

CURRICULUM VITAE

DATE February 7, 2025

Part A. PERSONAL INFORMATION

Given Name	Guillermo		
Family Name	Gallego Sánchez		
Date of Birth	July 21, 1995		
Nationality	Spanish		
Languages	Spanish (Native), English (Proficient), German (Basic), French (Basic)		
E-Mail Address	guillermo.gallego.sanchez@fu-berlin.de	Web	guillegallego.xyz

A.1. Current Job Status

Position	Postdoc Researcher (Wissenschaftlicher Mitarbeiter)
Start date	May 15, 2024
Institution	Freie Universität Berlin
Departament / Center	Institut für Mathematik

A.2. Academic Career and Former Academic Positions

Degree/Master/Thesis	University	Year
PhD in Mathematics	Universidad Complutense de Madrid	2023
Master in Teacher Training	Universidad Complutense de Madrid	2020
Master in Advanced Mathematics	Universidad Complutense de Madrid	2019
Degree in Mathematics	Universidad Complutense de Madrid	2018
Degree in Physics	Universidad Complutense de Madrid	2018

Position	University / Research Center / Department	Period
Postdoc Researcher (FPI-UCM - POP)	Universidad Complutense de Madrid	2023-2024
Predoc Researcher (FPI-UCM)	Universidad Complutense de Madrid	2020-2023
Collaboration grant	Universidad Complutense de Madrid	2017-2018

Part B. RELEVANT SCIENTIFIC PRODUCTION

B.1. Publications

B.1.1. Journal Papers

[1] (with O. García-Prada), Multiplicative Higgs bundles and involutions. (2023). Advances in Mathematics.

<https://doi.org/10.1016/j.aim.2024.109789>

[2] (with O. García-Prada and M. S. Narasimhan), Higgs bundles twisted by a vector bundle. (2023). International Journal of Mathematics.

<https://doi.org/10.1142/S0129167X24410076>

B.1.2. Proceedings

[3] Universal spectral covers and the Hitchin map. (2021). TEMat monográficos, 2: Proceedings of the 3rd BYMAT Conference.

<https://temat.es/monograficos/article/view/vol2-p107>

B.2. Stays and Conferences

B.2.1. Invited conference talks

- “Langlands duality for generalized Hitchin systems”. Christmas M³ Geometry Workshop. ICMAT, Madrid. 19 December 2024.
- “Teoría gauge y geometría algebraica”. Geometry and Topology for the Future. Universidad Complutense de Madrid. 25 April 2024.
- “Multiplicative Higgs bundles and involutions”. Conference on the Hitchin System, Langlands duality and mirror symmetry. ICMAT, Madrid. 27 April 2023.
- “La fibración de Hitchin: Análogos y generalizaciones”. VI Congreso de Jóvenes Investigadores de la RSME. Universidad de León. 6 February 2023.
- “La fibración de Hitchin: Análogos y generalizaciones”. II Encuentro conjunto RSME-UMA. Ronda, Málaga. 12 December 2022.
- “Multiplicative Higgs bundles”. Workshop de Jóvenes Investigadores del Laboratorio Hitchin- $\text{Ng}\hat{o}$. ICMAT, Madrid. 4 March 2022.
- “Higgs bundles twisted by a vector bundle”. OLGA 2021. 24 June 2021.
- “Higgs bundles twisted by a vector bundle”. XIII Workshop de Jóvenes Investigadores en Matemáticas. Universidad Complutense de Madrid. 27 September 2019.
- “Debunking some myths about π ”. 25th anniversary of the Faculty of Mathematics and π day. 14 March 2018.

B.2.2 Contributed conference talks

- “Monoids, symmetric varieties and multiplicative Hitchin systems”. 14 November 2023. BYMAT 2023.
- “Moduli spaces and geometric structures”. 3 July 2023. PhDay Mathematics UCM.
- “Universal spectral covers and the Hitchin map”. BYMAT 2020. Extended abstract published in TEMat monográficos, 2: Proceedings of the 3rd BYMAT Conference (2021) 107-110.
- Mini-course on Symplectic Geometry in Classical Mechanics. SEMF Summer School. 9-13 July 2018.

B.2.3 Seminar talks

- “Analogues and generalizations of the Hitchin moduli space. Multiplicative Higgs bundles”. Complex Analysis Seminar at FU Berlin. 15 October 2024.
- “Multiplicative Higgs bundles, monopoles and involutions”. Geometry Seminar at the University of Waterloo. 5 March 2024.
- “Multiplicative Hitchin fibration and Langlands duality”. Algebraic Geometry Seminar at CIRGET, Montreal. 28 February 2024.
- “The multiplicative Hitchin fibration for symmetric pairs”. Seminar at The University of Chicago. 18 November 2022.

- “Una invitación al programa de Langlands geométrico”. Seminario Antonio Giraldo y Sonia Sastre. Universidad Politécnica de Madrid. 12 May 2022.
- “Higgs bundles twisted by a vector bundle”. Geometry Seminar. Albert-Ludwigs-Universität Freiburg. 4 February 2022.
- “Introducción a la teoría de categorías”. Seminario Dedekind’s Army. Universidad Complutense de Madrid. 30 November 2021.
- “Una invitación al programa de Langlands geométrico”. Seminario de Doctorandos en Matemáticas. Universidad Complutense de Madrid. 2 November 2021.
- “Classification of compact surfaces”. Dedekind’s Army Seminar. 28 February 2018.
- “Symplectic Geometry”. Dedekind’s Army Seminar. 22 February 2017.

B.2.4. Organization

- Co-organizer of the reading seminar on “Operads and moduli spaces” in FU Berlin. Year 2024.
- Organizer of the seminar “The Hitchin system, Langlands duality and mirror symmetry” in ICMAT. Year 2023.
- Collaborator in the organization of the conference “Moduli spaces and geometric structures” in honour of Oscar García-Prada on the occasion of his 60th birthday in ICMAT. 12-16 September 2022.
- Co-organizer of the Red de Doctorandos en Matemáticas de la UCM. Year 2022-2023.

B.2.5. Research Stays

- McGill University. Montreal, Canada. Research stay with Jacques Hurtubise. February-March 2024.
- The University of Chicago. Chicago, USA. Research stay with Ngô Bao Châu. November 2022.
- Indian Institute of Science. Bangalore, India. Research stay with M. S. Narasimhan. February 2020.

B.3. Research Projects

- Costa-ricanisch-deutsche-Forschungskooperation: Fundamentalgruppen, Charaktervarietäten und Higgsbündel. Deutsche Forschungsgemeinschaft (DFG) - Projektnummer 524596398. PI: Alexander Schmitt.
- Espacios de móduli y teoría gauge (Spanish Ministry of Science). Code: PID2019-109339GB-C31. PI: Oscar García-Prada.
- Nigel Hitchin and Ngô Bao Châu Laboratory, ICMAT.

Part C. TEACHING EXPERIENCE

C.1. Courses taught

- Year 2023-2024. 2nd semester. Computational Geometry. 4th year of the Degree in Mathematics at UCM.
- Year 2023-2024. 1st semester. Smooth Manifolds. 4th year of the Degree in Mathematics at UCM.
- Year 2021-2022. 2nd semester. Physics: Mechanics and Waves. 2nd year of the Degree in Mathematics at UCM.
- Year 2021-2022. 1st semester. Differential Geometry of Curves and Surfaces. 3rd year of the Degree in Mathematics at UCM.
- Year 2021-2022. 1st semester. Calculus. 1st year of the Degree in Computer Science at UCM.
- Year 2020-2021. 2nd semester. Physics: Mechanics and Waves. 2nd year of the Degree in Mathematics at UCM.
- Year 2020-2021. 1st semester. Projective Geometry. 2nd year of the Degree in Mathematics at UCM.
- Summer 2019. Data Science Bootcamp. NEOLAND Academy.

C.2. Supervised students

- Year 2023-2024. Román Ahumada Gialanella. *Derived categories of sheaves*. Master Thesis. Coadvised with Emilio Franco.
- Year 2023-2024. Juan Martín Fajardo. *Čech cohomology*. Bachelor Thesis. Coadvised with Guillermo Sánchez Arellano.
- Year 2022-2023. Román Ahumada Gialanella. *Variational principles in geometry*. Bachelor Thesis. Coadvised with Ángel González Prieto.
- Year 2021-2022. Tomás Ruiz-Roso Salgado. *Gauge theory and algebraic topology*. Bachelor Thesis.

C.3. Participation in Thesis committees

- Juan Martín Pérez Bernal. Dissertation title: *Donaldson-Uhlenbeck type moduli spaces for principal bundles over higher dimensional manifolds*. Disputation title: *On a Conjecture of Gaiotto*. FU Berlin. 29 October 2024.