Tayama) Enumerating homology spheres with lengths up to 10 by a canonical order, Proceedings of Intelligence of Low-Dimensional Topology 2009 in honor of Professor Kunio Murasugi's 80th birthday, (2009), 83-92.

80. Topology of spatial graphs, in: Proceedings of Yamada Conference 2008 "Topological Molecules" (2008).

79. Defining the absolute value of the linking number of a link without concept of a negative number (in Japanese), in: Introduction to Mathematical Education on Knots- for primary schoolchildren, junior high students, and the high school students, No. 3(A. Kawachi and T. Yanagimoto ed.) (2009), 13-21.

78. On a complexity of a spatial graph. in: Knots and soft-matter physics, Topology of polymers and related topics in physics, mathematics and biology, BusseiKenkyu 92-1 (2009-4), 16-19.

77. Rational-slice knots via strongly negative-amphicheiral knots, Communications in Mathematical Research 25(2009), 177-192.

76. The first Alexander $Z[Z]$ -modules of surface-links and of virtual links, Heiner Zieschang Gedenkschrift, Geometry & Topology Monographs 14(2008), 353-371.

75. (I. Tayama) Enumerating prime link exteriors with lengths up to 10 by a canonical order, Proceedings of the joint conference of Intelligence of Low Dimensional Topology 2008 and the Extended KOOK Seminar, (2008), 135-143.

74. Lectures on knot theory (a monograph in Japanese), Kyoritsu Shuppan Co. Ltd(2007).

73. (with I. Tayama) Enumerating 3-manifolds by a canonical order, Intelligence of low dimensional topology 2006, Series on knots and everything, World Sci. publ. 40(2007), 165-172.

72. On the surface-link groups, Intelligence of low dimensional topology 2006, Series on knots and everything, World Sci. publ. 40(2007), 157-164.

71. A knot model in psychology, in: Knot Theory for Scientific Objects, OCAMI Studies

- 1(2007), 129-141.
70. Topological imitations and Reni-Meccia-Zimmermann's conjecture, *Kyungpook Math. J.*, 46(2006),1-9.
69. (with I. Tayama) Enumerating prime links by a canonical order, *Journal of Knot Theory and Its Ramifications*, 15(2006), 217-237.
68. Characterizing the first Alexander $Z[Z]$ -modules of surface-links and of virtual links, in: *Proc. Second East Asian School of Knots, Links, and Related Topics in Geometric Topology*(Darlian, Aug. 2005),111-121.
67. (with I. Tayama) Enumerating the exteriors of prime links by a canonical order, in: *Proc. Second East Asian School of Knots, Links, and Related Topics in Geometric Topology* (Darlian, Aug. 2005),269-277.
66. Topological imitation of a colored link with the same Dehn surgery manifold, *Proc. of International Conf. Topology in Matsue 2002*, *Topology Appl.* 146-147(2005), 67-82.
65. (with I. Tayama) Enumerating the prime knots and links by a canonical order, *Proc. 1st East Asian School of Knots, Links, and Related Topics*, 2004 (Seoul, Feb. 2004), (2004), 307-316.
64. A tabulation of 3-manifolds via Dehn surgery, *Boletín de la Sociedad Matemática Mexicana* (3) 10 (2004), 279-304.
63. Link corresponding to 3-manifold, in: *Proc. of Professor Kazuaki Kobayashi and Professor Shin'ichi Suzuki's Joint 60th Birthday Symposium "The Present, Past and Future's Knot Theory"* (2002), 130-154.
62. On pseudo-ribbon surface-links, *J. Knot Theory Ramifications*,11(2002)1043-1062.
61. On linking signature invariants of surface-knots, *J. Knot Theory Ramifications* 11(2002), 369-385.
60. An intrinsic Arf invariant of a link and its surface-link analogue, in: *Proc. of the first topology meeting of Japan-Mexico 1999*, *Topology Appl.* 121(2002), 255-274.
59. (with S. Kamada and T. Matumoto) Combinatorial moves on ambient isotopic submanifolds in a manifold, *J. Math. Soc. Japan*, 53(2001), 321-331.
58. From linear algebra to homology (a monograph in Japanese), *Baifukan Tokyo* (2000).
57. Algebraic characterization of an exact 4-manifold with infinite cyclic first homology, *Journal Atti Sem. Mat. Fis. Univ. Modena* 48 (2000), 405-424.
56. Torsion linking forms on surface-knots and exact 4-manifolds, in: *Knots in Hellas '98, Series on Knots and Everything*, *World Sci. Publ.* 24(2000), 208-228.
55. The quadratic form of a link, in: *Proc. Low Dimension Topology*, *Contemp. Math.* 233(1999),97-116.
54. On the fundamental class of an infinite cyclic covering, *Kobe J. Math.* 15(1998),103-114.
53. Floer homology of topological imitations of homology 3-spheres, *J. Knot Theory*

- Ramifications 7(1998),41-60.
52. Osaka City University Internet Lectures on knot theory (in Japanese, 1997).
51. The quadratic form of a link and a Seifert matrix, in: The 5th Korea-Japan School of Knots and Links, Proc. Applied Math. Workshop 8, KAIST, Korea(1997), 119-129.
50. Topological imitations, in: Lectures at Knots 96, World Scientific Publ. (1997) 19-37.
49. A survey of knot theory, Birkhäuser Verlag(1996).
48. Distance between links by zero-linking twists, Kobe J. Math.13(1996), 183-190.
47. Mutative hyperbolic homology 3-spheres with the same Floer homology, GeometriaeDedicata 61(1996), 205-217.
46. (with J. A. Hillman) Unknotting orientable surfaces in the 4-sphere, J. Knot Theory Ramifications 4(1995),213-224.
45. Topological imitation, mutation and the quantum $SU(2)$ invariants, J. Knot Theory Ramifications 3(1994), 25-39.
44. A survey of topological imitations of $(3,1)$ -dimensional manifold pairs, Proc. Applied Math. Workshop 4(1994), 43-52.
43. On coefficient polynomials of the skein polynomial of an oriented link, Kobe J. Math. 11(1994), 49-68.
42. Splitting a 4-manifold with infinite cyclic fundamental group, Osaka J. Math. 31(1994), 489-495.
41. Introduction to almost identical imitations of $(3,1)$ -dimensional manifold pairs, in: Topics in Knot Theory, Proceedings of NATO-ASI Topics in Knot Theory(Eruzurum /Turkey), Kluwer Academic Publishers, (1993), 69-83.
40. Almost identical imitations of $(3,1)$ -dimensional manifold pairs and the manifold mutation, J. Austral. Math. Soc., Ser. A 55(1993),100-115.
39. Almost identical imitations of $(3,1)$ -dimensional manifold pairs and the branched coverings, Osaka J. Math. 29(1992), 299-327.
38. Almost identical link imitations and the skein polynomial, in: Knots 90, Walter de Gruyter, Berlin-New York (1992), 465-476.
37. The first Alexander modules of surfaces in 4-sphere, in: Algebra and Topology, Proc. KAIST Math. Workshop 5(1990), 81-89.
36. Almost identical imitations of $(3,1)$ -dimensional manifold pairs, Osaka J. Math. 26(1989),743-758.
35. An imitation theory of manifolds, Osaka J. Math. 26(1989),447-464.
34. Imitations of $(3,1)$ -dimensional manifold pairs, Sugaku 40(1988),193-204 (in Japanese); Sugaku Expositions 2(1989), 141-156 (published from Amer. Math. Soc. in English).
33. The imbedding problem of 3-manifolds into 4-manifolds, Osaka J. Math. 25(1988),171-183.

32. Knots in the stable 4-space; An overview, A Fete of Topology, Academic Press (1988), 453-470.
31. On the integral homology of infinite cyclic coverings of links, Kobe J. Math. 4(1987),31-41.
30. Three dualities on the integral homology of infinite cyclic coverings of manifolds, Osaka J. Math. 23(1986),633-651.
29. On the signature invariants of infinite cyclic coverings of even dimensional manifolds, Homotopy Theory and Related Topics, Advanced Studies in Pure Math. 9(1986), 177-188.
28. On the signature invariants of infinite cyclic coverings of closed odd dimensional manifolds, Algebraic and Topological Theories-to the memory of Dr. T. Miyata, Kinokuniya Co. Ltd. (1985),52-85.
27. Classification of pretzel knots, Kobe J. Math. 2(1985),11-22.
26. (with F. Hosokawa, Y. Nakanishi, and M. Sakuma) Note on critical points of surfaces in 4-space, Kobe J. Math. 1(1984),151-152.
25. (with T. Kobayashi and M. Sakuma) On 3-manifolds with no periodic maps, Japan. J. Math. 10(1984),185-193.
24. Rochlin invariant and α -invariant, Four-Manifold Theory, Contemp. Math. 35(1984), 315-326.
23. On the Robertello invariants of proper links, Osaka J. Math. 21(1984),81-90.
22. (with T. Shibuya and S. Suzuki) Descriptions on surfaces in four-space, II: Singularities and cross-sectional links, Math. Sem. Notes, Kobe Univ. 11(1983),31-69.
21. (with H. Murakami and K. Sugishita) On the T-genus of knot cobordism, Proc. Japan Acad. 59(1983), 91-93.
20. A test for the fundamental group of a 3-manifold, J. Pure Appl. Algebra, 28(1983), 189-196.
19. On the Rochlin invariants of \mathbb{Z}_2 -homology 3-spheres with cyclic actions, Japan. J. Math. 8(1982),217-258.
18. (with T. Shibuya and S. Suzuki) Descriptions on surfaces in four-space, I : Normal forms, Math. Sem. Notes, Kobe Univ. 10 (1982),75-125.
17. On 3-manifolds admitting orientation-reversing involutions, J. Math. Soc. Japan 33(1981),571-589.
16. The (2,1)-cable of the figure eight knot is rationally slice (in a handwritten manuscript) (1980).
15. (with S. Kojima) Algebraic classification of linking pairings on 3-manifolds, Math. Ann. 253(1980),29-42.
14. (with T. Matumoto) An estimate of the homology torsion modules of infinite cyclic coverings and knot theory, Pacific J. Math. 90(1980),99-103.

- 13 .On links not cobordant to split links, *Topology* 19(1980),321-334.
12. On a 4-manifold homology equivalent to a bouquet of surfaces, *Trans. Amer. Math. Soc.* 262(1980),95-112.
11. Vanishing of the Rochlin invariants of some \mathbb{Z}_2 -homology 3-spheres, *Proc. Amer. Math. Soc.* 79(1980),303-307.
10. The invertibility problem on amphicheiral excellent knots, *Proc. Japan Acad.* 55(1979),399-402.
9. (with R. Hartley) Polynomials of amphicheiral knots, *Math. Ann.*,243(1979),63-70.
8. On n -manifolds whose punctured manifolds are imbeddable in $(n+1)$ -sphere and spherical manifolds, *Hiroshima Math. J.*9(1979),47-57.
7. (with F. Hosokawa) Proposals for unknotted surfaces in four-space. *Osaka J. Math.*16(1979),233-248.
6. On the Alexander polynomials of cobordant links, *Osaka J. Math.* 15(1978), 151-159.
5. On quadratic forms of 3-manifolds, *Invent. Math.* 43(1977),177-198.
4. H^- -cobordism , I, *Osaka J. Math.* 13(1976),567-590.
3. Three dimensional homology handles and circles, *Osaka J. Math.* 12(1975),565-581.
2. A partial Poincare duality theorem for infinite cyclic coverings, *Quart. J. Math.* 26(1975),437-458.
1. A classification of compact 3-manifolds with infinite cyclic fundamental groups, *Proc. Japan Acad.* 50(1974),175-178.