# Publications and Conference Talks

**Refereed papers:**   Fold maps on small dimensional manifolds with prescribed singular set, Pacific J. Math. **321** (2022), 309–343, DOI: 10.2140/pjm.2022.321.309

Fold cobordisms and a Poincaré-Hopf type theorem for the signature, Algebr. Geom. Topol. **22** (2022), 2533–2586, DOI: 10.2140/agt.2022.22.2533

Concordance of decompositions given by defining sequences, J. Knot Theory Ramifications **31** (2022), DOI: https://doi.org/10.1142/S0218216522500626

Interlacement of double curves of immersed spheres, Disc. Comp. Geom. **55** (2016), 550–570, DOI: https://doi.org/10.1007/s00454-016-9770-x

joint work with A. Stipsicz, Singular maps on exotic 4-manifold pairs, Algebr. Geom. Topol. **13** (2013), 1709–1731, DOI: 10.2140/agt.2013.13.1709

joint work with A. Stipsicz, Maps on 3-manifolds given by surgery, Pacific J. Math. **257** (2012), 9–35, DOI: 10.2140/pjm.2012.257.9

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Fold cobordisms and stable homotopy groups, Studia Scient. Math. Hungar. **46** (2009), 437–447, DOI: https://doi.org/10.1556/sscmath.2009.1100

Fold maps and immersions from the viewpoint of cobordism, Pacific J. Math. **239** (2009), 317–342, DOI: 10.2140/pjm.2009.239.317

Cobordism group of fold maps of oriented 3-manifolds into the plane, Acta Math. Hungar. **117** (2007), 1–25, DOI: https://doi.org/10.1007/s10474-007-5101-2

Cobordism group of Morse functions on unoriented surfaces, Kyushu J. Math. **59** (2005), 351–363, DOI: https://doi.org/10.2206/kyushujm.59.351

**Book chapters:**   joint work with S. Behrens and D. Zuddas, The ball to ball theorem, The disc embedding theorem, 131–151, Oxford University Press, Oxford, 2021, DOI: https://doi.org/10.1093/oso/9780198841319.001.0001

joint work with X. Cui, P. Orson and N. Sunukjian, The Whitehead decomposition, The disc embedding theorem, 95–102, Oxford University Press, Oxford, 2021, DOI: https://doi.org/10.1093/oso/9780198841319.001.0001

joint work with C. W. Davis, M. H. Kim and H. Rüping, Decomposition space theory and the Bing shrinking criterion, The disc embedding theorem, 63–75, Oxford University Press, Oxford, 2021, DOI: https://doi.org/10.1093/oso/9780198841319.001.0001

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| **Books:** | joint work with S. Behrens, M. H. Kim, M. Powell, and A. Ray, editors, The disc embedding theorem, Oxford University Press, 2021, DOI: https://doi.org/10.1093/oso/9780198841319.001.0001 |
| **Refereed conference proceedings:** | Cobordism invariants of fold maps, Real and complex singularities, Contemporary Mathematics **459** (2008), 103–115, DOI: http://dx.doi.org/10.1090/conm/459 |
| **Preprints:** | Existence of fold maps of six-dimensional manifolds into $\mathbb{R}^5$, to appear. |
| | Approximate solutions to the spread of influenza A virus infection, to appear. |
| | Decomposition space theory, arXiv:2103.02977. |
| | Cobordisms of fold maps of 4-manifolds into the space, arXiv:0802.0332. |
| **Non-refereed conference proceedings:** | joint work with T. Terpai, $\gamma$ operations in K-theory and existence of singular maps, RIMS Kôkyûroku **1707** (Singularity theory of smooth maps and related geometry, 2009) 2010, 149–152. |
| | Cobordisms of fold maps, stably framed manifolds and a Poincaré-Hopf type theorem for the signature, Proceedings of Geometry of singularities and manifolds, Kusatsu, 2008, (2009). |
| | Pontryagin-Thom-Szűcs type construction for non-positive codimensional singular maps with prescribed singular fibers, The second Japanese-Australian Workshop on Real and Complex Singularities, RIMS Kôkyûroku **1610** (2008), 66–79. |
| | Cobordisms of fold maps, RIMS Kôkyûroku **1540** (Conference on Singularities and o-minimal category, 2006) 2007, 43–55. |
| **Presentations as invited speaker at conferences:** | (joint work with T. Terpai) Singularity theory of smooth maps and related geometry, RIMS workshop, Tokyo, Dec 2009 |
| | Four Dimensional Topology, Hiroshima Topology Conference, Hiroshima University, Jan 2009 |
| | Singularities and cobordism in low dimensions, Geometry of singularities and manifolds, Kusatsu, Japan, Sep 2008 |
| | Cobordisms of singular maps from 4-manifolds, Four Dimensional Topology, Hiroshima Topology Conference, Hiroshima University, Feb 2008 |
| | Fold maps, immersions and cobordism, The Second Japanese-Australian Workshop on Real and Complex Singularities, RIMS, Kyoto, Nov 2007 |
| | History and logic of mathematical discovery (Imre Lakatos: Proofs and refutations), Conference in Honor of the 60th Birthday of Yoshifumi Ando, Kinki University, |

Osaka, Oct 2007

Cobordism of fold maps, The 3rd COE Conference for Young Researchers, Hokkaido University, Feb 2007

Cobordisms of fold maps, Singularities and O-minimal Category, RIMS, Kyoto, Nov 2006

Cobordisms of negative codimensional fold maps, 9th International Workshop on Real and Complex Singularities, ICMC–USP–Sao Carlos, Brazil, Jul 2006

Cobordisms of $-1$ codimensional fold maps, Singularity Theory, Local vs Global, Yamaguchi University, Jun 2006

Cobordisms of $-1$ codimensional fold maps, Manifolds and their Mappings, 5th International Siegen Topology Symposium, University of Siegen, Jul 2005

**Seminar talks:**  Topology Seminar, Kyushu University, Feb 2023

KFKI Campus, Csilleberc, Hungary, Feb 2017

Junior Trimester Program Topology, Hausdorff Research Institute for Mathematics, Bonn, Germany, Dec 2016

Floer Graduate Seminar, Columbia University, Nov 2008

Topology Seminar, University of Virginia, Nov 2008

Algebraic Geometry and Differential Topology Seminar, Alfréd Rényi Institute of Mathematics, Oct 2007 and Jun 2008

Graduate Student Seminar, Kyushu University, 2006–2007

Topology Seminar, Kyushu University, Apr 2006

**References:**  R. Furutani and Y. Koda, Stable maps and hyperbolic links, Comm. Anal. Geom. **31** (2023), 1405–1432.

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D. J. Wrazidlo, Cusp cobordism group of Morse functions, J. Topol. Anal. **15** (2023), 615–649.

K. Hayden, T. E. Mark and L. Piccirillo, Exotic Mazur manifolds and knot trace invariants, Adv. Math. **391** (2021), Paper No. 107994, 30 pp.

T. Yamamoto, Fold cobordism groups of Morse functions on surfaces with boundary, J. Math. Sci. (N.Y.) **255** (2021), 805–824.

N. Hamada, K. Hayano, S. Ichiki, Y. Kabata and H. Teramoto, Topology of Pareto sets of strongly convex problems. SIAM J. Optim. **30** (2020), 2659–2686.

S. Maksymenko, Deformations of functions on surfaces by isotopic to the identity diffeomorphisms, Topology Appl. **282** (2020), 107312, 48 pp.

C. M. Ruiz, Morin singularities of collections of one-forms and vector fields, J. Singul. **22** (2020), 278–314.

A. Kravchenko and B. Feshchenko, Automorphisms of Kronrod-Reeb graphs of Morse functions on 2-torus, Methods Funct. Anal. Topology **26** (2020), 88–96.

A. Szűcs and T. Terpai, Classifying spaces for projections of immersions with controlled singularities, Acta Math. Hungar. **160** (2020), 273–291.

M. Ishikawa and Y. Koda, Stable maps and branched shadows of 3-manifolds, Math. Ann. **367** (2017), 1819–1863.

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M. Gromov, Singularities, expanders and topology of maps. I. Homology versus volume in the spaces of cycles, Geom. Funct. Anal. **19** (2009), 743–841.

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R. Sadykov, Bordism groups of solutions to differential relations, Algebr. Geom. Topol. **9** (2009), 2311–2347.

T. Terpai, Fibration of classifying spaces in the cobordism theory of singular maps, Tr. Mat. Inst. Steklova **267** (2009), Osobennosti i Prilozheniya, 280–287, reprinted in Proc. Steklov Inst. Math. **267** (2009), 270–277.

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T. Yamamoto, Singular fibers of two-colored maps and cobordism invariants, Pacific J. Math. **234** (2008), 379–398.

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