

# Miguel Domínguez Vázquez

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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

M. Domínguez-Vázquez, T. A. Ferreira, T. Otero: Polar actions on homogeneous 3-spaces, arXiv:2410.18846v1.  
J. DeVito, M. Domínguez-Vázquez, D. González-Álvaro, A. Rodríguez-Vázquez: Positive  $\text{Ric}_2$  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  $k^{\text{th}}$ -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.

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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.

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.

# Miguel Domínguez Vázquez

## INVITED TALKS (CONFERENCES)

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

## INVITED TALKS (SEMINARS)

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.*

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.*

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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.*

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

Universidade de Brasília, Geometry Seminar, Brasília (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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ORGANISED EVENTS	<p><i>Curvature and symmetry in semi-Riemannian geometry</i> (MTM2009-07756). Ministry of Science and Innovation (Spain), 2010 – 2012, €130.075, 14 researchers. Principal investigator: E. García-Río.</p> <p><i>Curvature and structure of Lorentzian manifolds</i> (09PXIB207151PR). Galician Government (Spain), 2009 – 2012, €99.710, 12 researchers. Principal investigator: E. García-Río.</p> <p><i>Symmetry and shape. Celebrating the 60th birthday of Prof. Eduardo García Río</i>. Member of the organising and scientific committees, Santiago de Compostela (Spain), 23/09/2024 - 27/09/2024.</p> <p><i>Geometry day</i>. Organiser, Santiago de Compostela (Spain), 11/04/2024.</p> <p><i>Differential Geometry and Geometric Analysis (Special Section in the Spanish-Polish Mathematical Meeting)</i>. Co-organiser of the special section, Łódz (Poland), 04/09/2023 - 08/09/2023.</p> <p><i>Symmetry and shape</i>. Member of the organising and scientific committees, Santiago de Compostela (Spain), 13/10/2022 - 16/10/2022.</p> <p><i>Submanifolds and differential equations in geometry</i>. Member of the organising committee, Santiago de Compostela (Spain), 02/06/2022.</p> <p><i>Symmetry and shape</i>. Member of the organising and scientific committees, Santiago de Compostela (Spain), 15/10/2021 - 18/10/2021.</p> <p><i>Geometría de espacios con estructuras especiales (Special Section in the V Encuentro Conjunto RSME-SMM)</i>. Co-organiser of the special section, online conference, 14/06/2021 - 18/06/2021.</p> <p><i>Symmetry and shape. Celebrating the 60th birthday of Prof. Jürgen Berndt</i>. Member of the organising and scientific committees, Santiago de Compostela (Spain), 28/10/2019 - 31/10/2019.</p> <p><i>Seminario Vidal Abascal</i> (Seminar of the Department of Geometry and Topology). Co-organiser, University of Santiago de Compostela, November 2009 – October 2013.</p> <p><i>Seminario de Iniciación á Investigación</i> (Seminar of PhD students). Co-organiser and editor of the proceedings, University of Santiago de Compostela, 2009 – 2010.</p>
SERVICE	<p>Referee of more than 40 articles for international journals, including: <i>American Journal of Mathematics</i>; <i>Journal of Differential Geometry</i>; <i>Annali della Scuola Normale Superiore di Pisa, Classe di Scienze</i>; <i>Mathematische Zeitschrift</i>; <i>The Journal of Geometric Analysis</i> (x6); <i>Proceedings of the Royal Society of Edinburgh A</i>; <i>Manuscripta Mathematica</i>; <i>Transformation Groups</i>; <i>Revista Matemática Iberoamericana</i>; <i>Publicacions Matemàtiques</i>; <i>Geometriae Dedicata</i>; <i>Journal of Geometry and Physics</i>; <i>Differential Geometry and its Applications</i> (x7); <i>Archiv der Mathematik</i>.</p> <p>Reviewer for <i>Mathematical Reviews</i> of the American Mathematical Society (x28).</p> <p>Referee for <i>Que sabemos de...?</i> (series of scientific outreach books published by CSIC and Catarata).</p> <p>Expert evaluator, Spanish State Research Agency (AEI), since 2020.</p> <p>Member of the PhD thesis committee of <i>Ivan Solonenko</i>. Advisor: J. Berndt. King's College London, 22/09/2023.</p> <p>Member of the PhD thesis committee of <i>João Batista Marques dos Santos</i>. Advisor: J. P. dos Santos. University of Brasilia, 28/04/2023.</p> <p>Member of the PhD thesis committee of <i>Benigno Alves</i>. Advisors: M. M. Alexandrino and M. Á. Javaloyes. University of São Paulo, 13/11/2017.</p> <p>Member of the PhD thesis committee of <i>Francisco J. Gozzi</i>. Advisors: L. A. Florit and W. Ziller. IMPA, 1/12/2014.</p>
ADVISORSHIP OF STUDENTS	<p>PhD Thesis of <i>Ángel Cidre Díaz</i> (co-advised jointly with V. Sanmartín-López). University of Santiago de Compostela, expected for 2026.</p> <p>PhD Thesis of <i>Tomás Otero Casal</i> (co-advised jointly with J. C. Díaz-Ramos), entitled <i>Homogeneous hypersurfaces in symmetric spaces</i>. University of Santiago de Compostela, 20/09/2024. It deserved the highest mark (Cum Laude) and the international distinction awarded by the university.</p> <p>PhD Thesis of <i>Alberto Rodríguez Vázquez</i> (co-advised jointly with J. C. Díaz-Ramos), entitled <i>Homogeneous hypersurfaces and totally geodesic submanifolds</i>. 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.</p> <p>Master Thesis of <i>Ángel Cidre Díaz</i> (co-advised jointly with V. Sanmartín-López), entitled <i>Subvariedades homoxéneas minimais nos espazos hiperbólicos complexos</i>. University of Santiago de Compostela, 15/07/2022. It deserved the mark of 9,5 out of 10.</p>

# Miguel Domínguez Vázquez

## SCIENCE OUTREACH

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).

*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

*Mathematics and Statistics II*. Degree in Pharmacy (2nd semester), Universidade de Santiago de Compostela, 74 hours, 2024/2025.

*Riemannian geometry*. Master's Degree in Mathematics, Universidade de Santiago de Compostela, 24 hours, 2024/2025.

*Mathematics and Statistics I*. Degree in Pharmacy (1st semester), Universidade de Santiago de Compostela, 74 hours, 2024/2025.

*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.



# Miguel Domínguez Vázquez

*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.

*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).