

## Publications

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- 2014 Categorical group invariants of 3-manifolds, with J. C. Gómez-Larrañaga, F. González-Acuña, preprint.  
Old and new categorical invariants of manifolds, with Gómez -Larrañaga and González-Acuña, to appear in *Boletin Soc. Mat. Mexicana*.  
On 3-manifolds with torus or Klein bottle category 2, with Dongxu Wang, *Canadian Mathematical Bulletin*, <http://dx.doi.org/10.4153/CMB-2013-035-3>. (e-published 2013).
- 2013 On the  $K$ -category of 3-manifolds for  $K$  a wedge of spheres or projective planes, with Gómez -Larrañaga and González-Acuña, *Topology Proc.* 44 (2014), 49-58. (e-published May, 2013).  
Amenable categories of 3-manifolds, with Gómez -Larrañaga and González-Acuña, *Algeb. Geometric Topology* 13 (2013), 905-925.
- 2012  $S^2$ - and  $P^2$ -category of manifolds, with Gómez -Larrañaga and González-Acuña, *Topology Appl.* 159 (2012), 1052-1058.  
Higher dimensional manifolds with  $S^1$ -category 2, with Gómez -Larrañaga and González-Acuña, *Math. Z.* 271 (2012), 167173.
- 2011 Links in  $S^3$  of  $S^1$ -category 2, with Gómez-Larrañaga and González-Acuña, *Topology Proc.* 38 (2011), 165-171.
- 2010 Manifolds with  $S^1$ -category 2 have cyclic fundamental groups, with Gómez -Larrañaga and González-Acuña, (2010). *Math. Z.* 266, No. 4, 783-788.  
Coverings of 3-manifolds by three open solid tori, with Gómez -Larrañaga and González-Acuña, *Jour. Knot Theory Ram.* 19 (2010), 809-820.  
Coverings of 3-manifolds by open balls and two open solid tori, with Gómez -Larrañaga and González-Acuña, *Topology and its Appl.* 157 (2010), 179-181.

- 2008 Fundamental groups of manifolds with  $S^1$ -category 2, with Gómez-Larrañaga, González-Acuña, *Math. Z.* 259 (2008), 419–432.
- 2007 A note on Hempel-McMillan coverings of 3-manifolds, with Gómez-Larrañaga, González-Acuña, *Topology Appl.* 154 (2007), 1363–1367.
- 2004 3-Manifolds that are covered by two open Bundles, with Gómez-Larrañaga, González-Acuña, *Bol. Soc. Mat. Mexicana (3) Vol. 10* (2004), 171-179.
- 2002 Seifert-Takens-Singhof fillings of 3-manifolds, with Gómez -Larrañaga, *Topology Proceedings* 26 (2002), 187-197.
- Seifert Unions and Spaces of Graphs, with Gómez -Larrañaga, *J. Knot theory Ramifications.* 11 (2002), 277–282.
- Singhof fillings of closed 3-manifolds, with Gómez -Larrañaga, *Manuscripta Mathematica* 107 (2002), 15-23.
- Seifert unions of solid tori, with Gómez -Larrañaga, *Math. Zeitschrift* 240 (2002), 767–785.
- 1999 with Gómez-Larrañaga and Nuñez, Stiefel-Whitney Surfaces and the tri-genus of non orientable 3-manifolds, *Manuscripta Mathematica* 100 (1999), 405-422.
- 1995 A test for admissibility for 2-dimensional, continuous directed fields on planar surfaces, *Math.Comp.Modelling* 21 (1995) , 31–33.
- Stiefel-Whitney Surfaces and Decompositions of 3-manifolds into Handlebodies, with Gómez-Larrañaga and Nuñez *Topology and Applications* 60 (1995), 267–280.
- 1994 The Seifert Fiber Space conjecture and Torus Theorem for non-orientable 3-manifolds, with W. Whitten, *Canadian Math. Bulletin* 37 (1994), 482–489.
- Orientable 3-fillings of nonorientable 3-manifolds, with Gómez-Larrañaga and V.Nuñez *Conf. Proc. Lecture Notes Geom. Topology, III, Int. Press, Cambridge, MA* (1994), 35–40.
- 1992 3-manifolds that are unions of three handlebodies of genus at most 1, with Gómez-Larrañaga, *Knots 90 Proc. Intern. Conf. Knot theory and rel. topics, Osaka, Japan* (1992), 477–487.

- 1992 Dehn fillings on once punctured Klein bottle bundles, with W., Raspopović, *P. Math. Proc. Camb. Phil. Soc.* 112 (1992), 255–270.
- 1991 Products of Commutators and Squares in Free Groups. *Journal Pure and Applied Algebra* 75 (1991), 271–275.  
Free involutions on certain 3-manifolds, *Yokohama Math. J.* 38 (1991), 23–27.
- 1988 Realizing continuous 2-dimensional directed fields by vector fields and an algorithm to remove dichotomous ambiguity in a discrete field, with O’Brien and Cushman-Roisin *Math. Comput. Modelling* 10 (1988), 853–862.
- 1987 On Nielsen’s theorem for 3-manifolds, with J.L.Tollefson, *Yokohama Mathematical Journal* 35 (1987), 1–20.
- 1986 Graphs and projective planes in 3-manifolds, with S.Negami, *Internat. J. Math. and Math. Sci.* 9(3) (1986), 551–560.
- 1985 Oscillations and Rotations of elliptical warm-core rings, with Cushman-Roisin and Nof *Journal of Geophysical Research* 90 (1985), 11756–11764.
- 1983 Deforming homotopy involutions in 3-manifolds to involutions II, with J.L.Tollefson, *Topology* 22 (1983), 169–173.
- 1981 Normalizers of incompressible surfaces in 3-manifolds, *Glasnik Matematički, Vol. 16(36)* (1981), 145–150.
- 1978 Deforming homotopy involutions of 3-manifolds to involutions, with J.L.Tollefson, *Topology* 17 (1978), 349–365.
- 1977 On Punctured balls in manifolds, *Pacific J. Math.* 68 (1977), 81–83.
- 1975 Cyclic normal subgroups and 3-manifolds, with C.Gordon, *Topology* 14 (1975), 305–309.  
Some finitely presented non 3-manifold groups, *Proc. Amer. Math. Soc.* 53 (1975), 497–500.

- 1974 Elementary Surgery on Seifert fiber spaces, *Yokohama Math J* 22(1974), 135–139.
- 1973 Almost sufficiently large Seifert fiber spaces, *Mich. Math. J.* 20 (1973), 217–223.
- Testing 3-manifolds for projective planes, *Pacific J. Math.* 44 (1973), 139–145.
- 3-manifolds that are sums of solid tori and Seifert fiber spaces, *Proc. Amer. Math. Soc.* 37 (1973), 609–614.
- 1972 Simply-connected branched coverings of  $S^3$ , with C.Gordon, *Proc. Amer. Math. Soc.* 35 (1972), 287–288.
- On certain fiberings of  $M^2 \times S^1$ , *Proc. Amer. Math. Soc.* 34 (1972), 280–286.
- On Kneser’s conjecture for bounded 3-manifolds, *Proc. Camb. Philos. Soc.* 71 (1972), 243–246.
- 1971 On 3-manifolds with sufficiently large decompositions, *Canad. J. Math.* 23 (1971), 746–748. Corrdigendum, *ibid.* 25(1973), 1120.
- On subnormal subgroups of fundamental groups of certain 3-manifolds, *Mich. Math. J.* 18 (1971), 393–399.
- A counterexample to a generalized loop theorem, *Yokohama Math. J.* 19 (1971), 141–142.
- 1970 On the existence of incompressible surfaces in certain 3-manifolds, II, *Proc. Amer. Math. Soc.* 25 (1970), 429–432.
- 1969 On the existence of incompressible surfaces in certain 3-manifolds, I, *Proc. Amer. Math. Soc.* 23 (1969), 704–707.
- On  $P^2$ -irreducible 3-manifolds, *Bull. Amer. Math. Soc.* 75 (1969), 772–775.

### Monograph and Book Chapters

- 1989 Essential tori and Klein bottles in nonorientable 3-manifolds of genus 2, with I.Cardona, *Geometry and Topology, Edited by Rassias, World Sci. Publ. (1989)*, 31–57.

- 1985 Surface groups in 3-manifold groups, with J.Rakovec, *Algebraic and Differential Topology – Global Differential Geometry, Teubner Texte zur Mathematik 70 (1985)*, 101–133.
- 1980 “Topology of 3-dimensional Seifert Fibered Spaces”, translation of Seifert’s paper “Topologie dreidimensionaler gefaserner Räume”, in *Seifert and Threlfall: A Textbook of Topology, Academic Press (1980)*, 359-422.