KAWAUCHI, Akio's PaperList

- 138. Classical Poincar{\{\pmathbf{Y}'e\}\} conjecture via 4D topology. http://arxiv.org/abs/2103.16001
- 137. Smooth homotopy 4-sphere (preprint version).

www.sci.osaka-cu.ac.jp/OCAMI/publication/preprint/pdf;https://arxiv.org/abs/1911.11904v1

136. Unique diagram of a spatial arc and the knotting probability (preprint version).

https://arxiv.org/abs/1907.10194

135. Ribbonness of a stable-ribbon surface-link, II. General case (preprint version). https://arxiv.org/abs/1907.09713

134. Triviality of a surface-link with meridian-based free fundamental group (preprint version). https://arxiv.org/pdf/1804.04269.pdf

- 133. Splitting criteria for a definite 4-manifold with infinite cyclic fundamental group (preprint version).https://arxiv.org/abs/1804.01380
- 132. (with Valeriy Bardakov) Spatial graph as connected sum of a planar graph and a braid,
- J. Knot Theory Ramifications 30 (11) (2021) 2150077 (15 pages).

https://arxiv.org/abs/2006.16072v1

131. Mathematical mirror image and knot - Understanding chiral knot objects (in Japanese), SUURIKAGAKU, No. 693 (March 2021), 59-65,SAIENSU-SHA Co. Ltd.

130. Smooth homotopy 4-sphere (research announcement), 2191 Intelligence of Low Dimensional Topology, RIMS Kokyuroku 2191 (July 2021), 1-13.

129. (with María de los Angeles Guevara Hernández) On alternating closed braids, J. Knot Theory Ramifications, 30 (3) (2021) 2150017 (14 pages).

DOI: 10.1142/S0218216521500176

128.Ribbonness of a stable-ribbon surface-link, I. A stably trivial surface-link, Topology and its Applications 301(2021), 107522 (16pages). https://arxiv.org/pdf/1804.02654.pdf

127.Knotting probability of an arc diagram, Journal of Knot Theory and Its Ramifications 29 (10) (2020) 2042004 (22 pages).

https://doi.org/10.1142/S0218216520420043;

 $http://www.sci.osaka-cu.ac.jp/{\sim}kawauchi/diagramknottingprobability.pdf$

126. (with A.Shimizu and Y. Yaguchi) Cross-index of a graph, Kyungpook Math. J. 59 (2019), 797-820.

- 125. Topology of a 4D universe for every 3-manifold, Topology and its Applications 264 (2019), 66-78.
- 124. (with J. Kim) Immersed 2-knots with essential singularity, Topology and its Applications 264(2019), 462-472.

- 123. Homological infinity of 4D universe for every 3-manifold, in: Algebraic Topology and Related Topics (2019), 153-176, Birkhäuser.
- 122. Poincaré Conjecture (in Japanese), SUUGAKU SENINAR, vol. 57 (9)_684 (September 2018) 23-29, NIPPON HYORON SHA CO. LTD.
- 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, Boletin de la Sociedad Matematica 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(6pages).
- 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 HirokazuOkamori, 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 (JaanValsiner, 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. Kawauchi 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 ZieschangGedenkschrift, 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, Boletin de la Sociedad Matematica 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 Appli. Algebra, 28(1983), 189-196.
- 19. On the Rochlin invariants of 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 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 amphicheiralknots, 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.

.