Pablo Olleros Rodríguez

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EMPLOYMENT

2024 – Present. Assistant Professor, Dept. of Quantitative Methods (CUNEF Universidad)

2022 – 2024. Postdoctoral Researcher (IMDEA Nanociencia)

2022 – 2024. Associate Lecturer (Universidad CEU San Pablo)

2021 – 2022. Lecturer (Universidad CEU San Pablo)

2017 – 2021. Predoctoral Researcher (Fundación IMDEA Nanociencia)

2017. Research Technician at Instituto de Física Corpuscular (CSIC-UV)

EDUCATION

2021 - PhD in Condensed Matter Physics, Nanoscience and Biophysics. (Universidad Autónoma de Madrid)

2017 - MSc in Nuclear Physics (Universidad de Salamanca)

2016 - BSc in Physics (Universidad de Salamanca)

2005 – BSc in Information Systems

FIELDS OF INTEREST

Nanomagnetism. Skyrmionics. Magnonics. Probabilistic Computing. Computational Physics

PUBLICATIONS

- Olleros-Rodriguez, Pablo; Gudín, Adrián; …; Perna, Paolo: "Anatomy of the Dynamics of the Nucleation of Skyrmions in Nanodots via the Voltage-Controlled Magnetic Anisotropy". *Advanced Physics Research.* 4(2). 2400107. 2025
- Díaz, Eva; Anadón, Alberto; Olleros-Rodriguez, Pablo; …; Gorchon, Jon.: "Energy-efficient picosecond spin–orbit torque magnetization switching in ferro- and ferrimagnetic films". *Nature Nanotechnology.* 20. 36-42. 2025
- Muñiz-Cano, Beatriz; Gudín, Adrián; …; Perna, Paolo: "Rashba-like Spin Textures in Graphene Promoted by Ferromagnet-Mediated Electronic Hybridization with a Heavy Metal". *ACS Nano*. 18(24). 15716-15728. 2024
- Olleros-Rodríguez, Pablo; Strungaru, Mara; …; Chubykalo-Fesenlo, Oksana: "Non-equilibrium heating path for the laser-induced nucleation of metastable skyrmion lattices". *Nanoscale*. 14(42). 15701-15712. 2022
- María Blanco-Rey, María; Perna, Paolo, Gudín, Adrián; …; Iribar Cerdá, Jorge. "Large perpendicular magnetic anisotropy in nanometer-thick epitaxial graphene/Co/heavy metal heterostructures for spin–orbitronics devices". *ACS Applied Nano Materials*. 4(5). 4398-4408. 2021
- Villanueva, Melek; Sánchez, Elena H.; Olleros-Rodríguez, Pablo; …, Bollero, Alberto. "Effective control of the magnetic anisotropy in ferromagnetic MnBi micro-islands". *Journal of Alloys and Compounds*. 852. 156731. 2021
- Alberto Anadón, Rubén Guerrero, Jorge Alberto Jover-Galtier,…,Paolo Perna. "Spin-orbit torque from the introduction of Cu interlayers in Pt/Cu/Co/Pt nanolayered structures for spintronic devices". *ACS Applied Nano Materials*. 4(1). 487-492. 2020
- Olleros-Rodríguez, Pablo; Guerrero, Rubén; Camarero, Julio; Chubykalo-Fesenko,Oksana; Perna, Paolo. "Intrinsic Mixed Bloch–Néel Character and Chirality of Skyrmions in Asymmetric Epitaxial Trilayers". *ACS Applied Materials & Interfaces*. 12(22). 25419-25427. 2020
- Ajejas, Fernando; Anadón, Alberto; Gudín, Adrián; …; Perna, Paolo. "Thermally Activated Processes for Ferromagnet Intercalation in Graphene-Heavy Metal Interfaces". *ACS Applied Materials & Interfaces*. 12(3). 4088-4096. 2019
- Ajejas, Fernando; Gudín, Adrián; Guerrero, Rubén; …; Perna, Paolo. "Unraveling Dzyaloshinskii–Moriya interaction and chiral nature of graphene/cobalt interface". *ACS Nano Letters*. 18(9) 5364-5372. 2018

WORKING PAPERS

Pradeep, Pranav; Olleros-Rodríguez, Pablo; …; Vélez, Saül. "X-ray detection of current-induced orbital angular momentum accumulation at Cu/oxide interfaces"

SELECTED ACADEMIC HONOURS AND GRANTS

- PhD awarded with "Cum Laude" and International mentions

- Recognized Research Period (Sexenio), awarded by the Spanish National Research Evaluation Commission (CNEAI), for outstanding research performance (6 years)
- Principal Investigator (PI) of the PHANTOMA project, funded by the Spanish Ministry of Science and Innovation, Government of Spain (3-year duration)

SELECTED PRESENTATIONS

CONFERENCES

- “Nucleating Magnetic Skyrmions in Gr/Co/Pt Patterned Nanodots via the Voltage Controlled Magnetic Anisotropy” (Joint Conference MMM – Intermag, 2022)
- “Micromagnetic Study of stable Skyrmions in Dot-Patterned Graphene-Based Magnetic Trilayers” (Intermag, 2021)
- “Nucleation of Metastable Skyrmion Lattices following a Laser-Induced Non-Equilibrium Heating Path” (Intermag, 2021)
- “Non-equilibrium path for the light-induced nucleation of skyrmion lattices” (Joint European Magnetic Symposia - JEMS2020, 2020)

SEMINARS

- “Non-equilibrium path for the light-induced nucleation of skyrmion lattices” (Joint Conference of the Condensed Matter Divisions of EPS, CMD and RSEF – CMD2020GEFES)
- “Fundamentals of micromagnetic Simulations” (European Summer School 2023)

PROFESSIONAL ACTIVITIES

- Referee for high-impact international peer-reviewed journals
- Organizer and coordinator of academic workshops
- Member of BSc dissertation committees
- Academic tutor for the Erasmus Programme