Miguel Domínguez Vázquez

Universidade de Santiago de Compostela − Departamento de Matemáticas ∎ CITMAga
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BIOGRAPHICAL

Born September 29, 1985, in Ourense (Spain).

EMPLOYMENT

Profesor Titular de Universidad. Universidade de Santiago de Compostela, February 2024 − present.

Ramón y Cajal Researcher. Universidade de Santiago de Compostela, May 2019 − February 2024.

Profesor Ayudante Doctor. Universidad Autónoma de Madrid, January 2019 − April 2019.

Marie Skłodowska-Curie Fellow. ICMAT-CSIC, Madrid, January 2018 − January 2019.

Profesor Ayudante Doctor. Universidad Autónoma de Madrid, September 2017 − January 2018.

Marie Skłodowska-Curie Fellow. ICMAT-CSIC, Madrid, April 2017 − September 2017.

Juan de la Cierva-training Fellow. ICMAT-CSIC, Madrid, January 2016 − April 2017.

Iberoamerican Visiting Researcher. IMPA, Rio de Janeiro, November 2013 − December 2015.

Postdoctoral Researcher. Universidade de Santiago de Compostela, July 2013 − October 2013.

FPU Fellow of the Spanish Ministry of Education. Univ. Santiago de Compostela, August 2009 − July 2013.

EDUCATION

PhD in Mathematics. Universidade de Santiago de Compostela, March 2013.
Thesis: *Isoparametric foliations and polar actions on complex space forms.*
Advisor: José Carlos Díaz Ramos

Graduate in Mathematics (with average grade 9.92 out of 10). Univ. Santiago de Compostela, July 2008.

RESEARCH INTERESTS

Riemannian geometry and geometric analysis: submanifold theory, symmetric spaces, Lie group isometric actions, isoparametric foliations, polar actions, cohomogeneity one actions, overdetermined boundary problems of partial differential equations.

PUBLICATIONS

J. DeVito, M. Domínguez-Vázquez, D. González-Álvaro, A. Rodríguez-Vázquez: Positive Ric_2 curvature on products of spheres and their quotients via intermediate fatness, arXiv:2410.18846v1.

M. Domínguez-Vázquez, A. Kollross: On isoparametric foliations of complex and quaternionic projective spaces, arXiv:2409.06032v1.

M. Domínguez-Vázquez, V. Sanmartín-López: Isoparametric hypersurfaces in symmetric spaces of noncompact type and higher rank, *Compositio Math.* 160 (2024), 451–462.

M. Domínguez-Vázquez, A. Enciso, D. Peralta-Salas: Overdetermined boundary problems with nonconstant Dirichlet and Neumann data, *Anal. PDE* 16 (2023), no. 9, 1989–2003.

J. C. Díaz-Ramos, M. Domínguez-Vázquez, T. Otero: Cohomogeneity one actions on symmetric spaces of noncompact type and higher rank, *Adv. Math.* 428 (2023), 109165.

J. C. Díaz-Ramos, M. Domínguez-Vázquez, O. Pérez-Barral: Homogeneous CR submanifolds of complex hyperbolic spaces, *Publ. Math.* 67 (2023), 891–912.

J. C. Díaz-Ramos, M. Domínguez-Vázquez, T. Hashinaga: Homogeneous Lagrangian foliations on complex space forms, *Proc. Amer. Math. Soc.* 151 (2023), no. 2, 823–833.

M. Domínguez-Vázquez, D. González-Álvaro, L. Mouillé: Infinite families of manifolds of positive k^{th}-intermediate Ricci curvature with k small, *Math. Ann.* (2022), doi:10.1007/s00208-022-02420-w, 39 pp.

J. C. Díaz-Ramos, M. Domínguez-Vázquez, A. Rodríguez-Vázquez: Homogeneous and inhomogeneous isoparametric hypersurfaces in rank one symmetric space, *J. Reine Angew. Math.* 779 (2021), 189–222.

M. Domínguez-Vázquez, O. Pérez-Barral: Existence and uniqueness of inhomogeneous ruled hypersurfaces with shape operator of constant norm in the complex hyperbolic space, *Internat. J. Math.* 32 (2021), no. 08, 2150049, 4 pp.

M. Domínguez-Vázquez, V. Sanmartín-López, H. Tamaru: Codimension one Ricci soliton subgroups of solvable Iwasawa groups, *J. Math. Pures Appl.* 152 (2021), 69–93.

M. Domínguez-Vázquez, A. Enciso, D. Peralta-Salas: Piecewise smooth stationary Euler flows with compact support via overdetermined boundary problems, *Arch. Rational Mech. Anal.* 239 (2021), 1327–1347.

M. Domínguez-Vázquez, J. M. Manzano: Isoparametric surfaces in $\mathbb{E}(\kappa, \tau)$-spaces, *Ann. Sc. Norm. Super. Pisa Cl. Sci.* (5) 22 (2021), 269–285.

J. C. Díaz-Ramos, M. Domínguez-Vázquez, V. Sanmartín-López: Submanifold geometry in symmetric spaces of noncompact type, *São Paulo J. Math. Sci.* (Special Section: An Homage to Manfredo P. do Carmo) 15 (2021), 75–110.

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J. C. Díaz-Ramos, M. Domínguez-Vázquez, A. Kollross: On homogeneous manifolds whose isotropy actions are polar, *Manuscripta Math.* 161 (2020), 15–34.

M. Domínguez-Vázquez, O. Pérez-Barral: Ruled hypersurfaces with constant mean curvature in complex space forms, *J. Geom. Phys.* 144 (2019), 121–125.

M. Domínguez-Vázquez, A. Enciso, D. Peralta-Salas: Solutions to the overdetermined boundary problem for semilinear equations with position-dependent nonlinearities, *Adv. Math.* 351 (2019), 718–760.

M. Domínguez-Vázquez, C. Gorodski: Polar foliations on quaternionic projective spaces, *Tohoku Math. J. (2)* 70 (2018), no. 3, 353–375.

J. C. Díaz-Ramos, M. Domínguez-Vázquez, C. Vidal-Castiñeira: Strongly 2-Hopf hypersurfaces in complex projective and hyperbolic planes, *Ann. Mat. Pura Appl. (4)* 197 (2018), no. 2, 469–486.

J. C. Díaz-Ramos, M. Domínguez-Vázquez, C. Vidal-Castiñeira: Isoparametric submanifolds in two-dimensional complex space forms, *Ann. Global Anal. Geom.* 53 (2018), no. 2, 205–216.

J. C. Díaz-Ramos, M. Domínguez-Vázquez, A. Kollross: Polar actions on complex hyperbolic spaces, *Math. Z.* 287 (2017), no. 3-4, 1183–1213.

J. C. Díaz-Ramos, M. Domínguez-Vázquez, V. Sanmartín-López: Isoparametric hypersurfaces in complex hyperbolic spaces, *Adv. Math.* 314 (2017), 756–805.

J. C. Díaz-Ramos, M. Domínguez-Vázquez, C. Vidal-Castiñeira: Real hypersurfaces with two principal curvatures in complex projective and hyperbolic planes, *J. Geom. Anal.* 27 (2017), no. 1, 442–465.

M. Domínguez-Vázquez: Isoparametric foliations on complex projective spaces, *Trans. Amer. Math. Soc.* 368 (2016), no. 2, 1211–1249.

M. Domínguez-Vázquez: Canonical extension of submanifolds and foliations in noncompact symmetric spaces, *Int. Math. Res. Not. (IMRN)* 2015 (2015), no. 22, 12114–12125.

J. Berndt, M. Domínguez-Vázquez: Cohomogeneity one actions on some noncompact symmetric spaces of rank two, *Transform. Groups* 20 (2015), no. 4, 921–938.

J. C. Díaz-Ramos, M. Domínguez-Vázquez: Isoparametric hypersurfaces in Damek-Ricci spaces, *Adv. Math.* 239 (2013), 1–17.

J. C. Díaz-Ramos, M. Domínguez-Vázquez: Inhomogeneous isoparametric hypersurfaces in complex hyperbolic spaces, *Math. Z.* 271 (2012), 1037–1042.

J. C. Díaz-Ramos, M. Domínguez-Vázquez: Non-Hopf real hypersurfaces with constant principal curvatures in complex space forms, *Indiana Univ. Math. J.* 60 (2011), no. 3, 859–882.

M. Domínguez-Vázquez: Real hypersurfaces with constant principal curvatures in complex space forms, *Differential Geom. Appl.* 29 (2011), suppl. 1, 65–70.

BOOK CHAPTERS

J. C. Díaz-Ramos, M. Domínguez-Vázquez, T. Otero: Homogeneous hypersurfaces in symmetric spaces, *Spanish Network of Geometric Analysis − 2007-2021*, RSME Springer Series, to appear.

J. C. Díaz-Ramos, M. Domínguez-Vázquez, V. Sanmartín-López: Anti-De Sitter spacetimes and isoparametric hypersurfaces in complex space forms, *Lorentzian Geometry and Related Topics, GELOMA 2016, Málaga*, Springer Proceedings in Mathematics & Statistics, Vol. 211, 2017.

M. Domínguez-Vázquez: On the existence of inhomogeneous isoparametric foliations of higher codimension on complex projective spaces, *Pure and Applied Differential Geometry – PADGE 2012 (In Memory of Franki Dillen)*, 116–125, Shaker Verlag, Aachen, 2013.

M. Domínguez-Vázquez: Some interesting families of non-Hopf real hypersurfaces in complex space forms, *Proceedings of the 17th International Workshop on Differential Geometry and Related Fields*, 124–133, NIMS (Daejeon), Vol. 17, 2013.

M. Domínguez-Vázquez: On isoparametric hypersurfaces in complex hyperbolic spaces, *International Meeting on Differential Geometry (Córdoba 2010)*, 71–92, 2013.

M. Domínguez-Vázquez: On an inhomogeneous isoparametric family of hypersurfaces with constant principal curvatures in the Cayley hyperbolic plane, *XX International Fall Workshop on Geometry and Physics*, 169–173, AIP Conf. Proc., 1460, Amer. Inst. Phys., 2012.

OTHER PUBLICATIONS

M. Domínguez-Vázquez: *Isoparametric foliations and polar actions on complex space forms.* PhD thesis, Publicaciones del Departamento de Geometría y Topología 126, Univ. Santiago de Compostela, 2013.

M. Domínguez Vázquez, A. Martínez Calvo, J. Seoane Bascoy (editors): *As matemáticas do veciño. Actas do Seminario de Iniciación á Investigación 2010*, Institute of Mathematics, Univ. Santiago de Compostela (2011).

M. Domínguez Vázquez, A. Martínez Calvo, J. Seoane Bascoy (editors): *As matemáticas do veciño. Actas do Seminario de Iniciación á Investigación 2009*, Institute of Mathematics, Univ. Santiago de Compostela (2010).

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M. Domínguez-Vázquez: *Hipersuperficies con curvaturas principais constantes nos espazos proxectivo e hiperbólico complexos.* Advanced Studies Diploma thesis, Publicacións del Departamento de Geometría y Topología 118, Univ. Santiago de Compostela, 2010.

INVITED TALKS
(CONFERENCES)

Joint Perspectives in Geometry, Algebra and Topology, CRM-Barcelona (Spain), 01-05/07/2024.
Generalizing positive curvature and fatness.

Geometry, Topology and Applications Days, Braga (Portugal), 26-27/09/2023.
Isoparametric families of hypersurfaces in symmetric spaces of higher rank.

VI International Workshop on Non-Associative Algebras in Madrid, Madrid (Spain), 19-23/06/2023.
Cohomogeneity one isometric actions on symmetric spaces of noncompact type.

Workshop on Manifolds with Symmetries, Stuttgart (Germany), 28-30/03/2022.
Extension of submanifolds in symmetric spaces of noncompact type.

Encuentro de la Red Española de Análisis Geométrico (REAG), Granada (Spain), 10-11/03/2022.
Stationary Euler flows with compact support via overdetermined elliptic problems.

Geometry of symmetric spaces and group actions, Osaka City University (Japan), online, 17-19/02/2022.
Cohomogeneity one actions on symmetric spaces of noncompact type and higher rank.

Congreso Bienal de la RSME, Ciudad Real (Spain), 17-21/01/2022.
Extending submanifolds from Euclidean spaces to symmetric spaces of noncompact type.

V Encuentro Conjunto RSME-SMM, online conference, 14-18/06/2021.
Positive intermediate Ricci curvature on homogeneous spaces.

Encuentro de Topología 2019, Santiago de Compostela (Spain), 18-19/10/2019.
Cohomogeneity one isometric actions on quaternionic hyperbolic spaces.

Workshop on the Isoparametric Theory, Beijing (China), 02-06/06/2019.
Homogeneous and inhomogeneous isoparametric hypersurfaces in symmetric spaces of noncompact type.

Encuentro de la Red Española de Análisis Geométrico, Murcia (Spain), 10/04/2019.
Isoparametric surfaces in $\mathbb{E}(\kappa, \tau)$-spaces.

II Joint Meeting Brazil-Spain Mathematics (RSME-SEMA-SBMAC-SBM), Cádiz (Spain), 11-14/12/2018.
Nonlinear overdetermined boundary problems in Riemannian manifolds.

Preliminary talks of the ICM Satellite Conference Modern Trends in Differential Geometry, São Paulo (Brazil), 19-20/07/2018.
On isoparametric surfaces in homogeneous 3-spaces.

Hiroshima Differential Geometry Day 2018, Hiroshima (Japan), 21/04/2018.
Isoparametric surfaces in homogeneous 3-manifolds.

Primer Encuentro Conjunto RSME-UMA, Buenos Aires (Argentina), 11-15/12/2017.
Isoparametric hypersurfaces in the complex hyperbolic space.

IV Encuentro Conjunto RSME-SMM, Valladolid (Spain), 19-22/07/2017.
Isoparametric hypersurfaces in complex hyperbolic spaces.

XXV International Fall Workshop on Geometry and Physics, IEM-CSIC, Madrid (Spain), 29/08-02/09/2016.
Isoparametric submanifolds of complex space forms.

First Joint Meeting Brazil-Spain in Mathematics (SBM-SBMAC-RSME), Fortaleza (Brazil), 07-10/12/2015.
Classification of isoparametric hypersurfaces in complex hyperbolic spaces.

Congreso de la RSME 2015, Granada (Spain), 02-06/02/2015.
Two construction methods of isoparametric hypersurfaces in noncompact symmetric spaces.

The second Japanese-Spanish workshop on Differential Geometry, Tokyo Institute of Technology (Japan), 05-10/02/2014.
Isoparametric submanifolds of complex projective spaces.

17th International Workshop on Differential Geometry, NIMS, Daejeon (South Korea), 30/09-02/10/2013.
Some interesting families of non-Hopf real hypersurfaces in complex space forms.

Geometric Analysis Seminar GAS-UV13, Valencia (Spain), 04-07/09/2013.
The horospherical decomposition and new isoparametric hypersurfaces in noncompact symmetric spaces.

Geometry Meeting 2012, Ferrol (Spain), 26/10/2012.
Polar foliations for beginners.

Differential Geometry Days in honour of Luis A. Cordero, Santiago de Compostela (Spain), 27-29/06/2012.
Isoparametric foliations on complex projective spaces.

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Conference in Geometry and Global Analysis, celebrating P. Gilkey's 65th birthday, Santiago de Compostela (Spain), 13-16/12/2010.
Principal curvatures of isoparametric hypersurfaces in complex hyperbolic spaces.

Geometry Meeting 2010, Ferrol (Spain), 07/10/2010.
The classification problem of isoparametric hypersurfaces.

Workshop on Hypersurface Geometry and Integrable Systems, Tohoku University, Sendai (Japan), 24-27/08/2010.
Real hypersurfaces with constant principal curvatures in complex projective and hyperbolic spaces.

Symmetric spaces seminar, online seminar, 20/04/2022.
Polar foliations on symmetric spaces.

Universidad de Murcia, Seminario de Geometría Diferencial y Convexa, online seminar, 16/03/2022.
Extension of submanifolds from Euclidean spaces to symmetric spaces.

Differential Geometry Seminar Torino, online seminar (Italy), 08/02/2022.
Inhomogeneous isoparametric hypersurfaces in symmetric spaces of noncompact type.

Virtual Seminar on Geometry with Symmetries, online seminar (global), 26/01/2022.
Cohomogeneity one actions on symmetric spaces of noncompact type.

University of Oregon, Geometry and Topology Seminar, online seminar (USA), 19/10/2021.
Extension of submanifolds in symmetric spaces of noncompact type.

Universidad Politécnica de Madrid, A. Giraldo and S. Sastre Seminar, Madrid (Spain), 23/09/2021.
Stationary Euler flows via overdetermined elliptic problems.

Universidade de Brasília, Geometry Seminar, online seminar (Brazil), 17/02/2021.
Positive intermediate Ricci curvature on homogeneous and symmetric spaces.

University of Oregon, Geometry and Topology Seminar, online seminar (USA), 02/12/2020.
Homogeneous and inhomogeneous isoparametric hypersurfaces in quaternionic hyperbolic spaces.

Universität Münster, Differential Geometry Seminar, online seminar (Germany), 15/06/2020.
Cohomogeneity one actions and inhomogeneous isoparametric hypersurfaces in quaternionic hyperbolic spaces.

University of Oklahoma, Geometry Seminar, Norman (USA), 03/10/2018.
On isoparametric hypersurfaces in noncompact symmetric spaces.

University of Notre Dame, Felix Klein Seminar, South Bend (USA), 26/09/2018.
Overdetermined elliptic problems in Riemannian manifolds.

Washington University in St. Louis, Geometry Seminar, St. Louis (USA), 14/09/2018.
Isoparametric surfaces in homogeneous 3-manifolds.

Washington University in St. Louis, Colloquium of the Department of Mathematics and Statistics, St. Louis (USA), 13/09/2018.
Polar foliations on symmetric spaces.

IMPA, Differential Geometry Seminar, Rio de Janeiro (Brazil), 12/07/2018.
Cohomogeneity one actions on symmetric spaces of noncompact type.

Universidade de Santiago de Compostela, Vidal Abascal Seminar, Santiago (Spain), 07/06/2018.
Isoparametric surfaces in homogeneous spaces.

Universidad de Murcia, Rey Pastor Seminar, Murcia (Spain), 25/05/2017.
Cohomogeneity one actions on symmetric spaces of noncompact type.

Universidade de Santiago de Compostela, Vidal Abascal Seminar, Santiago (Spain), 21/07/2016.
Isoparametric hypersurfaces in overdetermined PDE problems.

Universidade de Santiago de Compostela, Vidal Abascal Seminar, Santiago (Spain), 03/03/2016.
Classification of polar foliations in the quaternionic projective space.

Universidade de São Paulo, Geometry Seminar, São Paulo (Brazil), 23/10/2015.
Polar foliations on quaternionic projective spaces.

IMPA, Differential Geometry Seminar, Rio de Janeiro (Brazil), 01/10/2015.
Canonical extension of submanifolds in noncompact symmetric spaces.

Universidade de São Paulo, Geometry Seminar, São Paulo (Brazil), 03/07/2015.
Extending submanifolds in the symmetric spaces of noncompact type.

IMPA, Differential Geometry Seminar, Rio de Janeiro (Brazil), 09/10/2014.
Polar foliations on complex projective spaces.

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Universidade de São Paulo, Geometry Seminar, São Paulo (Brazil), 30/05/2014.
Inhomogeneous isoparametric foliations and prime numbers.

Universidade de Brasília, Geometry Seminar, Brasilia (Brazil), 31/03/2014.
Homogeneity of isoparametric submanifolds and prime numbers.

IMPA, Differential Geometry Seminar, Rio de Janeiro (Brazil), 16/01/2014.
Hypersurfaces with two principal curvatures in nonflat complex space forms.

Universidade Federal Fluminense, Geometry Seminar, Rio de Janeiro (Brazil), 07/11/2013.
A geometric characterisation via prime numbers.

King's College London and University College London, Geometry Seminar, London (UK), 07/05/2013.
Inhomogeneous isoparametric foliations.

ICMAT, Geometry Seminar, Madrid (Spain), 11/02/13.
The classification problem of isoparametric foliations.

Universität Stuttgart, Geometry and Topology Seminar, Stuttgart (Germany), 19/06/2012.
Inhomogeneous isoparametric families on complex projective spaces.

Universität zu Köln, Geometry Seminar, Cologne (Germany), 19/04/2011.
Homogeneous and isoparametric hypersurfaces in non-compact rank-one symmetric spaces.

OTHER TALKS

International Congress of Mathematicians - ICM 2018, Rio de Janeiro (Brazil), 01-09/08/2018.
Existence and symmetry of solutions to overdetermined boundary problems on Riemannian manifolds.

Pure and Applied Differential Geometry - PADGE 2017, Leuven (Belgium), 21-25/08/2017.
Overdetermined boundary value problems on Riemannian manifolds.

Geometry and Dynamics of Foliations, ICMAT, Madrid (Spain), 01-05/09/2014.
Classification of isoparametric foliations on complex projective spaces.

XVIII Escola de Geometria Diferencial, Brasília (Brazil), 28/07-01/08/2014.
Polar actions on complex hyperbolic spaces.

Congreso de Jóvenes Investigadores de la RSME, Seville (Spain), 16-20/09/2013.
Isoparametric families in Damek-Ricci spaces.

Conference on Pure and Applied Differential Geometry PADGE 2012, Leuven (Belgium), 27-30/08/2012.
On the existence of inhomogeneous isoparametric foliations of higher codimension on complex projective spaces.

VI International Meeting on Lorentzian Geometry – Gelogra 2011, Granada (Spain), 06-09/09/2011.
Families of parallel CMC hypersurfaces in noncompact rank-one symmetric spaces.

International Meeting on Differential Geometry, Córdoba (Spain), 15-17/11/2010.
On isoparametric hypersurfaces in complex hyperbolic spaces.

DGA 2010 – Differential Geometry and its Applications, Brno (Czech Republic), 27-31/08/2010.
Real hypersurfaces with constant principal curvatures in complex space forms.

GRANTS AND
AWARDS

Ramón y Cajal Fellowship. Ministry of Science, Innovation and Universities (Spain), 2018.

Marie Skłodowska-Curie Individual Fellowship (Standard EF). European Commission, 2017.

Extraordinary PhD Award. University of Santiago de Compostela (Spain), 2016.

Juan de la Cierva-training Fellowship. Ministry of Economy and Competitiveness (Spain), January 2016 − December 2017.

Iberoamerican Visiting Researcher Grant. IMPA (Brazil), November 2013 − December 2015.

Doctor Europeus. University of Santiago de Compostela, 2013.

Grant of the National Programme for the Formation of University Professors (FPU). Ministry of Education (Spain), August 2009 − July 2013.

Third position in the National Graduation Award. Ministry of Education (Spain), 2008.

Galician Graduation Award. Galician Government (Spain), 2008.

Extraordinary Graduation Award. University of Santiago de Compostela, 2008.

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RESEARCH STAYS

Mathematisches Forschungsinstitut Oberwolfach (Germany), 2 weeks, 09/06/2024 − 21/06/2024.

Universidad de Granada (Spain), 10 days, 04/09/2022 − 14/09/2022.

Universidad de Jaén (Spain), 1 week, 27/06/2021 − 03/07/2021.

Universidad Politécnica de Madrid (Spain), 5 weeks, 29/05/2021 − 05/06/2021, 19/09/2021 − 01/10/2021, 24/01/2022 − 28/01/2022, 09/05/2022 − 13/05/2022.

Instituto de Ciencias Matemáticas − ICMAT-CSIC (Spain), 1 week, 01/09/2019 − 07/09/2019.

Universidad de Cádiz (Spain), 1 week, 17/02/2019 − 22/02/2019.

University of Oklahoma (USA), 1 week, 01/10/2018 − 05/10/2018.

University of Notre Dame (USA), 2 weeks, 16/09/2018 − 28/09/2018.

Washington University in St. Louis (USA), 4 days, 12/09/2018 − 15/09/2018.

Instituto Nacional de Matemática Pura e Aplicada − IMPA (Brazil), 1 week, 10/07/2018 − 16/07/2018.

University of Hiroshima (Japan), 3 weeks, 12/04/2018 − 04/05/2018.

Universidad de Murcia (Spain), 1 week, 21/05/2017 − 28/05/2017.

Universidade de São Paulo (Brazil), 2 weeks, 27/03/2017 − 07/04/2017.

Instituto Nacional de Matemática Pura e Aplicada − IMPA (Brazil), 2 weeks, 13/03/2017 − 24/03/2017.

Universidade de São Paulo (Brazil), 2 months, 23/06/2014 − 23/07/2014 and 10/06/2015 − 10/07/2015.

King's College London (United Kingdom), 3 months, 01/04/2013 − 01/07/2013.

Universität Stuttgart (Germany), 1 week, 17/06/2012 − 24/06/2012.

Universität zu Köln (Germany), 3 months, 01/04/2011 − 01/07/2011.

PARTICIPATION IN RESEARCH PROJECTS

Submanifolds, curvature and geometric equations from the viewpoint of symmetry (PID2022-138988NB-I00). Ministry of Science, Innovation and Universities (Spain), 2023 − 2026, €115.000, 11 researchers. Principal investigators: M. Domínguez-Vázquez, M. Brozos-Vázquez.

Research group in Mathematics (Competitive research groups ED431C 2023/31). Galician Government (Spain), 2023 − 2026, €280.000, 16 researchers. Principal investigator: A. Gómez-Tato.

Geometric and analytic aspects of symmetry (Excellence project, ref. ED431F 2020/04). Galician Government (Spain), 2020 − 2024, €115.000, 10 researchers. Principal investigator: M. Domínguez-Vázquez.

Symmetry, curvature and geometric equations (PID2019-105138GB-C21). Ministry of Science and Innovation (Spain), 2020 − 2023, €62.920, 17 researchers. Principal investigators: J. C. Díaz-Ramos, E. García-Río.

Riemannian geometry of submanifolds and isometric actions (Ramón y Cajal project, ref. RYC-2017-22490). Spanish State Research Agency, 2019 − 2023, €40.000, 1 researcher. Principal investigator: M. Domínguez-Vázquez.

Research group in Mathematics (Competitive research groups ED431C 2019/10). Galician Government (Spain), 2019 − 2022, €190.000, 31 researchers. Principal investigator: E. García-Río.

Geometry of symmetric spaces and group actions (OCAMI International Joint Research Project). Osaka City University Advanced Mathematical Institute − Ministry of Education, Culture, Sports, Science and Technology (Japan), 2019-2022, 10 researchers. Principal investigators: T. Hashinaga, H. Tamaru.

Geometric and analytic aspects of isoparametric hypersurfaces (Marie Skłodowska-Curie project No. 745722). Horizon 2020 (European Commission), 2017 − 2019, €19.200, 1 researcher. Experienced Researcher: M. Domínguez-Vázquez.

Homogeneity and curvature of manifolds and submanifolds (ED431F 2017/03). Galician Government (Spain), 2017 − 2018, €40.000, 7 researchers. Principal investigator: J. C. Díaz-Ramos.

Symmetry, curvature and differential equations in geometry (MTM2016-75897-P). Ministry of Economy and Competitiveness (Spain), 2016 − 2019, €72.963, 12 researchers. Principal investigators: J. C. Díaz-Ramos, E. García-Río.

Symmetry, homogeneity and curvature (EM2014/009). Galician Government (Spain), 2014 − 2017, €93.000, 7 researchers. Principal investigator: J. C. Díaz-Ramos.

Symmetry, curvature and rigidity of geometric structures (MTM2013-41335-P). Ministry of Economy and Competitiveness (Spain), 2014 − 2016, €47.700, 11 members. Principal investigators: J. C. Díaz-Ramos, E. García-Río.

Consolidation of competitive research units of the Galician university system (GRC2013-045). Galician Government (Spain), 2013 − 2016, €185.000, 10 researchers. Principal investigator: E. García-Río.

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Curvature and symmetry in semi-Riemannian geometry (MTM2009-07756). Ministry of Science and Innovation (Spain), $2010 - 2012$, €130.075, 14 researchers. Principal investigator: E. García-Río.

Curvature and structure of Lorentzian manifolds (09PXIB207151PR). Galician Government (Spain), $2009 - 2012$, €99.710, 12 researchers. Principal investigator: E. García-Río.

ORGANISED EVENTS

Symmetry and shape. Celebrating the 60th birthday of Prof. Eduardo García Río. Member of the organising and scientific committees, Santiago de Compostela (Spain), 23/09/2024 - 27/09/2024.

Geometry day. Organiser, Santiago de Compostela (Spain), 11/04/2024.

Differential Geometry and Geometric Analysis (*Special Section in the Spanish-Polish Mathematical Meeting*). Co-organiser of the special section, Łodz (Poland), 04/09/2023 - 08/09/2023.

Symmetry and shape. Member of the organising and scientific committees, Santiago de Compostela (Spain), 13/10/2022 - 16/10/2022.

Submanifolds and differential equations in geometry. Member of the organising committee, Santiago de Compostela (Spain), 02/06/2022.

Symmetry and shape. Member of the organising and scientific committees, Santiago de Compostela (Spain), 15/10/2021 - 18/10/2021.

Geometría de espacios con estructuras especiales (*Special Section in the V Encuentro Conjunto RSME-SMM*). Co-organiser of the special section, online conference, 14/06/2021 - 18/06/2021.

Symmetry and shape. Celebrating the 60th birthday of Prof. Jürgen Berndt. Member of the organising and scientific committees, Santiago de Compostela (Spain), 28/10/2019 - 31/10/2019.

Seminario Vidal Abascal (Seminar of the Department of Geometry and Topology). Co-organiser, University of Santiago de Compostela, November $2009 - $ October 2013.

Seminario de Iniciación á Investigación (Seminar of PhD students). Co-organiser and editor of the proceedings, University of Santiago de Compostela, $2009 - 2010$.

SERVICE

Referee of more than 40 articles for international journals, including: *American Journal of Mathematics*; *Journal of Differential Geometry*; *Annali della Scuola Normale Superiore di Pisa, Classe di Scienze*; *Mathematische Zeitschrift*; *The Journal of Geometric Analysis* (x6); *Proceedings of the Royal Society of Edinburgh A*; *Manuscripta Mathematica*; *Transformation Groups*; *Revista Matemática Iberoamericana*; *Publicacions Mathemàtiques*; *Geometriae Dedicata*; *Journal of Geometry and Physics*; *Differential Geometry and its Applications* (x7); *Archiv der Mathematik*.

Reviewer for *Mathematical Reviews* of the American Mathematical Society (x28).

Referee for *Que sabemos de...?* (series of scientific outreach books published by CSIC and Catarata).

Expert evaluator, Spanish State Research Agency (AEI), since 2020.

Member of the PhD thesis committee of *Ivan Solonenko*. Advisor: J. Berndt. King's College London, 22/09/2023.

Member of the PhD thesis committee of *João Batista Marques dos Santos*. Advisor: J. P. dos Santos. University of Brasilia, 28/04/2023.

Member of the PhD thesis committee of *Benigno Alves*. Advisors: M. M. Alexandrino and M. Á. Javaloyes. University of São Paulo, 13/11/2017.

Member of the PhD thesis committee of *Francisco J. Gozzi*. Advisors: L. A. Florit and W. Ziller. IMPA, 1/12/2014.

ADVISORSHIP OF STUDENTS

PhD Thesis of *Ángel Cidre Díaz* (co-advised jointly with V. Sanmartín-López). University of Santiago de Compostela, expected for 2026.

PhD Thesis of *Tomás Otero Casal* (co-advised jointly with J. C. Díaz-Ramos), entitled *Homogeneous hypersurfaces in symmetric spaces*. University of Santiago de Compostela, 20/09/2024. It deserved the highest mark (Cum Laude) and the international distinction awarded by the university.

PhD Thesis of *Alberto Rodríguez Vázquez* (co-advised jointly with J. C. Díaz-Ramos), entitled *Homogeneous hypersurfaces and totally geodesic submanifolds*. University of Santiago de Compostela, 30/09/2022. It deserved the highest mark (Cum Laude), the international distinction awarded by the university and the RSME-BBVA Vicent Caselles award 2024.

Master Thesis of *Ángel Cidre Díaz* (co-advised jointly with V. Sanmartín-López), entitled *Subvariedades homóxeneas minimais nos espazos hiperbólicos complexos*. University of Santiago de Compostela, 15/07/2022. It deserved the mark of 9,5 out of 10.

Miguel Domínguez Vázquez

Master Thesis of *Fernando Peñate Moreno* (co-advised jointly with V. Sanmartín-López), entitled *Teoremas de Cartan y Münzner para hipersuperficies isoparamétricas en esferas*. University of Santiago de Compostela, 15/07/2021. It deserved the mark of 10 out of 10.

PhD Thesis of *Olga Pérez Barral* (co-advised jointly with J. C. Díaz-Ramos), entitled *Ruled hypersurfaces and homogeneous submanifolds in semi-Riemannian manifolds*. University of Santiago de Compostela, 11/12/2020. It deserved the highest mark (Cum Laude).

PhD Thesis of *Víctor Sanmartín López* (co-advised jointly with J. C. Díaz-Ramos), entitled *Homogeneous submanifolds and isoparametric hypersurfaces in symmetric spaces of non-compact type*. University of Santiago de Compostela, 19/07/2019. It deserved the highest mark (Cum Laude) and the international distinction awarded by the university.

Master Thesis of *Alberto Rodríguez Vázquez* (co-advised jointly with J. C. Díaz-Ramos), entitled *Hipersuperficies con curvaturas principais constantes en variedades de Kähler con curvatura seccional holomorfa constante*. University of Santiago de Compostela, 17/07/2018. It deserved the highest mark (Matrícula de Honor).

Undergraduate research project *Submanifolds in symmetric spaces* by *Alberto Rodríguez Vázquez*. Severo Ochoa Initiation to Research Programme, ICMAT, 06/2017 − 09/2017.

Undergraduate research project *Singular Riemannian foliations in spheres* by *Miguel Ángel Berbel López*. Severo Ochoa Initiation to Research Programme, ICMAT, 06/2016 − 09/2016.

PhD Thesis of *Cristina Vidal Castiñeira* (co-advised jointly with J. C. Díaz-Ramos), entitled *Submanifolds in complex projective and hyperbolic planes*. University of Santiago de Compostela, 22/07/2016. It deserved the highest mark (Cum Laude) and the international distinction awarded by the university.

Master Thesis of *Cristina Vidal Castiñeira* (co-advised jointly with J. C. Díaz-Ramos), entitled *Hipersuperficies reais con dúas curvaturas principais nos planos proxectivo e hiperbólico complexos*. University of Santiago de Compostela, 22/07/2013. It deserved the highest mark (Matrícula de Honor).

SCIENCE OUTREACH

The science of imagining other worlds (general public lecture). Ateneo de Ourense (Spain), 30/10/2018.

Without imagination, and only with reason, in mathematics we would not achieve anything (interview in a Spanish newspaper). Faro de Vigo, 26/10/2018.

Symmetry, isoparametric hypersurfaces and prime numbers (short talk in a meeting of scientists of different areas). VIII Galician Meeting of Young Researchers Abroad, A Coruña (Spain), 28/12/2017.

Workshop on soap bubbles, minimal surfaces and shortest paths (jointly with M. M. González, aimed at high school students). Science week at UAM, Madrid, 14/11/2017.

Profile: Miguel Domínguez Vázquez (article authored by E. Del Pozo). ICMAT Newsletter, no. 12, 03/2016.

Equations with symmetry (talk and article). Initiation to Research Seminar, Santiago de Compostela, 12/12/2012.

Differential Geometry…what and why? (short talk). Seminar of Young Researchers, Santiago, 30/11/2011.

The skeleton of a Lie group (talk and article). Initiation to Research Seminar, Santiago de Compostela, 19/10/2011.

Isoparametric hypersurfaces in spheres (talk and article). Initiation to Research Seminar, Santiago de Compostela, 28/04/2010.

Poincaré's hyperbolic world (talk and article). Initiation to Research Seminar, Santiago de Compostela, 22/04/2009.

TEACHING EXPERIENCE

Global theory of surfaces. Degree in Mathematics (6th semester), Universidade de Santiago de Compostela, 15 hours, 2023/2024.

Mathematics and Statistics II. Degree in Pharmacy (2nd semester), Universidade de Santiago de Compostela, 70 hours, 2023/2024.

Geometry and topology of manifolds. Master's Degree in Mathematics, Universidade de Santiago de Compostela, 24 hours, 2023/2024.

Global theory of surfaces. Degree in Mathematics (6th semester), Universidade de Santiago de Compostela, 30 hours, 2022/2023.

Mathematics and Statistics II. Degree in Pharmacy (2nd semester), Universidade de Santiago de Compostela, 50 hours, 2022/2023.

Mathematics and Statistics II. Degree in Pharmacy (2nd semester), Universidade de Santiago de Compostela, 60 hours, 2021/2022.

Geometry and topology of manifolds. Master's Degree in Mathematics, Universidade de Santiago de Compostela, 20 hours, 2021/2022.

Miguel Domínguez Vázquez

Isoparametric hypersurfaces in spaces of constant curvature. Doctorate course, Universidad de Jaén, 2 hours, 28/06/2021.

Mathematics and Statistics II. Degree in Pharmacy (2nd semester), Universidade de Santiago de Compostela, 60 hours, 2020/2021.

Geometry and topology of manifolds. Master's Degree in Mathematics, Universidade de Santiago de Compostela, 20 hours, 2020/2021.

Geometry and topology of manifolds. Master's Degree in Mathematics, Universidade de Santiago de Compostela, 20 hours, 2019/2020.

Mathematics and Statistics I. Degree in Pharmacy (1st semester), Universidade de Santiago de Compostela, 59 hours, 2019/2020.

Advanced course in Geometry. Master's Degree in Mathematics and Applications, Universidad Autónoma de Madrid, 45 hours, 2018/2019. Students satisfaction: 4.9 out of 5.

Geometry of curves and surfaces. Degree in Mathematics (4th semester) and Double Degree in Computers and Mathematics (6th semester), Universidad Autónoma de Madrid, 60 hours, 2018/2019. Students satisfaction: 4.9 out of 5.

Geometry of real hypersurfaces in hyperbolic spaces. Doctorate course, Universidad de Cádiz, 7.5 hours, 02/2019.

Submanifolds and isometric actions in symmetric spaces. Doctorate course, Universidade de Santiago de Compostela, 8 hours, 10/2018.

Isoparametric hypersurfaces. JAE School of Mathematics (aimed at advanced undergraduate students), Instituto de Ciencias Matemáticas (ICMAT), 10 hours, 06/2018.

Algebraic structures. Degree in Mathematics (3rd semester), Universidad Autónoma de Madrid, 48 hours, 2017/2018. Students satisfaction: 4.7 out of 5.

Mathematics I. Degree in Chemical Engineering (1st semester), Universidad Autónoma de Madrid, 60 hours, 2017/2018. Students satisfaction: 4.5 out of 5.

Submanifolds and isometric actions in symmetric spaces of noncompact type. Postgraduate Mathematics course, Universidade de São Paulo, 30 hours, 2017.

Algebraic structures. Degree in Mathematics (3rd semester), Universidad Autónoma de Madrid, 52 hours, 2016/2017. Students satisfaction: 4.64 out of 5.

Introduction to isoparametric foliations. Postgraduate Mathematics course, Universidade de São Paulo, 10 hours, 2014.

Riemannian Geometry. Doctorate course, IMPA, 48 hours, 2014. Students satisfaction: 4.9 out of 5.

Member of the teaching innovation group in Algebra and Geometry GrID-A/XD. Universidade de Santiago de Compostela. Coordinator: María Elena Vázquez Abal.

Mathematics and Statistics. Degree in Pharmacy (2nd semester), Universidade de Santiago de Compostela, 60 hours, 2012/2013.

Topology of Euclidean spaces. Degree in Mathematics (2nd semester), Universidade de Santiago de Compostela, 60 hours, 2011/2012.

Certificate of Pedagogical Aptitude. Universidade de Santiago de Compostela, 2009.

HABILITATIONS

Acreditación para Profesor Titular de Universidad, ANECA (Spain), 21/09/2020.

Acreditación I3, Agencia Estatal de Investigación (Spain), 28/11/2019.

LANGUAGES

Native speaker of Spanish and Galician.

Fluent in English (Certificate in Advanced English) and Portuguese.

Reading skills in French and German (Zertifikat Deutsch).